

# A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010041

6.8 Environmental Statement – Appendix 11.4 Ground Investigation Works 2 of 2 Part B

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

June 2020



# Infrastructure Planning

# Planning Act 2008

# The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

# The A1 in Northumberland: Morpeth to Ellingham Development Consent Order 20[xx]

**Environmental Statement - Appendix** 

Regulation Reference:	APFP Regulation 5(2)(a)
Planning Inspectorate Scheme	TR010041
Reference	
Application Document Reference	TR010041/APP/6.8
Author:	A1 in Northumberland: Morpeth to Ellingham
	Project Team, Highways England

Version	Date	Status of Version
Rev 0	June 2020	Application Issue



# Report No. EFS/193469 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 Morpeth to Felton & Alnwick to Ellingh

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 05-Dec-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 13-Dec-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Analytical and Deviating Sample Overview (Page 3) Table of Method Descriptions (Page 4) Table of Report Notes (Page 5) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK L Becky Batham



Date of Issue: 13-Dec-2018

Tests marked '^' have been subcontracted to another laboratory.

	Units :	mg/kg	mg/l	%	pH Units									
	Method Codes :	ICPACIDS	ICPWSS	TSBRE1	WSLM50									
	Method Reporting Limits :	20	10	0.005										
	UKAS Accredited :	Yes	Yes	No	No									
LAB ID Number CL/	Client Sample Description Date	SO4 (acid sol)	SO4 (H2O sol) mg/l	Total Sulphur.	pH (BS1377)									
1936190	BH/17/12 D 2 0.30	506	<10	0.043	7.9									
1936191	BH/17/12 D 6 1.70	361	22	0.036	7.6									
1936192	TP/17/14 D 3 0.60	207	<10	0.028	7.0									
			!											
		Client N	ame	SOCOT	FEC UK E	Ooncaster				Sam	ple Ana	alysis		
	Brathy Business Park Ashby Road	Contact							Data Brir	tod		4.2	-Dec-2019	
	Button on Trant Staffordabira DE45 01/7								Date Printed 13-De				-Dec-2010	
	Durton-ori-i rent, Stattorosnire, DE15 UYZ	A801	A8013-18 A1 Morpeth to Felton & Alnwick to Ellingh							h Report Number EFS/19			-5/193469	
	Tel +44 (0) 1283 554400		,											
1	Fax +44 (0) 1283 554422	1												

### **Sample Analysis**

## **SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Doncaster		Consignment No S81086										
Site	A8013-18 A1 Morpeth to Felton & Alnwick to Ellingh Date L										3		
Report No	S193469					In-Ho	ouse	Repo	rt Due	e 12-D	Dec-2	018	
Please note the re	sults for any subcontracted analysi	is (identified	with	a '^') is l	ikely to	take	up to	an ad	lditio	nal fiv	/e wo	rking	days.
		MethodID	CustSer	Dep.Op		ICPACID	ICPBR	ICPWS	KONEC	KoneNO	TSBRE	WSLM5	

		MethodID	tServ	o.Opt			ACIDS	BRE	wss	VECL	eNO3	BRE1	LM50	
ID Number	Description	Sampled	REPORT A	DO CI if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4 (acid sol)	Magnesium (BRE)	SO4 (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)	
CL /1026100	PU/17/12 0 20		D				✓   □	D	✓   □	D	D	D		
CL/1930190					0									
CL/1936191	BH/17/12 1.70	U	D				D	U	D	D	U	D	D	
CL/1936192	TP/17/14 0.60	D	D				D	D	D	D	D	D	D	

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	<ul> <li>Analysis Subcontracted - Note: due date may vary</li> </ul>

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried	Determination of Water Soluble Sulphate in soil samples by water
		@ < 35°C	extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried	Determination of Total Carbon and/or Total Sulphur in solid
		@ < 35°C	samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried	Determination of pH of 2.5:1 deionised water to soil extracts using
		@ < 35°C	pH probe.

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l NiI: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client : SOCOTEC UK Doncaster Site : A8013-18 A1 Morpeth to Felton & Alnwick to Ellingh S19\_3469

Report Number :

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1036100	BH/17/12 D 2 0 30	Brown Stone SILT
CL/1930190	DH/17/12 D 2 0.30	
CL/1930191	TP/17/14 D 2 0 60	
CL/1930192	TF/17/14 D 3 0.00	



# Report No. EFS/194145 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 Al Alnwik to Ellington

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 22-Dec-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 07-Jan-2019

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Analytical and Deviating Sample Overview (Page 3) Table of Method Descriptions (Page 4) Table of Report Notes (Page 5) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham

Operations Manager Energy & Waste Services Date of Issue: 07-Jan-2019

Tests marked '^' have been subcontracted to another laboratory.

	Math	Units :	mg/kg	mg/l	%	pH Units										
	Method Reporti	na Limits :	20	10	0.005	VV SLIVISU										
	UKAS A	ccredited :	Yes	Yes	No	No										
LAB ID Number CL/	Client Sample Description	Sample Date	SO4 (acid sol)	SO4 (H2O sol) mg/l	Total Sulphur.	рН (В\$1377)										
1939005	BH17/07 D 16 7.00		1050	291	1.14	7.9										
			1	1		1			1	1			1			
			1	1		1			1	1			1			
			1	1		1			1	1			1			
			1	1		1			1	1			1			
SOCOTEC CIient Name SOCOTEC UK Contact Neil Cooke					TEC UK D	Doncaster		1	1		Sam	ple Ana	alysis			
В	Brethy Business Park, Ashby Road			4						Date Pri	nted		07-Jan-2019			
В	Surton-on-Trent, Staffordshire, DE15 0YZ										Report Number FES/10/1/45					
	Tel +44 (0) 1283 554400			A8013-18 AI Alnwik to Ellington							Table Number					
	Ter +44 (0) 1263 554400											IIIDEI		1		
1 '	rax +44 (0) 1283 554422		1								1		1			

### **Sample Analysis**

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

Customer SOCOTEC UK Doncaster						Consignment No S81530									
Site A8013-18 Al Alnwik to Ellington						Date Logged 22-Dec-2018									
Report No	eport No S194145					In-House Report Due 07-Jan-2019									
Please note the re	esults for any subcontracted analys	sis (identified	l with	a '^') is lil	kely to	take	up to	an ac	ditio	nal fiv	/e wo	rking	days.		
			Cus	Dep		ICP,	ГÇР	ICP	КО	Kon	TSE	ws			

		MethodID	ıstServ	∍p.Opt			PACIDS	PBRE	PWSS	ONECL	oneNO3	SBRE1	SLM50	
ID Number	Description	Sampled	REPORT A	DO CI if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4 (acid sol)	Magnesium (BRE)	SO4 (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)	
							✓		✓					
CL/1939005	BH17/07 7.00	D	D	D	D	D	D	D	D	D	D	D	D	Í

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried	Determination of Water Soluble Sulphate in soil samples by water
		@ < 35°C	extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried	Determination of Total Carbon and/or Total Sulphur in solid
		@ < 35°C	samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried	Determination of pH of 2.5:1 deionised water to soil extracts using
		@ < 35°C	pH probe.

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 AI Alnwik to Ellington
Report Number :	S19_4145

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1020005		Brown Stope CLAV
01/1999009		DIOWN SIGNE CLAT



# Report No. EFS/189967 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 Alnwick to Ellingham

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 14-Sep-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 20-Sep-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Analytical and Deviating Sample Overview (Page 3) Table of Method Descriptions (Page 4) Table of Report Notes (Page 5) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Tim Barnes



Date of Issue: 20-Sep-2018

Tests marked '^' have been subcontracted to another laboratory.

		Units :	mg/kg	mg/l	%	pH Units							
	Methc	od Codes :	ICPACIDS	ICPWSS	TSBRE1	WSLM50							
	Method Reportin	ng Limits :	20	10	0.005								
	UKAS Ac	ccredited :	Yes	Yes	No	No							
LAB ID Number CL/	Client Sample Description	Sample Date	SO4 (acid sol)	SO4 (H2O sol) mg/l	Total Sulphur.	pH (BS1377)							
1922123	BH/17/01 D 9 2.70		727	159	0.233	8.1							
1922124	BH/17/02 D 6 1.10		220	42	0.144	8.3							
1922125	BH/17/13 D 8 3.20		365	52	0.097	8.4							
			Client N Contact	ame	SOCOT	EC UK D	oncaster		Samj	ole Ana	alysis		
	Bretby Business Park, Ashby Road								Date Printed		20-Sep-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ								Report Number		EFS/189967		
	Tel +44 (0) 1283 554400			A80	13-18	5 A1 A	inwick to E	llingham	Table Number 1				
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422										· · · · ·		

### Sample Analysis

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

CustomerSOCOTEC UK DoncasterConsignment No S78154SiteA8013-18 A1 Alnwick to EllinghamDate Logged 14-Sep-2018Report NoS189967In-House Report Due 20-Sep-2018Please note the results for any subcontracted analysis (identified with a '^) is likely to take up to an additional five working days.

		MethodID	CustServ	Dep.Opt			ICPACIDS	ICPBRE	ICPWSS	KONECL	KoneNO3	TSBRE1	WSLM50	
ID Number	Description	Sampled	REPORT A	DO CI if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4 (acid sol)	Magnesium (BRE)	SO4 (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)	
01/4000400							<ul> <li>✓</li> </ul>	<b>D</b>	✓					
CL/1922123	BH/17/01 2.70			U	D	U		0		D	0			
CL/1922124	BH/17/02 1.10	ט	D				D	D	D	D	D	D	D	
CL/1922125	BH/17/13 3.20-3.65	D	D				D	D	D	D	D	D	D	

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status.

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried	Determination of Water Soluble Sulphate in soil samples by water
		@ < 35°C	extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried	Determination of Total Carbon and/or Total Sulphur in solid
		@ < 35°C	samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried	Determination of pH of 2.5:1 deionised water to soil extracts using
		@ < 35°C	pH probe.

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick to Ellingham
Report Number :	S18_9967

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1922123	BH/17/01 D 9 2.70	Brown Gravel SILT
CL/1922124	BH/17/02 D 6 1.10	Brown Silt CLAY Stone
CL/1922125	BH/17/13 D 8 3.20	Brown Stone SILT



# Report No. EFS/189968 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 Alnwick to Ellingham

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 14-Sep-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 20-Sep-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Analytical and Deviating Sample Overview (Page 3) Table of Method Descriptions (Page 4) Table of Report Notes (Page 5) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Tim Barnes

Operations Director Energy & Waste Services Date of Issue: 20-Sep-2018

Tests marked '^' have been subcontracted to another laboratory.

LAB ID Number CL/	Metho Method Reportin UKAS Ar Client Sample Description	Units : od Codes : ng Limits : ccredited :	mg/kg ICPACIDS 20 Yes SO4- (accid so)	mg/l ICPWSS 10 Yes SO4- (H2O sol) mg/l	% TSBRE1 0.005 No Total Sulphur.	pH Units WSLM50 No PH (BS1377)										
1922126	TP/17/02 D 2 0.80		166	24	0.037	7.5										
5			Client N	ame	SOCOT	FEC UK D	Ooncaster					Sam	ple Ana	alysis		
B	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422			A8013-18 A1 Alnwick to Ellingham								Date Printed     20-Sep-2018       Report Number     EFS/189968       Table Number     1				

### Sample Analysis

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

Customer	SOCOTEC UK Doncaster			Cons	signm	ent N	lo S78	3154	-	•	
Site	A8013-18 A1 Alnwick to Ellingham	1		Date	Logg	jed 14	4-Sep	-2018	3		
Report No	S189968			In-He	ouse l	Repo	rt Due	20-5	Sep-20	018	
Please note the res	sults for any subcontracted analysis (identifie	ed with	a '^') is like	ly to take	up to	an ac	ditio	nal fiv	/e wo	rking	days.
		ĉ	D	ICF	ю	ю	КС	Ко	ΤS	¥,	

		MethodID	ustServ	ep.Opt			PACIDS	PBRE	PWSS	ONECL	oneNO3	SBRE1	'SLM50
ID Number	Description	Sampled	REPORT A	DO CI if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4 (acid sol)	Magnesium (BRE)	SO4 (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)
							✓		✓				
CL/1922126	TP/17/02 0.80	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key					
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis					
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis					
	C Headspace present in the sample container					
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis					
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time					
provide missing information in order to reinstate accreditation.	Comparing date was not supplied so holding time may be compromised - applicable to all analysis     E Sample processing did not commence within the appropriate holding time     F Sample processing did not commence within the appropriate handling time     Requested Analysis Key					
	C Headspace present in the sample container D The sampling date was not supplied so holding time may be compromised - applicable to all analysis E Sample processing did not commence within the appropriate holding time F Sample processing did not commence within the appropriate handling time Requested Analysis Key Analysis Required Analysis dependant upon trigger result - Note: due date may be affected if triggered No analysis scheduled					
	Analysis Required					
	Analysis dependant upon trigger result - Note: due date may be affected if triggered					
	No analysis scheduled					
	<ul> <li>Analysis Subcontracted - Note: due date may vary</li> </ul>					
	lite are floared as a report pater for status					

Where individual results are flagged see report notes for status.

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried	Determination of Water Soluble Sulphate in soil samples by water
		@ < 35°C	extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried	Determination of Total Carbon and/or Total Sulphur in solid
		@ < 35°C	samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried	Determination of pH of 2.5:1 deionised water to soil extracts using
		@ < 35°C	pH probe.

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick to Ellingham
Report Number :	S18_9968

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1922126	TP/17/02 D 2 0 80	Brown Stone SILT
01,1022.120		



# Report No. EFS/189969 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 Alnwick to Ellingham

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 14-Sep-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 20-Sep-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Page 2) Analytical and Deviating Sample Overview (Page 3) Table of Method Descriptions (Page 4) Table of Report Notes (Page 5) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Tim Barnes

Operations Director Energy & Waste Services Date of Issue: 20-Sep-2018

Tests marked '^' have been subcontracted to another laboratory.

LABID Nu	Metho Method Reportin UKAS Ar	Units : od Codes : ng Limits : ccredited :	mg/kg ICPACIDS 20 Yes SO4	mg/l ICPWSS 10 Yes S04 (H2C	%           TSBRE1           0.005           No	PH Units WSLM50 No										
mber CL/		e Date	cid sol)	) sol) mg/l	Jiphur.	11377)										
1922127	TP/17/07 D 2 1.40		444	57	0.056	7.2										
					+											
					+										<u></u>	<u> </u>
					1										<u></u>	<u></u>
					<u> </u>											
					+											
					+											
					+			1								
S			Client N Contact	ame	SOCOT	FEC UK E	Doncaster					Sam	ple Ana	alysis		
в	retby Business Park, Ashby Road				+						Date Pri	nted		20-Sep-2018		
В	urton-on-Trent, Staffordshire, DE15 0YZ			A 0.0	140 40		lowiok to l		hom		Report Number EFS/18996			EFS/189969		
	Tel +44 (0) 1283 554400			A8013-18 A1 AINWICK to Ellingham							Table Number   1					
1	Fax +44 (0) 1283 554422															

### Sample Analysis

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

Customer	SOCOTEC UK Doncaster			Cons	signm	ent N	lo S78	3154	-	•	
Site	A8013-18 A1 Alnwick to Ellingham	Date	Date Logged 14-Sep-2018								
Report No	S189969			In-Ho	ouse l	Repo	rt Due	e 20-8	Sep-20	018	
Please note the re	sults for any subcontracted analysis (identified	ed with	a '^') is like	ly to take	up to	an ac	ditio	nal fiv	/e wo	rking	days.
		ß	D	ICF	ō	ō	K	Ň	Τs	×	

		MethodID	ıstServ	ep.Opt			PACIDS	PBRE	PWSS	ONECL	oneNO3	SBRE1	SLM50	
ID Number	Description	Sampled	REPORT A	DO CI if pH<5.5	DO Mg if SO4(W)>3000	DO NO3 if pH<5.5	SO4 (acid sol)	Magnesium (BRE)	SO4 (H2O sol) mg/l	Chloride:(2:1)	Nitrate (BRE 2:1): mg/l	Total Sulphur.	pH (BS1377)	
							✓		✓					
CL/1922127	TP/17/07 1.40	D	D	D	D	D	D	D	D	D	D	D	D	

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status.

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPWSS	Oven Dried	Determination of Water Soluble Sulphate in soil samples by water
		@ < 35°C	extraction followed by ICPOES detection
Soil	TSBRE1	Oven Dried	Determination of Total Carbon and/or Total Sulphur in solid
		@ < 35°C	samples by high temperature combustion/infrared detection
Soil	WSLM50	Oven Dried	Determination of pH of 2.5:1 deionised water to soil extracts using
		@ < 35°C	pH probe.

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

 $\ensuremath{\text{Req}}$  Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick to Ellingham
Report Number :	S18_9969

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1922127	TP/17/07 D 2 1.40	Brown Gravel SILT



# APPENDIX F GEOENVIRONMENTAL LABORATORY TEST RESULTS

Soil Sample Analysis Test Reports

EFS/188497 EFS/189114 EFS/189115 EFS/189116 EFS/190987 EFS/190988 EFS/190990 EFS/191142 EFS/191143 EFS/191212 EFS/191729 EFS/191730

Water Sample Analysis Test Reports

EXR/274297 EXR/274392



# Report No. EFS/188497 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 02-Aug-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 14-Aug-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6) Table of Asbestos Screening Results (Page 7) Analytical and Deviating Sample Overview (Pages 8 to 9) Table of Additional Report Notes (Page 10) Table of Method Descriptions (Page 11) Table of Report Notes (Page 12) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Tim Barnes Operations Director Energy & Waste Services

Date of Issue: 14-Aug-2018

Tests marked '^' have been subcontracted to another laboratory.

	Metho	Units :	µg/kg BTEXHSA	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
	Method Reportin	ng Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS A	ccredited :	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (≻C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1917199	BH/17/01 ES 2 0.20		< 10.0	< 10.0	< 20.0	< 20.0*	10	< 10.0	< 30.0	<17.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1917200	BH/17/02 ES 4 0.75		< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<20.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1917201	BH/17/13 ES 2 0.30		< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<18.4	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1917202	BH/17/14 ES 4 0.75		< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<22.2	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
	SOCOTEC 🤇		Client N	ame	SOCOT	EC UK D	Ooncaste	r					Sam	ple Ana	lysis			
	Brothy Business Park, Ashby Poad		Contact			6						Data Pris	atod		47	1-1-010-2019		
	Burton-on-Trent Staffordshire DE15 0V7											Date Pill	lumbor			ES/12010		
	Tol +44 (0) 1283 554400		A80	13-18	8 A1 Ir	ו Mor	peth	To Fe	Iton 8	k Alnw	vick				EF5/18849/			
	Fax +44 (0) 1283 554422						•					1 able Number 1						

Units : Method Codes :			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1917199	BH/17/01 ES 2 0.20		< 0.200	806	1.2	0.7	9.7	0.23	17.6	12	21	496.1	<0.1	<0.5	14.1	0.7	24.4	50
1917200	BH/17/02 ES 4 0.75		< 0.200	209	0.8	0.6	8.6	0.22	20.6	15.4	16.5	1314	<0.1	0.5	24.3	0.6	26	51.1
1917201	BH/17/13 ES 2 0.30		< 0.200	498	0.7	0.3	3.9	<0.1	18.4	9.3	16	191.1	<0.1	<0.5	12.4	0.8	25.9	27.8
1917202	BH/17/14 ES 4 0.75		< 0.200	320	1.2	0.3	5.2	<0.1	22.2	11.7	14.3	324.4	<0.1	0.5	14.8	0.7	49.2	42.1
		Client N Contact	Client Name SOCOTEC UK Doncaster Contact Neil Cooke								Sample Analysis							
Bretby Business Park, Ashby Road												Date Printed 1			4-Aug-2018	1		
	Burton-on-Trent, Staffordshire, DE15 0YZ		A8013-18 A1 In Morpeth To Felton & Alnwick								Report Number			E	FS/188497	1		
	Tel +44 (0) 1283 554400										Table Number				1	1		
Fax +44 (0) 1283 554422																		
	Mothe	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
-------------------	--	-------------	----------	------------	---------	--------------	-------------------	----------------	------------	--------------------	----------------	----------------------	--------------------	----------------------	----------	-----------------------	--------------	----------
	Method Reportin	ng Limits :	0.5	0.1	36	0.1	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1917199	BH/17/01 ES 2 0.20		114	0.65	22400	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1917200	BH/17/02 ES 4 0.75		257	0.683	32700	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1917201	BH/17/13 ES 2 0.30		150	0.703	22100	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1917202	BH/17/14 ES 4 0.75		84.7	0.538	27200	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.11	< 0.08
	SOCOTEC 🤇		Client N	ame	SOCOT		Ooncaste	r					Sam	ple Ana	alysis			
	Brethy Business Park Ashby Poad		Contact									Data Brit	ated		1 /	L-Aug-2010		
	Burton-on-Trent Staffordshire DE15 0V7											Bonort N	lumbor			FS/182/07		
	Tal +44 (0) 1283 554400		A80	13-18	3 A1 Iı	n Mor	peth <sup>-</sup>	Го Fe	lton 8	k Alnv	vick				E	4		
	Fax +44 (0) 1283 554422						•						iniber			1		

	Units : mg/kg mg/kg mg/kg mg/kg mg/kg pH Units mg/kg mg/kg Method Codes : PAHMSUS PAHMSUS PAHMSUS PAHMSUS PAHMSUS PHSOIL SFAPI SFAPI						mg/kg	%	% TMSS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg				
	Method Reporti	na Limits :	0.08	0.08	0.08	0.08	1.28	FIISOIL	0.5	0.5	0.5	300002	0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos Screen & ID (Stage 1)	Tot. Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band ≻C8-C10
1917199	BH/17/01 ES 2 0.20		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.4	<0.5	0.5	<0.5	NAIIS	10.6	< 4.16	< 4.16	< 4.16	9.17	< 4.16
1917200	BH/17/02 ES 4 0.75		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8	<0.5	<0.5	<0.5	NAIIS	8.0	< 4.12	< 4.12	< 4.12	< 9.02	< 4.12
1917201	BH/17/13 ES 2 0.30		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8.2	<0.5	<0.5	<0.5	NAIIS	19.9	< 4.20	< 4.20	< 4.20	< 9.20	< 4.20
1917202	BH/17/14 ES 4 0.75		< 0.08	< 0.08	0.11	< 0.08	< 1.33	8.2	<0.5	<0.5	<0.5	NAIIS	15.0	< 4.20	< 4.20	< 4.20	< 9.20	< 4.20
	SOCOTEC 🤇		Client N	ame	SOCOT	EC UK E	Doncaste	r					Sam	ple Ana	lysis			
	Bretby Business Park, Ashby Road		Contaot			-						Date Pri	nted		14	L-Aug-2018		
	Burton-on-Trent Staffordshire DE15 0V7										_	Report N	lumbor			ES/189/07		
	Tal : 44 (0) 1292 554400		A80	)13-18	3 A1 Ir	າ Mor	peth	To Fe	Iton 8	& Alnv	vick		mbor		E	4		
	Ex +44 (0) 1283 554400						•						inder			1		
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Reporti	ng Limits :	20 Vos	4 Vec	4 Vec	4 Ves	8.75 Ves	4 Ves	20 Vos	0.02 Ves				
	UNAS A	ccreatieu .	163	163	163	103	163	103	103	163				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band ≻C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1917199	BH/17/01 ES 2 0.20		< 20.8	< 4.00	4.11	< 4.00	10.3	< 4.00	< 20.0	3.43				
1917200	BH/17/02 ES 4 0.75		< 20.6	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.72				
1917201	BH/17/13 ES 2 0.30		< 21.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.85				
1917202	BH/17/14 ES 4 0.75		< 21.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.03				
5			Client N Contact	ame	SOCOT	T <b>EC UK D</b>	oncaste	r				Sam	ple Analysis	
в	retby Business Park, Ashby Road											Date Printed	14-Aug-2018	
в	urton-on-Trent, Staffordshire. DE15 0YZ								•	<b>.</b> -	<b>.</b> -	Report Number	FFS/188497	
	Tel +44 (0) 1283 554400		A80	13-18	3 A1 Ir	ו Mor	peth	Го Fe	Iton 8	& Alnv	vick	Table Number	1	
	Fax +44 (0) 1283 554422												· · ·	

#### ASBESTOS ANALYSIS RESULTS



Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

				1089 SOCOTEC											
Client:			SOCOTEC	Environmenta	al Chemistry			•		Page 1 of 1					
Address:			Etwall Hous	e, Bretby Bus	iness Park, As	shby Road, Bur	on upon Trent			Report No:	ANO-0503-19072				
For the atten	tion of:		SOCOTEC	UK Doncaste	r					Report Date:	14/08/2018				
Site Address			A8013-18 A	1 In Morpeth	To Felton & A	Inwick				Project Number:	S188497				
Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content		Asbestos Fibre Types I	dentified			
CL/1917199		BH/17/01 0.20 Soils	13/08/2018	975.3	739.6			Identification			NAIIS				
CL/1917200		BH/17/02 0.75 Soils	14/08/2018	118         1398.3         1072.7         Identification         NAIIS											
CL/1917201		BH/17/13 0.30 Soils	13/08/2018	118         1053.1         1030.6         Identification         NAIIS											
CL/1917202		BH/17/14 0.75 Soils	13/08/2018	8 1242.6 1208.8 Identification NAIIS											
-															
Key	/5	NAACR = Not Analysed at Cli	ents Request			NAIIS = No As	bestos Identified in Sam	ple (Identification O	niy)	Name:	Tom Pratt	Authorised Signatory:			
		* visible to naked	еуе			NADIS = No A	Asbestos Detected in Sar	mple (ID & Quant Or	nly)	Position:	Lab Coordinator				
The sample anal Asbestos Limiteo assumed, unless	ysis for the abo d in house meth s specified, to b	ove results was carried out using the procedures nod of transmitted/polarised light microscopy and e amphiboles. All tests were carried out at a SO	detailed in SOC centre stop dis COTEC Asbest	OTEC Asbestos persion staining os Ltd laboratory	(SCI-ASB-007), I , UKAS Testing	e method (SCI-ASE based on HSE's H Number 1089. Re	8-020) based on EA doc SG 248. The analysis o commended sample we	ument Quantification f the < 10mm fraction eight is 1kg-2kg, sa	on of asbestos in soil and on for asbestos content mples less than 1kg are	d associated materials - only includes ACMs and classified as deviating	Draft 2017. Fibre identification w I fibres and does not discriminate samples.	as carried out using SOCOTEC non-asbestos fibres. All fibres are			

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S188497

Consignment No S76371 Customer SOCOTEC UK Doncaster Site A8013-18 A1 In Morpeth To Felton & Alnwick Date Logged 02-Aug-2018 S188497 **Report No** In-House Report Due 09-Aug-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL			KONECR	PAHMSUS	PHSOIL	
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)	
			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		1	✓	1	✓		✓	$\checkmark$	
CL/1917199	BH/17/01 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1917200	BH/17/02 0.75	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1917201	BH/17/13 0.30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1917202	BH/17/14 0.75	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	

Note: We will endeavour to prioritise samples to complete analysis within	Devia	ating Sample Key
holding time; however any delay could result in samples becoming	A	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Requ	ested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Doncaster	Consignment No S76371
Site	A8013-18 A1 In Morpeth To Felton & Alnwick	Date Logged 02-Aug-201
Report No	S188497	In-House Report Due 09-

gged 02-Aug-2018

e Report Due 09-Aug-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI			Sub002	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos Screen & ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$\checkmark$
CL/1917199	BH/17/01 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1917200	BH/17/02 0.75	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1917201	BH/17/13 0.30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1917202	BH/17/14 0.75	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within	De	viating Sample Key
holding time; however any delay could result in samples becoming	А	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Re	quested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 9 of 12The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/188497 Ver. 1

Report Number : EFS/188497

# **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	CL1917199 TO CL1917202	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation from the affected analytes (MTBE). These circumstances should be taken into consideration when utilising the data"

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

# **Generic Notes**

### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

## Waters Analysis

Unless stated otherwise results are expressed as mg/l NiI: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

# Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

# Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S18_8497

#### Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1917199	BH/17/01 ES 2 0.20	Brown SILT
CL/1917200	BH/17/02 ES 4 0.75	Brown Stone SILT
CL/1917201	BH/17/13 ES 2 0.30	Brown Stone SILT
CL/1917202	BH/17/14 ES 4 0.75	Brown Sand SILT

# **TEST REPORT**



# Report No. EFS/189114 (Ver. 2)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

### Site: A8013-18 A1 Alnwick To Ellingham

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 20-Aug-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 30-Aug-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is
displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Additional Report Notes (Page 11)
Table of Method Descriptions (Page 12)
Table of Report Notes (Page 13)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Li Tim Barnes

Operations Director Energy & Waste Services Date of Issue: 30-Aug-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

LABI	Method Reportin UKAS A	ng Limits : ccredited :	10 Yes	10 Yes	20	20	10	10	20	0/120_0110	GROHON	Chorion			enterne/ t	0110110/1	011011011	011011071
LABI	UKAS A	ccredited :	Yes	Yes			10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
LABI				100	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
É         Client Sample Description         Sample Description         Sample Description         Finyl Benzene         MTBR         Vene         Finyl Benzene         Vene         Vene         Set         Chronnium (III)         Set         GRO         CC         GRO         CC         Set         Set <th>Toluene</th> <th>Xylenes</th> <th>Chromium (III)</th> <th>GRO</th> <th>GRO (&gt;C5 - C6)</th> <th>GRO (&gt;C7 - C8)</th> <th>GRO (≻C8 - C10)</th> <th>GRO (C5-C6 Aliphatic)</th> <th>GRO (C6-C7 Aliphatic)</th> <th>GRO (C6-C7)</th> <th>GRO (C7-C8 Aliphatic)</th>								Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1919333	TP/17/05 ES 1 0.10		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<25.7	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919334	TP/17/10 ES 1 0.20		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<28.8	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919335	TP/17/35 ES 2 0.80		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<32.4	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919336	TP/17/48 ES 1 0.20		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<19.9	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
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S			Client N Contact	ame	SOCOT Neil Cook	e CUKD	oncaste	r					Sam	ple Ana	lysis			
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	Metho	Units : od Codes :	mg/kg GROHSA	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reportin	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1919333	TP/17/05 ES 1 0.10		< 0.200	404	1.3	1.4	361.9	0.21	25.7	14.8	28.7	629.8	0.12	0.6	19.1	<0.5	31.8	60.6
1919334	TP/17/10 ES 1 0.20		< 0.200	408	1.1	0.4	6	0.19	28.8	13.4	21.9	638.1	<0.1	0.6	20.8	<0.5	39.3	50.9
1919335	TP/17/35 ES 2 0.80		< 0.200	346	0.7	0.7	11.9	0.43	32.4	31	22.1	2572	<0.1	1.3	41.6	0.7	58.4	73
1919336	TP/17/48 ES 1 0.20	I.	< 0.200	959	1.3	1.2	9.2	0.24	19.9	21	19.5	639.5	<0.1	0.5	20.5	<0.5	68.4	62.6
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	Fax +44 (0) 1283 554422												1					

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Method Reportin	d Codes :			ICPSOIL 36	KONECR	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
	UKAS Ac	credited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1919333	TP/17/05 ES 1 0.10		96.5	0.66	24800	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1919334	TP/17/10 ES 1 0.20		122	0.806	30800	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1919335	TP/17/35 ES 2 0.80		196	1.01	72700	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1919336	TP/17/48 ES 1 0.20		159	0.541	30500	<0.1	< 0.08	< 0.08	0.34	1.43	1.52	1.81	0.89	0.62	1.00	0.30	2.20	0.09
	Image: Source of the second																	
			Client N Contact	ame	SOCO Neil Cool	r <b>ec uk e</b>	Doncaste	r					Sam	ple Ana	alysis			
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	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method	od Codes :	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PHSOIL	SFAPI	SFAPI	SFAPI	Sub020	TMSS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
		ng Limits :	0.08 Yes	0.08 Ves	0.08 Ves	0.08 Ves	1.28 Ves	Ves	U.5 Ves	U.5 Ves	U.5 Ves	Ves	U.1 Ves	4 Ves	4 Ves	4 Ves	8.75 Ves	4 Ves
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1919333	TP/17/05 ES 1 0.10		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.9	<0.5	<0.5	<0.5	NADIS	13.3	< 4.12	< 4.12	< 4.12	< 9.02*	< 4.12
1919334	TP/17/10 ES 1 0.20		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.6	<0.5	<0.5	<0.5	NADIS	13.3	< 4.16	< 4.16	< 4.16	< 9.11*	< 4.16
1919335	TP/17/35 ES 2 0.80		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8.1	<0.5	<0.5	<0.5	NADIS	13.6	< 4.20	< 4.20	< 4.20	< 9.20*	< 4.20
1919336	TP/17/48 ES 1 0.20		1.08	< 0.08	0.73	1.78	< 14.0	8.3	<0.5	<0.5	<0.5	NADIS	14.1	< 4.16	< 4.16	< 4.16	33.8*	< 4.16
			Client N Contact	ame	SOCOT	TEC UK D	oncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422			A80	13-18	A1 A	Inwic	k To I	Elling	ham		Date Printed30-Aug-2018Report NumberEFS/189114Table Number1						

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Metho Method Demorti	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				-
	UKAS A	ccredited :	Yes	4 Yes	4 Yes	4 Yes	8.75 Yes	4 Yes	Yes	U.U2 Yes				
		oorountou :	100	100	100	100	100	100	100	100				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1919333	TP/17/05 FS 1 0 10	<u> </u>	< 20.6	< 4.00	4.38	< 4.00	< 8.76	< 4.00	< 20.0	1 24				
1919334	TP/17/10 ES 1 0.20		< 20.8	< 4.00	< 4.00	< 4.00	8.76	< 4.00	< 20.0	1.61				
1919335	TP/17/35 ES 2 0.80		< 21.0	< 4.00	4.17	< 4.00	9.00	< 4.00	< 20.0	0.84				
1919336	TP/17/48 ES 1 0.20		48.5	< 4.00	4.11	6.45	82.4	< 4.00	115	1.89				
			-											
			-											
			-											
								<u> </u>	<u> </u>				1	
S			Client N Contact	ame	SOCOT	F <b>EC UK D</b>	oncaste	r			Sam	ple Analysis		
Br	etby Business Park, Ashby Road		oomaat								Date Printed	30-Aug-2018		
Bi	urton-on-Trent, Staffordshire, DE15.0YZ									_	Report Number	FFS/189114		
т	Tel +44 (0) 1283 554400					A1 A	Inwic	k To F	Elling	ham		1		
F	-ax +44 (0) 1283 554422								-					



**CERTIFICATE OF ANALYSIS** 

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd Environmental Chemistry PO Box 100 Burton upon Trent Staffordshire DE15 0XD CONTRACT NO: S00604-15 DATE OF ISSUE: 28.08.18

DATE SAMPLES RECEIVED: 22.08.18

DATE SAMPLES ANALYSED: 27.08.18

SAMPLE DESCRIPTION: Four soil/loose aggregate samples.

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of entire samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

# **RESULTS:**

#### **Initial Screening**

www.iom-world.org

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

### Page 1 of 2



Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S00604-15 DATE OF ISSUE: 28.08.18

**RESULTS: (cont.)** 

Table 1: Qualitative Results

SOCOTEC Job I.D: S189114

IOM sample number	Client sample number	ACM type detected	PLM result
S59976	S1919333 TP/17/05 0.10	-	No Asbestos Detected
S59977	S1919334 TP/17/10 0.20	-	No Asbestos Detected
S59978	S1919335 TP/17/35 0.80	-	No Asbestos Detected
S59979	S1919336 TP/17/48 0.20		No Asbestos Detected

Our detection limit for this method is 0.001%.

# COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



AUTHORISED BY:

D Third Scientific Technician

# **SOCOTEC UK Ltd Environmental Chemistry** Analytical and Deviating Sample Overview

					IIai	yuc		anu		, v 1 a	uni	y U	am	pic													
Customer	SOCOTEC UK Doncaste	r					Cons	ignm	ent N	o S76	690																
Site	A8013-18 A1 Alnwick To	Ellingham					Date	Logg	ed 20	)-Aug	-2018	3															
Report No	S189114						In-Ho	ouse l	Repoi	rt Due	28-A	ug-20	018														
Please note the rea	sults for any subcontracted analy	sis (identified	with a	a '^') is	s likely	y to ta	ke up	to ar	n addi	tional	five v	workir	ng dag	ys.													
		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL			KONECR	PAHMSUS	PHSOIL
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)
			✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
CL/1919333	TP/17/05 0.10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919334	TP/17/10 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919335	TP/17/35 0.80	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919336	I P/17/48 0.20	ט	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 9 of 13The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/189114 Ver. 2

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

Customer	SOCOTEC UK Doncast	ter					Cons	signm	ent N	o S76	690										
Site	A8013-18 A1 Alnwick T	o Ellingham	1				Date	Logg	ed 20	)-Aug	-2018	3									
Report No	S189114						In-Ho	ouse l	Repo	rt Due	e 28-A	ug-2	018								
Please note the re	sults for any subcontracted ana	alysis (identified	l with a	a '^') is	s likel	y to ta	ike up	to ar	n addi	itional	five	worki	ng da	ys.							
		MethodID	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓
CL/1919333	TP/17/05 0.10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919334	TP/17/10 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919335	TP/17/35 0.80	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
CL/1919336	TP/17/48 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within	De	viating Sample Key
holding time; however any delay could result in samples becoming	А	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Re	quested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

Report Number : EFS/189114

# **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
TPHUSSI	CL1919333 TO CL1919336	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Banding C21-C35) on the aliphatic fraction . These circumstances should be taken into consideration when utilising the data.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

# **Generic Notes**

### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

## Waters Analysis

Unless stated otherwise results are expressed as mg/l **Nil**: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

# Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

# Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick To Ellingham
Damant Number	610 0114

Report Number :

S18\_9114

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1919333	TP/17/05 ES 1 0 10	Brown Clay SILT
CL/1010334	TP/17/10 ES 1 0 20	Brown Stope SILT
CL/1010335	TP/17/35 ES 2 0 80	Brown Stone SILT
CL/1919333	TD/17/49 ES 1 0 20	
CL/1919336	1P/17/40 ES 1 0.20	

# **TEST REPORT**



# Report No. EFS/189115 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 20-Aug-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 31-Aug-2018

The analysis was completed by: 51-Aug-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Additional Report Notes (Page 11)
Table of Method Descriptions (Page 12)
Table of Report Notes (Page 13)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Tim Barnes Operations Director Energy & Waste Services

Date of Issue: 31-Aug-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Matha	Units :	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reportin	a Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS Ac	credited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1919337	TP/17/03 ES 2 1.20	18-Jul-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<25.8	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919338	TP/17/04 ES 1 0.10	18-Jul-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<26.1	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
			Client N Contact	ame	SOCO Neil Cook	<b>FEC UK E</b>	)oncaste	r	1	1	1		Sam	ple Ana	alysis			1
	Bretby Business Park, Ashby Road											Date Prin	nted		31	-Aug-2018	1	
	Burton-on-Trent, Staffordshire, DE15 0YZ											Report N	lumber		El	S/189115	1	
	Tel +44 (0) 1283 554400		A80	13-18	3 A1 li	n Mor	peth <sup>-</sup>	To Fe	Iton 8	k Alnv	vick		mber			1	-	
	Fax +44 (0) 1283 554422						-											

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1919337	TP/17/03 ES 2 1.20	18-Jul-18	< 0.200	129	0.7	0.2	3.7	0.14	25.8	19.1	9.8	309.5	<0.1	<0.5	26.8	<0.5	24.7	43.2
1919338	TP/17/04 ES 1 0.10	18-Jul-18	< 0.200	661	1.4	0.6	6.9	0.31	26.1	16.6	21.1	814.1	<0.1	0.6	19.9	<0.5	34.1	58.2
			Client N	ame	SOCO	FEC UK E	oncaste	r					Sam	ple Ana	alysis			
	_		Contact	:	Neil Cool	ke								1				
	Bretby Business Park, Ashby Road											Date Pri	nted		31	-Aug-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		780	12_19	λ Δ1 II	n Mor	noth <sup>-</sup>		lton &	. ΔInv	vick	Report N	lumber		E	FS/189115		
	Tel +44 (0) 1283 554400			10-10			hem				VICK	Table Nu	umber			1		
	Fax +44 (0) 1283 554422																	

	Math	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Report	ing Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1919337	TP/17/03 ES 2 1.20	18-Jul-18	125	0.807	26400	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	0.08	0.11	0.13	< 0.08	< 0.08	0.12	< 0.08	< 0.08
1919338	TP/17/04 ES 1 0.10	18-Jul-18	166	0.755	26700	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
			Client N	lame	SOCO		Doncaste	r					Sam	ple Ana	alysis			
	Prothy Pupinggo Dark Arthur Daard		Contact									Data D-	atad	r		Aug 2040		
	During on Treat Clafford Line DE15 01/7															-Aug-2018		
	Burton-on-Trent, Stattordsnire, DE15 0YZ		A80	)13-18	3 A1 li	n Mor	peth <sup>-</sup>	Го Fe	Iton 8	k Alnv	vick	Report	umper		E	-5/189115		
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	Fax +44 (0) 1283 554422																	

	Meth	Units : od Codes :	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	pH Units PHSOIL	mg/kg SFAPI	mg/kg SFAPI	mg/kg SFAPI	Sub020	% TMSS	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI
	Method Reporti	ng Limits :	0.08	0.08	0.08	0.08	1.28		0.5	0.5	0.5		0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1919337	TP/17/03 ES 2 1.20	18-Jul-18	0.13	< 0.08	< 0.08	< 0.08	< 1.45	8.5	<0.5	<0.5	<0.5	NADIS	13.0	< 4.20	< 4.20	< 4.20	< 9.20*	< 4.20
1919338	TP/17/04 ES 1 0.10	18-Jul-18	0.09	< 0.08	< 0.08	< 0.08	< 1.29	7.5	<0.5	<0.5	<0.5	NADIS	17.9	< 4.16	< 4.16	< 4.16	< 9.11*	< 4.16
			Client N	lame	SOCOT		Doncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		A80	)13-18	B A1 II	n Mor	peth <sup>-</sup>	To Fe	lton 8	k Alnv	vick	Date Prin Report N Table Nu	nted lumber ımber		31 E	-Aug-2018 FS/189115 1		

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M					
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59					
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02					
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band ≻C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon					
1919337	TP/17/03 ES 2 1.20	18-Jul-18	< 21.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.87					
1919338	TP/17/04 ES 1 0.10	18-Jul-18	< 20.8	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.64					
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5		1	Client N Contact	ame	SOCOT	T <b>EC UK D</b>	)oncaste	r	1	1	1	Sam	ple Analysis		
В	retby Business Park, Ashby Road		<u> </u>		•							Date Printed	31-Aug-2018	l	
В	urton-on-Trent, Staffordshire, DE15 0YZ			40.40	I-			T	14	<b>.</b>		Report Number	EFS/189115		
· ·	Tel +44 (0) 1283 554400			13-18	5 A1 II	n ivior	petn	10 Fe	iton a		VICK	Table Number	1		
	Fax +44 (0) 1283 554422														



# CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd **Environmental Chemistry PO Box 100** Burton upon Trent Staffordshire

CONTRACT NO: \$00604-16 DATE OF ISSUE: 28.08.18

DATE SAMPLES RECEIVED: 22.08.18

DATE SAMPLES ANALYSED: 27.08.18

SAMPLE DESCRIPTION: Two soil/loose aggregate samples.

**DE15 0XD** 

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of entire samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

### **RESULTS:**

#### **Initial Screening**

www.iom-world.org

No asbestos was detected in either of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

# Page 1 of 2



Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org



CONTRACT NO: \$00604-16 DATE OF ISSUE: 28.08.18

**RESULTS: (cont.)** 

# Table 1: Qualitative Results

SOCOTEC Job I.D: S189115

IOM sample number	Client sample number	ACM type detected	PLM result
S59980	S1919337 TP/17/03 1.20		No Asbestos Detected
S59981	S1919338 TP/17/04 0.10	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

## COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



AUTHORISED

D Third Scientific Technician

# **SOCOTEC UK Ltd Environmental Chemistry** Analytical and Doviating Sample Overview

S189115

PHSOIL

pH units (AR)

√ Ε Ε

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Customer	SOCOTEC UK Doncast	ter					Con	signm	ent N	lo S7	6588															
Site	A8013-18 A1 In Morpet	h To Felton	& Alı	nwio	:k		Date	Logo	ged 20	0-Aug	-2018	3														
Report No	S189115						In-H	ouse	Repo	rt Due	e 28-A	ug-2	018													
Please note the re	esults for any subcontracted ana	alysis (identified	with a	a '^') i	s likel	y to ta	ake up	o to a	n add	itiona	l five	worki	ng da	ys.												
		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL			KONECR	PAHMSUS
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS
		1	✓			✓	✓	✓	✓	<b>√</b>	✓	✓	✓	✓	✓	✓	<b>√</b>	✓	✓		✓	✓	<b>√</b>	✓		✓
CL/1919337	TP/17/03 1.20	18/07/18	Е			E		Ε																		Ε
CL/1919338	TP/17/04 0.10	18/07/18	E			E		E																		E

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Doncaster	Consignment No S76588
Site	A8013-18 A1 In Morpeth To Felton & Alnwick	Date Logged 20-Aug-2018
Report No	S189115	In-House Report Due 28-Au

e Report Due 28-Aug-2018 Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL/1919337	TP/17/03 1.20	18/07/18	E	E	E		Е	E	E	E	Е	Ε	Е	E	E	E	E	E	E	E	Е
CL/1919338	TP/17/04 0.10	18/07/18	E	E	E		E	E	E	E	Ε	Ε	Ε	E	E	E	E	E	E	E	Ε

Note: We will endeavour to prioritise samples to complete analysis within	eviating Sample Key	
holding time; however any delay could result in samples becoming	The sample was received in an inappropriate container for this analysis	
deviant whilst being processed in the laboratory.	The sample was received without the correct preservation for this analysis	
	Headspace present in the sample container	
If sampling dates are missing or matrices unclassified then results will	The sampling date was not supplied so holding time may be compromised - applicable to all analysis	
not be ISO 17025 accredited. Please contact us as soon as possible to	Sample processing did not commence within the appropriate holding time	
provide missing information in order to reinstate accreditation.	Sample processing did not commence within the appropriate handling time	
	Requested Analysis Key	
	Analysis Required	
	Analysis dependant upon trigger result - Note: due date may be affected if triggered	
	No analysis scheduled	
	Analysis Subcontracted - Note: due date may vary	

Where individual results are flagged see report notes for status. Page 10 of 13 he integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/189115 Ver. 1

Report Number : EFS/189115

# **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
TPHUSSI	CL1919337 TO CL1919338	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (Banding C21-C35 on the Aliphatic fraction). These circumstances should be taken into consideration when utilising the data.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description				
Soil	BTEXHSA	As Received	J Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID				
Soil	CALC_CR3	Oven Dried @ < 35°C	Calculated from the difference between Total Chromium and Hexavalent Chromium				
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID				
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection				
Soil	ICPBOR	Oven Dried @ < 35°C	Determination of Boron in soil samples by hot water extraction followed by ICPOES detection				
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection				
Soil	ICPSOIL	Oven Dried @ < 35°C	Determination of Metals in soil samples by aqua regia digestion followed by ICPOES detection				
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection				
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection				
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.				
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection				
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub- contractor.				
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on oven drying gravimetric analysis (% based upon wet weight)				
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.				
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection				
#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table. All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l NiI: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Dement Normalian -	C10 011E

Report Number :

S18\_9115

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1919337	TP/17/03 FS 2 1 20	Brown SII T
CL/1919338	TP/17/04 FS 1 0 10	Brown Stone SILT
	11,11,04 20 1 0.10	

# **TEST REPORT**



# Report No. EFS/189116 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 20-Aug-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 31-Aug-2018

The analysis was completed by: 51-Aug-2010

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is
displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Tim Barnes



Date of Issue: 31-Aug-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Metho	Units :	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reportin	ng Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1919339	BH/17/08 ES 1 0.10		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<31.4	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919340	BH/17/09 ES 1 0.20	25-Jul-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<25.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1919341	BH/17/11 ES 1 0.20		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<23.2	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
			Client N Contact	ame	SOCOT Neil Cook	EC UK D	oncaste	r					Sam	ple Ana	llysis			
	Bretby Business Park, Ashby Road				-							Date Prin	nted		31	I-Aug-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		<b>78</b> 0	13_19	ε Δ1 Ir	n Mor	noth <sup>-</sup>		lton &		vick	Report N	lumber		E	FS/189116		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		700	15-10			hem	1016				Table Nu	ımber			1		

	Metho	Units : od Codes :	mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1919339	BH/17/08 ES 1 0.10	1	< 0.200	628	1.3	0.9	13.4	0.54	31.4	26.9	34.3	2172	0.12	1.2	32.8	0.6	57.3	81.2
1919340	BH/17/09 ES 1 0.20	25-Jul-18	< 0.200	528	1	0.6	9.8	0.39	25.6	23.5	26.9	2173	<0.1	1.1	26.6	<0.5	50.5	84.6
1919341	BH/17/11 ES 1 0.20		< 0.200	409	0.7	0.6	9.5	0.32	23.2	26	20.5	1975	<0.1	1	29.4	<0.5	36.3	57.5
			Client N	ame	SOCOT	FEC UK D	oncaste	r					Sam	ple Ana	alysis			
			Contact		Neil Cook	(e												
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	Tel +44 (0) 1283 554400									- / \		Table Nu	umber			1		
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Metho	od Codes :	ICPSOIL	ICPSOIL	ICPSOIL	KONECR	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
	Method Reportin	ng Limits :	0.5	0.1	36	0.1	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1919339	BH/17/08 ES 1 0.10		155	0.89	50600	<0.1	< 0.08	< 0.08	< 0.08	0.16	0.14	0.19	< 0.08	< 0.08	0.11	< 0.08	0.25	< 0.08
1919340	BH/17/09 ES 1 0.20	25-Jul-18	167	0.898	54900	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.08	< 0.08
1919341	BH/17/11 ES 1 0.20		111	0.78	49700	<0.1	< 0.08	< 0.08	< 0.08	0.17	0.16	0.20	0.08	< 0.08	0.12	< 0.08	0.27	< 0.08
	SOCOTEC		Client N	ame	SOCO Neil Cool	Г <b>ЕС UK [</b> «е	Doncaste	r					Sam	ple Ana	alysis			
1	Bretby Business Park, Ashby Road											Date Pri	nted		31	-Aug-2018		
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	Fax +44 (0) 1283 554422						-									•		

	Meth	Units : od Codes :	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg	pH Units PHSOII	mg/kg SFAPI	mg/kg SEAPI	mg/kg SEAPI	Sub020	% TMSS	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI
	Method Reporti	ng Limits :	0.08	0.08	0.08	0.08	1.28		0.5	0.5	0.5	Cubozo	0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band ≻C8-C10
1919339	BH/17/08 ES 1 0.10		0.10	< 0.08	0.11	0.19	< 1.89	7.5	<0.5	<0.5	<0.5	NADIS	9.2	< 4.06	< 4.06	< 4.06	< 8.89	< 4.06
1919340	BH/17/09 ES 1 0.20	25-Jul-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.3	<0.5	<0.5	<0.5	NADIS	15.2	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00
1919341	BH/17/11 ES 1 0.20		0.10	< 0.08	0.11	0.21	< 1.98	7.8	<0.5	<0.5	<0.5	NADIS	10.0	< 4.04	< 4.04	< 4.04	< 8.85	< 4.04
	SOCOTEC         Client Name         SOCOTEC UK Doncaster           Contact         Neil Cooke												Sam	ple Ana	lysis			
			Contact		INEII COOK	e								1				
	Bretby Business Park, Ashby Road											Date Pri	nted		31	I-Aug-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		<b>A80</b>	13-18	R Δ1 Ir	n Mor	neth <sup>-</sup>	To Fe	Iton 8	λ Δlnv	vick	Report N	lumber		E	FS/189116		
	Tel +44 (0) 1283 554400			10-10			Petti					Table Nu	ımber			1		
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M					
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59					
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02					
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				ļ'	
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon					
1919339	BH/17/08 ES 1 0.10		< 20.3	< 4.00	< 4.00	< 4.00	23.3	< 4.00	30.4	2.48					
1919340	BH/17/09 ES 1 0.20	25-Jul-18	< 20.0	< 4.00	< 4.00	< 4.00	20.7	< 4.00	26.1	1.97					
1919341	BH/17/11 ES 1 0.20		< 20.2	< 4.00	< 4.00	< 4.00	28.4	< 4.00	42.7	1.27					
					<u> </u>										
S		Client Name SOCOTEC UK Doncaster Contact Neil Cooke										Sam	ple Analysis		
в	Bretby Business Park, Ashby Road				4							Date Printed	31-Aug-2018		
В	surton-on-Trent, Staffordshire, DE15 0YZ		1 4 0 6	40.40	<b>.</b>			T. <b>F</b> .	14 6			Report Number	EFS/189116		
	Tel +44 (0) 1283 554400			13-18	5 A1 II	n ivior	peth	10 Fe	iton e		VICK	Table Number	1	ł	
	Fax +44 (0) 1283 554422														



### CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd Environmental Chemistry PO Box 100 Burton upon Trent Staffordshire

CONTRACT NO: S00604-17 DATE OF ISSUE: 28.08.18

DATE SAMPLES RECEIVED: 22.08.18

DATE SAMPLES ANALYSED: 27.08.18

SAMPLE DESCRIPTION: Three soil/loose aggregate samples.

**DE15 0XD** 

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of entire samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### RESULTS:

#### Initial Screening

www.iom-world.org

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

#### Page 1 of 2



 Registered Address:
 Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom

 Tel:
 0131 449 8000
 Fax:
 0131 449 8084
 Email:
 iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S00604-17 DATE OF ISSUE: 28.08.18

**RESULTS:** (cont.)

#### Table 1: Qualitative Results

SOCOTEC Job I.D: S189116

IOM sample number	Client sample number	ACM type detected	PLM result
S59982	S1919339 BH/17/08 0.10	-	No Asbestos Detected
S59983	S1919340 BH/17/09 0.20	24 <u>8</u>	No Asbestos Detected
S59984	S1919341 BH/17/11 0.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



D Third Scientific Technician

AUTHORISED BY: .....

# **Sample Analysis**

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Doncaster
Site	A8013-18 A1 In Morpeth To Felton & Alnwick
Report No	S189116

Consignment No S76857

Date Logged 20-Aug-2018

In-House Report Due 28-Aug-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS	-	-	-		-	_	-			_	-	-	ICPSOIL	-	_	KONECR	PAHMSUS	PHSOIL
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)
			<ul><li>✓</li></ul>			✓	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓	✓	4	✓	✓	✓		✓	~	✓	✓		~	_ ✓ _
CL/1919339	BH/17/08 0.10					Α																				Α	
CL/1919340	BH/17/09 0.20	25/07/18	Ε			E		E																		Е	Е
CL/1919341	BH/17/11 0.20																										

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

The sample was received in an inappropriate container for this analysis А

в The sample was received without the correct preservation for this analysis

- С Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
- Е Sample processing did not commence within the appropriate holding time
- Sample processing did not commence within the appropriate handling time

#### Requested Analysis Key

Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered

No analysis scheduled

Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 9 of 12The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/189116 Ver. 1

## Sample Analysis

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

											<b>-</b>			-	
SOCOTEC UK Doncaste	∋r					Cons	signm	ent N	lo S76	6857					
A8013-18 A1 In Morpeth	To Felton 8	& Alr	nwic	k		Date	Logo	ged 20	)-Aug	-2018	3				
S189116						In-He	ouse	Repo	rt Due	e 28-A	ug-20	018			
esults for any subcontracted analy	ysis (identified	with a	a '^') is	s likel	y to ta	ake up	o to ai	n addi	itional	l five	workir	ng dag	ys.		
	MethodID	SFAPI			Sub020	TMSS	TPHUSSI								
															Ī
		Cyanide	Cyanide(	Phenol I	^Asbestos	Tot.Moist	TPH Ali Ba	TPH Ali Ba	TPH Ali Ba	TPH Ali Ba	TPH Ali Ba	TPH Ali Ba	TPH Aro Ba	TPH Aro Ba	
	SOCOTEC UK Doncaste A8013-18 A1 In Morpeth S189116 esults for any subcontracted analy	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & S189116 esults for any subcontracted analysis (identified MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alr S189116 esults for any subcontracted analysis (identified with a MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwic S189116 esults for any subcontracted analysis (identified with a '^') is MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 esults for any subcontracted analysis (identified with a '^') is likel MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 esults for any subcontracted analysis (identified with a '^') is likely to ta MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 esults for any subcontracted analysis (identified with a '^) is likely to take up MethodID YFT SUB Cyanide Cyanide of the store of the s	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 esults for any subcontracted analysis (identified with a '^) is likely to take up to an MethodID $\frac{V}{P}$ $\frac{V}{V}$ $$	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 esults for any subcontracted analysis (identified with a '^) is likely to take up to an add MethodID	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116       Consignment No S76 Date Logged 20-Aug In-House Report Due esults for any subcontracted analysis (identified with a '^') is likely to take up to an additional         MethodID       YF       YF	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116       Consignment No S76857         Date Logged 20-Aug-2018       In-House Report Due 28-A         esults for any subcontracted analysis (identified with a '^') is likely to take up to an additional five       In-House Report Due 28-A         MethodID       YF       YF         V       YF       YF         V       C Yannide       TOt.Moist         V       C Yannide       YF         V       YF       YF	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116 Esults for any subcontracted analysis (identified with a '^) is likely to take up to an additional five workin MethodID $\[ Spin] \\ \[ Spin] \ \[ Spin] \\ \[ Spin] \\ \[ Spin] \ \[ Spin] \\ \[ Spin] \ \$	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116       Consignment No S76857 Date Logged 20-Aug-2018 In-House Report Due 28-Aug-2018         esults for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working day       In-House Report Due 28-Aug-2018         MethodID       YF       YF         V       YF	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116       Consignment No S76857         Date Logged 20-Aug-2018       Date Logged 20-Aug-2018         In-House Report Due 28-Aug-2018       In-House Report Due 28-Aug-2018         esults for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.         MethodID       Y	SOCOTEC UK Doncaster A8013-18 A1 In Morpeth To Felton & Alnwick S189116       Consignment No S76857 Date Logged 20-Aug-2018 In-House Report Due 28-Aug-2018         esults for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.       MethodID       Yest       TPH AII       TPH AII       TPH AII       TPH AII       Ba       Ba <t< td=""></t<>

ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			<ul><li>✓</li></ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓
CL/1919339	BH/17/08 0.10							Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	
CL/1919340	BH/17/09 0.20	25/07/18	Ε	Е	Е		E	E	Е	E	E	E	E	E	E	E	E	E	E	E	E
CL/1919341	BH/17/11 0.20																				

Note: We will endeavour to prioritise samples to complete analysis within	[ [	Deviat	ing Sample Key
holding time; however any delay could result in samples becoming	F	۲ ۱	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	E	3 Т	The sample was received without the correct preservation for this analysis
	C	) F	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	Г (Г	) Т	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	5	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	: 5	Sample processing did not commence within the appropriate handling time
	i F	Reque	ested Analysis Key
	ı 🔽	A	Analysis Required
	ı 🔽	A	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	ı Г	١	No analysis scheduled
	^	A	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 10 of 12<sup>the</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/189116 Ver. 1

WSLM59

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried @ < 35°C	Calculated from the difference between Total Chromium and Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried @ < 35°C	Determination of Boron in soil samples by hot water extraction followed by ICPOES detection
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried @ < 35°C	Determination of Metals in soil samples by aqua regia digestion followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub- contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S18_9116

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1919339	BH/17/08 ES 1 0.10	Brown Stone SILT
CL/1919340	BH/17/09 ES 1 0.20	Brown Stone SILT
CL/1919341	BH/17/11 ES 1 0.20	Brown Stone SILT

# **TEST REPORT**



#### Report No. EFS/190987M (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 4 samples described in this report were registered for analysis by SOCOTEC UK Limited on 08-Oct-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 19-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK L Becky Batham

UK L

Operations Manager Energy & Waste Services Date of Issue: 19-Oct-2018

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Meth	Units :	μg/kg ΒΤΕΧΗSΔ	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	μg/kg ΒΤΕΧΗSΔ	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Report	ing Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Accredita	ation Code:	UM	UM	UM	U	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1925851	TP/17/33 ES 2 0.30	20-Sep-18	<11.5	<11.5	<22.9	<22.9	<11.5	<11.5	<34.4	<29.7	<0.229	<0.229	<0.229	<0.229	<0.229	<0.229	<0.229	<0.229
1925852	TP/17/36 ES 4 0.50	21-Sep-18	<11.7	<11.7	<23.4	<23.4	<11.7	<11.7	<35.2	<26.7	<0.234	<0.234	<0.234	<0.234	<0.234	<0.234	<0.234	<0.234
1925853	TP/17/40 ES 3 0.50	13-Sep-18	<11.6	<11.6	<23.2	<23.2	<11.6	<11.6	<34.8	12.7	<0.232	<0.232	<0.232	<0.232	<0.232	<0.232	<0.232	<0.232
1925854	TP/17/41 ES 1 0.10		<12.0	<12.0	<24.1	<24.1	<12.0	<12.0	<36.1	<24.6	<0.241	<0.241	<0.241	<0.241	<0.241	<0.241	<0.241	<0.241
	SOCOTEC	Client Name SOCOTEC UK Doncaster																
	Brothy Business Park Ashby Poad	ntact Neil Cooke								Data Brit	ated	r	4	0-Oct-2019				
	Burton-on-Trent, Staffordshire, DE15.0YZ								_	Report N	lumbor		FC					
	Tel +44 (0) 1283 554400		🔰 🛛 A8013-18 A1 In Morpeth To Felton & Alnwick 🕂						K Report Number EFS/				2, 130307 M					
	Fax +44 (0) 1283 554422																	

	Metho	Units : od Codes :	mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.2	1.2	1.6	0.7	6	0.5	0.5	2	0.5	0.6	16
	Accredita	tion Code:	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	UM
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1925851	TP/17/33 ES 2 0.30	20-Sep-18	<0.229	416	1.2	0.9	10.3	0.39	29.7	24.6	27.8	1640	<0.5	1	27.0	<0.5	44.9	68.7
1925852	TP/17/36 ES 4 0.50	21-Sep-18	<0.234	275	1.3	0.2	5.8	<0.21	26.7	20.9	17.4	1620	<0.5	0.8	21.1	<0.5	34.8	60.2
1925853	TP/17/40 ES 3 0.50	13-Sep-18	<0.232	63	0.8	<0.1	3.8	<0.2	12.9	15.8	10.0	88.2	<0.5	<0.5	11.7	<0.5	16.8	34.9
1925854	TP/17/41 ES 1 0.10		<0.241	501	1.5	0.5	9.1	<0.21	24.6	21.2	23	686.4	<0.5	0.6	15.8	<0.5	36	58.9
	Image: state of the state																	
			Client N Contact	ame	SOCOT	EC UK E	oncaste	r					Sam	ple Ana	lysis			
	Bretby Business Park, Ashby Road											Date Prin	nted		1	9-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		Access 40 Ad in Manually Ta Fallon 8 Almusials							Report Number EFS/190987W								
	Tel +44 (0) 1283 554400		A80	13-18	6 A1 Ir	n wor	petn	10 Fe	iton ð		VICK	Table Nu	Imber			1		
	Fax +44 (0) 1283 554422																	

	Moth	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	na Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	Accredita	tion Code:	UM	UM	UM	N	UM	U	U	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1925851	TP/17/33 ES 2 0.30	20-Sep-18	113	0.826	50300	<0.1	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
1925852	TP/17/36 ES 4 0.50	21-Sep-18	101.3	0.660	40900	<0.1	<0.09	<0.09	<0.09	<0.09	<0.09	0.11	<0.09	<0.09	0.09	<0.09	0.16	<0.09
1925853	TP/17/40 ES 3 0.50	13-Sep-18	69.7	0.457	16300	0.2	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
1925854	TP/17/41 ES 1 0.10		65.6	0.57	26900	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
			Client N Contact	ame	Neil Cook		oncaste	r					Sam	pie Ana	IYSIS			
	Bretby Business Park, Ashby Road											Date Prin	nted		1	9-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		A0042 40 Ad In Marnath To Falton & Alawiak						Report Number EFS/190987									
	Tel +44 (0) 1283 554400		A8013-18 A1 IN WORPETN TO FEITON & AINWICK							1								
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Metho	od Codes :	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PHSOIL	SFAPI	SFAPI	SFAPI	Sub020	TMSS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
	Method Reportin Accredita	tion Code:	0.08	0.08	0.08	0.08	1.28	LIM	0.5 LIM	0.5 LIM	0.5	11	0.1	4	4	4	8.75	4
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1925851	TP/17/33 ES 2 0.30	20-Sep-18	<0.09	<0.09	<0.09	<0.09	<1.47	7.3	<0.6	<0.6	<0.6	NADIS	12.7	<4.81	<4.81	<4.81	<10.54	<4.81
1925852	TP/17/36 ES 4 0.50	21-Sep-18	<0.09	<0.09	<0.09	0.13	<1.62	8.1	<0.6	<0.6	<0.6	NADIS	14.7	<4.88	<4.88	<4.88	<10.68	<4.88
1925853	TP/17/40 ES 3 0.50	13-Sep-18	<0.09	<0.09	<0.09	<0.09	<1.49	7.6	<0.6	<0.6	<0.6	NADIS	13.9	<4.83	<4.83	<4.83	<10.58	<4.83
	NB854       TP/17/41 ES 1 0.10       <0.10									NADIS					<10.96			
			Client N Contact	ame	SOCO Neil Cook	T <b>EC UK E</b>	Doncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road				•							Date Prir	nted		1			
	Burton-on-Trent, Staffordshire, DE15 0YZ			40.40								Report Number			EFS/190987M			
	Tel +44 (0) 1283 554400		A8013-18 A1 IN MORPETN TO FEITON & AINWICK								1							
	Fax +44 (0) 1283 554422																-	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02 N				
	Acciedita	liton coue.	0	0	0	0	0	0	0	IN				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1925851	TP/17/33 ES 2 0.30	20-Sep-18	<24.1	<4.58	<4.58	<4.58	<10.03	<4.58	<22.9	1.23				
1925852	TP/17/36 ES 4 0.50	21-Sep-18	<24.4	<4.69	<4.69	<4.69	11.62	<4.69	<23.4	0.80				
1925853	TP/17/40 ES 3 0.50	13-Sep-18	<24.2	<4.65	<4.65	<4.65	<10.17	<4.65	<23.2	0.57				
1925854	TP/17/41 ES 1 0.10		<25.0	<4.81	<4.81	<4.81	<10.54	<4.81	<24.1	1.81				
5		Client Name SOCOTEC UK Doncaster Sample Analysis												
Б	rathy Business Park Ashhy Poad		Contact									Data Printad	10_0ot 2019	
	Bretby Business Park, Ashby Road											Date Filleu	13-ULI-2010 EES/4000274	
			A8013-18 A1 In Morpeth To Felton & Alnwick											
	1ei +44 (U) 1283 554400		Table Number   1											
	Fax +44 (0) 1283 554422													



WORKING FOR A HEALTHIER FUTURE

### CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd **Environmental Chemistry** PO Box 100 Burton upon Trent Staffordshire **DE15 0XD** 

CONTRACT NO: S01536-7 DATE OF ISSUE: 19.10.18

DATE SAMPLES RECEIVED: 10.10.18

DATE SAMPLES ANALYSED: 18.10.18

SAMPLE DESCRIPTION: Four soil/loose aggregate samples.

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of the samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### **RESULTS:**

#### **Initial Screening**

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

#### Page 1 of 2



www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org



CONTRACT NO: S01536-7 DATE OF ISSUE: 19.10.18

#### **RESULTS: (cont.)**

#### **Table 1: Qualitative Results**

#### SOCOTEC Job I.D: S190987

IOM sample number	Client sample number	ACM type detected	PLM result
S61115	S1925851 TP/17/33 0.30	7 <b>-</b>	No Asbestos Detected
S61116	S1925852 TP/17/36 0.50	-	No Asbestos Detected
S61117	S1925853 TP/17/40 0.50	-	No Asbestos Detected
S61118	S1925854 TP/17/41 0.10	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



**D** Third Scientific Technician

# **Sample Analysis**

# **SOCOTEC UK Ltd Environmental Chemistry** Analytical and Deviating Sample Overview

S190987M

PAHMSUS

PAH (16) by GCMS

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SOCOTEC UK Doncaster Customer Consignment No S78765 Site A8013-18 A1 In Morpeth To Felton & Alnwick Date Logged 08-Oct-2018 **Report No** S190987M In-House Report Due 11-Oct-2018 Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. CustSer GROHS/ ICPBOR ICPMSS MCertS BTEXHS CALC\_CR ICP ACID: ICPSOI KONECF MethodID GRO (AA) by HSA GC-FID Boron (H20 Soluble) MTBE Molybdenum (MS) Manganese (MS) **MCertS Analysis** SO4-- (acid sol) Chromium (MS) Vanadium (MS) Antimony (MS) Selenium (MS) Chromium (III) Cadmium (MS) Mercury (MS) Chromium vi: Arsenic (MS) Copper (MS) Nickel (MS) Beryllium. **REPORT A** Zinc (MS) Lead (MS) Barium. Iron **ID Number** Description Sampled (µg/kg) √ √ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ~ √ ✓ √ ✓ ✓ √ CL/1925851 TP/17/33 0.30 20/09/18 Ε Ε CL/1925852 TP/17/36 0.50 21/09/18 Е Ε CL/1925853 TP/17/40 0.50 13/09/18 Ε Ε CL/1925854 D TP/17/41 0.10 D

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

EFS/190987M Ver. 1 Where individual results are flagged see report notes for status. Page 9 of 12<sup>The</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

## Sample Analysis

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

S190987M

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Customer	SOCOTEC UK Doncaste				Cons	signm	ent N	lo S78	3765													
Site	A8013-18 A1 In Morpeth	To Felton	& Alı	nwic	k		Date	Logo	jed 08	3-Oct-	2018											
Report No	S190987M						In-H	ouse	Repo	rt Due	e 11-C	Oct-20	)18									
Please note the re	sults for any subcontracted analy	ysis (identified	with a	a '^') i	s likel	y to ta	ake up	o to ai	n add	itiona	l five	worki	ng da	ys.								
		MethodID	PHSOIL	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓	✓	✓
CL/1925851	TP/17/33 0.30	20/09/18	Ε	Ε	Ε	Ε		Ε														
CL/1925852	TP/17/36 0.50	21/09/18	E	E	E	E																
CL/1925853	TP/17/40 0.50	13/09/18	E	E	E	E		E	E	Е	Е	Е	E	E	Е	E	E	Е	E	Е	E	
CL/1925854	TP/17/41 0.10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	<ul> <li>Analysis Subcontracted - Note: due date may vary</li> </ul>

EFS/190987M Ver. 1 Where individual results are flagged see report notes for status. Page 10 of 12<sup>the</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

# **Report Notes**

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### Asbestos Analysis

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S19_0987

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1925851	TP/17/33 ES 2 0.30	Brown Stone SILT
CL/1925852	TP/17/36 ES 4 0.50	Brown Stone SILT
CL/1925853	TP/17/40 ES 3 0.50	Brown SILT
CL/1925854	TP/17/41 ES 1 0.10	Brown Stone SILI

# **TEST REPORT**



#### Report No. EFS/190988M (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 08-Oct-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 19-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham

Operations Manager Energy & Waste Services Date of Issue: 19-Oct-2018

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Units Method Codes		µg/kg BTEXHSA	mg/kg CALC CR3	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA						
	Method Report	ing Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Accredita	ation Code:	UM	UM	UM	U	UM	UM	UM	N	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (≻C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1925855	TP/17/20 ES 3 0.30	10-Sep-18	<12	<12	<24	<24	<12	<12	<36	<28.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
					1												1	
	SOCOTEC		Client N	ame	SOCOT	FEC UK E	Doncaste	r				Sample Analysis						
	_		Contact		Neil Cool	ke												
	Bretby Business Park, Ashby Road											Date Printed 19-Oct-2018						
	Burton-on-Trent, Staffordshire, DE15 0YZ		101	12_10	2 1 1	n Mar	noth '		lton 9	2 Almu	lick	Report Number EFS/190988M						
	Tel +44 (0) 1283 554400		AOU	13-10			hem	юге			Table Number 1							
1	Fax +44 (0) 1283 554422															]		

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS						
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.2	1.2	1.6	0.7	6	0.5	0.5	2	0.5	0.6	16
	Accredita	tion Code:	UM	UM	UM	U	UM	UM	UM	UM	UM	UM	UM	UM	UM	UM	N	UM
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1925855	TP/17/20 ES 3 0.30	10-Sep-18	<0.2	435	1.4	0.2	5.9	0.25	28.1	13.5	19	3700	<0.5	<0.5	28.3	<0.5	34.2	85
			1															
					1							1						
	SOCOTEC Client Name SOCOTEC UK Doncaster									Sam	ple Ana	alysis						
	arathy Rusiness Park Ashby Poad		Contact									Data Prin	nted		4	0-Oct-2010		
	Rurton-on-Trent Staffordshire DE15.0V7											Date Finited 19-Oct-2018						
			A80	)13-18	3 A1 li	n Mor	peth	To Fe	Iton 8	& Alnv	vick	Table Number						
	Tel +44 (U) 1203 004400						•					I able NL	Inder			1		
	Fax +44 (0) 1283 554422																	

	Meth	Units : od Codes :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS
	Method Reporti	ng Limits :	0.5	0.1	36	0.1	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	Accredita	tion Code:	UM	UM	UM	Ν	UM	U	U	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1925855	TP/17/20 ES 3 0.30	10-Sep-18	285	1.16	36800	<0.1	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
						1	1	1	1	1	1			1				
						1	1	1	1	1	1			1				
						1	1	1	1	1	1			1				
						1	1	1	1	1	1			1				
	SOCOTEC Client Name SOCOTEC UK Doncaster Sample Ana									le Analysis								
			Contact									Data Data	4.4	1		0.0-1.0010		
	Bretby Business Park, Ashby Road											Date Prin	ited		1	9-UCt-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		<b>480</b>	13-18	λ Δ1 li	n Mor	neth <sup>-</sup>	To Fe	lton 8	ζ Δlnv	vick	Report N	umber		EF	S/190988M		
	Tel +44 (0) 1283 554400			10-10			Petti					Table Nu	ımber			1		
	Fax +44 (0) 1283 554422																	

	Mothe	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	Sub020	% TMSS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	na Limits :	0.08	0.08	0.08	0.08	1.28	FIISOIL	0.5	0.5	0.5	300020	0.1	4	4	4	8.75	4
	Accredita	tion Code:	UM	UM	UM	UM	U	UM	UM	UM	U	U	U	U	U	U	U	U
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot. Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1925855	TP/17/20 ES 3 0.30	10-Sep-18	<0.09	<0.09	<0.09	<0.09	<1.52	6.2	<0.6	<0.6	<0.6	NADIS	15.6	<4.79	<4.79	<4.79	33.3	<4.79
	ѕосотес 🤇		Client N Contact	ame	SOCO Neil Cook	TEC UK E	oncaste	r	1	I	I	Sample Analysis						I
	Bretby Business Park, Ashby Road				ļ							Date Printed 19-Oct-2018						
	Burton-on-Trent, Staffordshire, DE15 0YZ			40.40	> ∧ 4 I-	- N <i>A</i>						Report Number EFS/190988M						
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	Fax +44 (0) 1283 554422																	

	<b>NR</b> (1	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M						
	Method Report	od Codes :	1 PHUSSI 20	1PHUSSI 4	1PHUSSI 4	1200551	8 75	1200551	20	0.02						
	Accredita	ation Code:	U	U	U	U	U	U	U	N						
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band ≻C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon						
1925855	TP/17/20 ES 3 0.30	10-Sep-18	41.9	<4.74	<4.74	<4.74	<10.38	<4.74	<23.7	1.22						
	SOCOTEC 🤇	Client N	ame	SOCOT	EC UK E	)oncaste	r					Sam	ple Analysis			
			Contact		Nell Cook	e								-		
	Bretby Business Park, Ashby Road											Date Pri	nted	1	9-Oct-2018	
	Burton-on-Trent, Staffordshire, DE15 0YZ		<b>480</b>	13-19	R Δ1 Ir	n Mor	neth <sup>.</sup>	To Fo	lton 8	2 Δlnv	vick	Report N	lumber	EF	S/190988M	
	Tel +44 (0) 1283 554400		700									Table Number1				
Fax +44 (0) 1283 554422																



### CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd **Environmental Chemistry** PO Box 100 Burton upon Trent Staffordshire **DE15 0XD** 

CONTRACT NO: S01536-8 DATE OF ISSUE: 19.10.18

DATE SAMPLES RECEIVED: 10.10.18

DATE SAMPLES ANALYSED: 18.10.18

SAMPLE DESCRIPTION: One soil/loose aggregate sample.

ANALYSIS REQUESTED: Qualitative analysis of a sample for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of the samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### **RESULTS:**

#### **Initial Screening**

www.iom-world.org

No asbestos was detected in the soil sample by stereo-binocular and polarised light microscopy.

A summary of the result is given in Table 1.

#### Page 1 of 2



Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S01536-8 DATE OF ISSUE: 19.10.18

#### **RESULTS:** (cont.)

#### Table 1: Qualitative Results

#### SOCOTEC Job I.D: S190988

IOM sample number	Client sample number	ACM type detected	PLM result
S61119	S1925855 TP/17/20 0.30	a <del>-</del>	No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

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AUTHORISED B

D Third Scientific Technician

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## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

S190988M

PAHMSU

PAH (16) by GCMS

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Customer SOCOTEC UK Doncaster Consignment No S78234 Site A8013-18 A1 In Morpeth To Felton & Alnwick Date Logged 08-Oct-2018 **Report No** S190988M In-House Report Due 11-Oct-2018 Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. CustSer GROHS/ ICPBOR ICPMSS MCertS BTEXHS CALC\_CR ICP ACID: ICPSOI KONECF MethodID GRO (AA) by HSA GC-FID Boron (H20 Soluble) MTBE Molybdenum (MS) Manganese (MS) **MCertS Analysis** SO4-- (acid sol) Chromium (MS) Vanadium (MS) Antimony (MS) Selenium (MS) Chromium (III) Cadmium (MS) Mercury (MS) Chromium vi: Arsenic (MS) Copper (MS) Nickel (MS) Beryllium. **REPORT A** Zinc (MS) Lead (MS) Barium. Iron Sampled **ID Number** Description (µg/kg) √ √ √ ✓ ✓ ✓ ✓ ✓ ✓ √ ✓ ✓ √ √ ✓ ✓ ✓ ✓ √ √ CL/1925855 TP/17/20 0.30 10/09/18 Ε Ε Ε

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

EFS/190988M Ver. 1 Where individual results are flagged see report notes for status. Page 9 of 12<sup>The</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Doviating Sample Overview

S190988M

				P	<b>MIA</b>	ιχιι	Gal	anc		3010	um	yэ	am	hie	Uv	erv	iew					
Customer	SOCOTEC UK Doncas	ter					Con	signm	ent N	lo S7	8234											
Site	A8013-18 A1 In Morpet	th To Felton	& Alı	nwic	k		Date	e Logo	ged 0	8-Oct	2018											
Report No	S190988M						In-H	ouse	Repo	rt Due	e 11-0	Oct-20	)18									
Please note the re	sults for any subcontracted an	alysis (identified	with a	a '^') i	s likel	ly to ta	ake u	o to a	n add	itiona	l five	worki	ng da	ys.								
		MethodID	PHSOIL	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
		-	✓	✓	✓	✓	✓	✓	✓	✓	<ul><li>✓</li></ul>	✓	✓	<ul><li>✓</li></ul>	✓	<ul><li>✓</li></ul>	✓	✓	✓	✓	✓	- ✓
CL/1925855	TP/17/20 0.30	10/09/18	E	E	E	E		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

EFS/190988M Ver. 1 Where individual results are flagged see report notes for status. Page 10 of 12<sup>he</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried @ < 35°C	Calculated from the difference between Total Chromium and Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried @ < 35°C	Determination of Boron in soil samples by hot water extraction followed by ICPOES detection
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried @ < 35°C	Determination of Metals in soil samples by aqua regia digestion followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub- contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

## **Report Notes**

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **Nil**: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### Asbestos Analysis

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

 $\ensuremath{\text{Req}}$  Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client : SOCOTEC UK Doncaster Site : A8013-18 A1 In Morpeth To Felton & Alnwick S19\_0988

Report Number :

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1925855	TP/17/20 ES 3 0.30	Brown Stone SILT

## **TEST REPORT**



#### Report No. EFS/190990M (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 08-Oct-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 19-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS or MCERTS accredited. Any opinions or interpretations expressed herein are outside the scope of any UKAS accreditation held by SOCOTEC UK Limited.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham

Operations Manager Energy & Waste Services Date of Issue: 19-Oct-2018

Accreditation Codes: **N** (Not Accredited), **U** (UKAS), **UM** (UKAS & MCERTS) Tests marked '^' have been subcontracted to another laboratory. (NVM) - denotes the sample matrix is dissimilar to matrices upon which the MCERTS validation was based, and is therefore not accredited for MCERTS. All results are reported on a dry weight basis at 105°C unless otherwise stated. (except QC samples) SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Meth	Units : od Codes :	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	mg/kg	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA
	Method Report	ing Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Accredit	ation Code:	UM	UM	UM	U	UM	UM	UM	Ν	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (≻C5 - C6)	GRO (≻C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1925859	BH/17/03 ES 2 0.50	1	<12.5	<12.5	<25.0	<25.0	<12.5	<12.5	<37.5	<33.5	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250
1925860	BH/17/06 ES 1 0.15	17-Sep-18	<11.3	<11.3	<22.7	<22.7	<11.3	<11.3	<34.0	<25.9	<0.227	<0.227	<0.227	<0.227	<0.227	<0.227	<0.227	<0.227
1925861	BH17/07 ES 5 0.70	18-Sep-18	<11.2	<11.2	<22.5	<22.5	<11.2	<11.2	<33.7	<19.8	<0.225	<0.225	<0.225	<0.225	<0.225	<0.225	<0.225	<0.225
			Client N Contact	ame	SOCO Neil Cool		oncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road				<u>I</u>							Date Pri	nted		1	9-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ							<b>.</b>		A 1		Report N	lumber	1	EF	S/190990M		
	Tel +44 (0) 1283 554400		A80	13-18	5 A1 II	n Mor	peth	10 Fe	iton 8		VICK	Table Nu	umber			1		
	Fax +44 (0) 1283 554422																	

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS												
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.2	1.2	1.6	0.7	6	0.5	0.5	2	0.5	0.6	16
	Accredita	tion Code:	UM	UM	UM	U	UM	N	UM									
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1925859	BH/17/03 ES 2 0.50	1	<0.250	<21	1	0.2	10.5	<0.21	33.5	19.7	15.8	448.2	<0.5	0.9	34.8	<0.5	34.0	45.6
1925860	BH/17/06 ES 1 0.15	17-Sep-18	<0.227	552	1	0.5	9.7	0.24	25.9	26.9	37.4	1490	<0.51	1.2	26	<0.5	52.9	110.7
1925861	BH17/07 ES 5 0.70	18-Sep-18	<0.225	209	0.8	0.3	6.9	<0.19	19.8	21.2	12.4	908.1	<0.5	0.6	24.7	<0.5	43.8	80.2
	SOCOTEC 🔇		Client N	ame	SOCOT	EC UK D	)oncaste	r					Sam	ple Ana	lysis			
			Contact		Neil Cook	е												
	Bretby Business Park, Ashby Road											Date Pri	nted		19	9-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ		784	12_10	λ1 Ir	Mor	noth '		lton 9		vick	Report N	lumber		EF	S/190990M		
	Tel +44 (0) 1283 554400			13-10			hem	IO Fe				Table Nu	Imber			1		
	Fax +44 (0) 1283 554422																	

	Moth	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	na Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	Accredita	tion Code:	UM	UM	UM	N	UM	U	U	UM	UM	UM	UM	UM	UM	UM	UM	UM
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1925859	BH/17/03 ES 2 0.50	1	233	1.21	47200	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1925860	BH/17/06 ES 1 0.15	17-Sep-18	90.5	0.770	50600	<0.1	<0.09	<0.09	<0.09	0.24	0.24	0.29	0.12	0.11	0.22	<0.09	0.50	<0.09
1925861	BH17/07 ES 5 0.70	18-Sep-18	139	0.580	38100	<0.1	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09	<0.09
	SOCOTEC		Client N	ame	SOCO1		Doncaste	r					Sam	ple Ana	lysis			
	Prothy Pupinggo Park, Ashby Page		Contact			/e						Data Brin	tod			0 0 0+ 2019		
	Burton-on-Trent Staffordabire DE15.0VZ											Date Fill	lumber		13	S/100000		
			A80	13-18	3 A1 Iı	n Mor	peth <sup>-</sup>	То Fe	Iton 8	& Alnv	vick		mbor		EF	3/190990M		
	Tei +44 (0) 1283 554400			-			•	-	_			i able Nu	mper			1		
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Demonstra	od Codes :	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PHSOIL	SFAPI	SFAPI	SFAPI	Sub020	TMSS	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI
	Method Reporti	tion Code:	0.08	0.08	0.08	0.08	1.28	LIM	0.5 LIM	0.5 LIM	0.5	11	0.1	4	4	4	8.75	4
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band ≻C12-C16	TPH Ali Band ≻C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1925859	BH/17/03 ES 2 0.50		<0.10	<0.10	<0.10	<0.10	<1.60	7	<0.6	<0.6	<0.6	NADIS	19.9	<5.19	<5.19	<5.19	<11.37	<5.19
1925860	BH/17/06 ES 1 0.15	17-Sep-18	0.16	<0.09	0.46	0.37	<3.27	5.9	<0.6	<0.6	<0.6	NADIS	11.8	<4.67	<4.67	<4.67	10.32	<4.67
1925861	BH17/07 ES 5 0.70	18-Sep-18	<0.09	<0.09	<0.09	<0.09	<1.44	8.1	<0.6	<0.6	<0.6	NADIS	11.0	<4.63	<4.63	<4.63	14.2	<4.63
			Client N Contact	ame	SOCO Neil Cool	rec uk e	Doncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road				<u> </u>							Date Prin	nted		1	9-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ							<b>.</b>				Report N	lumber		EF	S/190990M		
	Tel +44 (0) 1283 554400		A80	13-18	5 A1 II	n Mor	peth	10 Fe	iton 8	k Alnv	VICK	Table Nu	imber			1		
	Fax +44 (0) 1283 554422																	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M					
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59					
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02					
	Accredita	tion Code:	U	U	U	U	U	U	U	N					
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band ≻C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon					
1925859	BH/17/03 ES 2 0.50		<26.0	<4.99	<4.99	<4.99	<10.94	<4.99	<25.0	0.97					
1925860	BH/17/06 ES 1 0.15	17-Sep-18	<23.4	<4.54	6.86	6.81	30.7	<4.54	47.3	2.16					
1925861	BH17/07 ES 5 0.70	18-Sep-18	<23.1	<4.49	<4.49	<4.49	15.4	<4.49	<22.5	0.81					
					1									1	
S			Client N	ame	SOCOT	TEC UK D	)oncaste	r				Sam	ple Analysis		
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### **CERTIFICATE OF ANALYSIS**

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd Environmental Chemistry PO Box 100 Burton upon Trent Staffordshire CONTRACT NO: S01536-9 DATE OF ISSUE: 19.10.18

DATE SAMPLES RECEIVED: 10.10.18

DATE SAMPLES ANALYSED: 18.10.18

SAMPLE DESCRIPTION: Three soil/loose aggregate samples.

**DE15 0XD** 

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of the samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### **RESULTS:**

#### **Initial Screening**

www.iom-world.org

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

#### Page 1 of 2



 Registered Address:
 Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom

 Tel:
 0131 449 8000
 Fax: 0131 449 8084
 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S01536-9 DATE OF ISSUE: 19.10.18

#### **RESULTS: (cont.)**

#### Table 1: Qualitative Results

#### SOCOTEC Job I.D: S190990

IOM sample number	Client sample number	ACM type detected	PLM result
S61120	S1925859 BH/17/03 0.50	-	No Asbestos Detected
S61121	S1925860 BH/17/06 0.15	-	No Asbestos Detected
S61122	S1925861 BH/17/07 0.70	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



AUTHORISED BY: .....

D Third Scientific Technician

## **SOCOTEC UK Ltd Environmental Chemistry** Analytical and Deviating Sample Overview

S190990M

PAHMSU

PAH (16) by GCMS

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SOCOTEC UK Doncaster Customer Consignment No S78090 Site A8013-18 A1 In Morpeth To Felton & Alnwick Date Logged 08-Oct-2018 **Report No** S190990M In-House Report Due 11-Oct-2018 Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. CustSer GROHS/ ICPBOR ICPMSS MCertS BTEXHS CALC\_CR ICP ACID: ICPSOI KONECF MethodID GRO (AA) by HSA GC-FID Boron (H20 Soluble) MTBE Molybdenum (MS) Manganese (MS) **MCertS Analysis** SO4-- (acid sol) Chromium (MS) Vanadium (MS) Antimony (MS) Selenium (MS) Chromium (III) Cadmium (MS) Mercury (MS) Chromium vi: Arsenic (MS) Copper (MS) Lead (MS) Nickel (MS) Beryllium. **REPORT A** Zinc (MS) Barium. Iron **ID Number** Description Sampled (µg/kg) √ √ √ √ ✓ √ ✓ √ ✓ ✓ √ ✓ √ √ √ 1  $\checkmark$  $\checkmark$ 1  $\checkmark$ CL/1925859 BH/17/03 0.50 D CL/1925860 BH/17/06 0.15 17/09/18 Ε Ε Ε CL/1925861 BH17/07 0.70 18/09/18 Ε

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

EFS/190990M Ver. 1 Where individual results are flagged see report notes for status. Page 9 of 12<sup>The</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

CL/1925859

CL/1925860

CL/1925861

BH/17/03 0.50

BH/17/06 0.15

BH17/07 0.70

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

S190990M

WSLM59

TPH by GCFID (AR/Si) **Total Organic Carbon** 

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Customer	SOCOTEC UK Doncaste	r					Cons	signm	ent N	o S78	3090									
Site	A8013-18 A1 In Morpeth	To Felton a	& Alı	nwic	k		Date	Logo	jed 08	3-Oct-	2018									
Report No	S190990M						In-He	ouse	Repo	rt Due	9 11-C	Oct-20	)18							
Please note the re	sults for any subcontracted analy	sis (identified	with a	a '^') i	s likel	y to ta	ake up	o to ai	n add	itiona	l five	worki	ng da	ys.						
		MethodID	PHSOIL	SFAPI			Sub020	TMSS	TPHUSSI											
ID Number	Description	Sampled	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40

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Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

EFS/190990M Ver. 1 Where individual results are flagged see report notes for status. Page 10 of 12<sup>the</sup> integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried @ < 35°C	Calculated from the difference between Total Chromium and Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried @ < 35°C	Determination of Boron in soil samples by hot water extraction followed by ICPOES detection
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried @ < 35°C	Determination of Metals in soil samples by aqua regia digestion followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub- contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

## **Report Notes**

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **Nil**: Where "Nil" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

#### Asbestos Analysis

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

 $\ensuremath{\text{Req}}$  Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S19_0990

Note: major constituent in upper case

Lab ID Number	Client ID	Description
	Client ID	Description
CL/1925859	BH/17/03 ES 2 0.50	Brown Clay SILT
CL/1925860	BH/17/06 ES 1 0.15	Brown Stone SILT
CL/1925861	BH17/07 ES 5 0.70	Brown Stone SILT

## **TEST REPORT**



## Report No. EFS/191142 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 10-Oct-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 23-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6) Table of Asbestos Screening Results (Page 7) Analytical and Deviating Sample Overview (Pages 8 to 9) Table of Method Descriptions (Page 10) Table of Report Notes (Page 11) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Becky Batham

Energy & Waste Services

Date of Issue: 23-Oct-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Meth	Units : od Codes :	µg/kg BTEXHSA	mg/kg	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA						
	Method Reporti	ng Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS A	ccredited :	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1926523	TP/17/13 ES 5 0.50		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<21.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1926524	TP/17/17 ES 2 0.20		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<29.8	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1926525	TP-17-22 ES 1 0.10	13-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<24.0	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
SOCOTEC     Client Name     SOCOTEC UK Doncaster       Contact     Neil Cooke													Sam	ple Ana	lysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ		A80	13-18	8 A1 Ir	n Mor	peth ·	To Fe	lton &	& Alnv	vick	Date Prin Report N	nted lumber		2 E	3-Oct-2018 FS/191142		
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422											Table Nu	Imber			1		

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg	mg/kg ICPBOR	mg/kg	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg
	Method Report	ing Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1926523	TP/17/13 ES 5 0.50		< 0.200	218	2.4	0.2	4.8	0.1	21.6	15.1	9.7	1742	<0.1	<0.5	27.1	<0.5	21.7	32.3
1926524	TP/17/17 ES 2 0.20	1	< 0.200	1090	1.5	0.3	5.3	0.6	29.8	22.8	25.3	333.5	<0.1	<0.5	23.9	0.7	39.8	50.3
1926525	TP-17-22 ES 1 0.10	13-Sep-18	< 0.200	383	1	0.3	5.4	0.23	24	22.1	19.8	540.1	<0.1	0.5	23.4	<0.5	46.5	51.3
	225525     TP-17-22 ES 1 0.10     13-569-18     < 0.200     383     1     0.3     5.4     0.23     24     22.1																	
			Client N Contact	lame	SOCO Neil Cool	FEC UK E	)oncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road			-								Date Pri	nted		2	3-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ											Report N	lumber		E	FS/191142		
	Tel +44 (0) 1283 554400		A80	)13-18	3 A1 li	n Mor	peth <sup>-</sup>	To Fe	Iton 8	k Alnv	vick	Table Ni	umber		-	1		
	Fax +44 (0) 1283 554422															-		

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Report	ing Limits :			ICPSOIL 36		0.08	0 08	PAHMSUS 0.08	PAHMSUS 0.08	PAHMSUS 0.08	PAHMSUS 0.08	PAHMSUS 0.08	PAHMSUS 0.08	PAHMSUS 0.08	0 08	PAHMSUS 0.08	PAHMSUS 0.08
	UKAS A	Accredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1926523	TP/17/13 ES 5 0.50		256	0.859	43000	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1926524	TP/17/17 ES 2 0.20		297	1.17	23000	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1926525	TP-17-22 ES 1 0.10	13-Sep-18	144	0.708	30700	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.10	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
			Client N Contact	ame	SOCO Neil Cool	r <b>ec uk e</b>	Ooncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road											Date Pri	nted		2	3-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ											Report N	lumber		E	FS/191142		
	Tel +44 (0) 1283 554400		A80	)13-18	3 A1 li	n Mor	peth <sup>-</sup>	To Fe	Iton 8	k Alnv	vick	Table N	umber	1	-	1		
	Fax +44 (0) 1283 554422															-		

	Meth	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	% Sub002	% TMSS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	ng Limits :	0.08	0.08	0.08	0.08	1.28	THOOLE	0.5	0.5	0.5	CUDCOL	0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band ≻C8-C10
1926523	TP/17/13 ES 5 0.50		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.4	<0.5	<0.5	<0.5	NADIS	11.9	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00
1926524	TP/17/17 ES 2 0.20		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7	<0.5	0.6	<0.5	NADIS	28.5	< 4.02	< 4.02	< 4.02	11.6	< 4.02
1926525	TP-17-22 ES 1 0.10	13-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.3	7	<0.5	<0.5	<0.5	NADIS	15.1	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00
			Client N Contact	ame	SOCOT Neil Cook	T <b>EC UK E</b>	)oncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road				•							Date Prin	nted		2	3-Oct-2018	1	
	Burton-on-Trent, Staffordshire, DE15 0YZ								-			Report N	lumber		E	FS/191142	1	
	Tel +44 (0) 1283 554400		A80	13-18	3 A1 Ir	ו Mor	peth <sup>-</sup>	I o Fe	Iton 8	k Alnv	vick	Table Ni	Imber			1		
	Fax +44 (0) 1283 554422															•		

		Units :	mg/kg	mg/kg	mg/kg	% M/M								
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Report	ng Limits :	20	4	4	4	8.75	4	20	0.02				
ļ	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1926523	TP/17/13 ES 5 0.50		< 20.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.72				
1926524	TP/17/17 ES 2 0.20		< 20.1	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	4.10				
1926525	TP-17-22 ES 1 0.10	13-Sep-18	< 20.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.15				
S			Client N	ame	SOCOT	r <b>ec uk d</b>	oncaste	r				Sam	ple Analysis	
D	rathy Rusiness Park Ashby Poad		Sonaci									Date Printed	22_0ct. 2010	
	Inton-on-Trent Staffordshire DE15.0V7											Poport Number	EEQ/404442	
			A80	13-18	3 A1 lı	n Mor	peth <sup>-</sup>	Го Fe	Iton 8	Alnv	vick		EF3/191142	
	101 744 (U) 1283 334400						•					Table Number	1	
1 '	Fax +44 (0) 1283 554422													

#### ASBESTOS ANALYSIS RESULTS



Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

							1089					SOCOTEC
Client:			SOCOTEC	Environmenta	al Chemistry					Page 1 of 1		
Address:			Etwall Hous	e, Bretby Bus	iness Park, As	shby Road, Bur	ton upon Trent			Report No:	ANO-0503-19618	
For the atten	tion of:		SOCOTEC	UK Doncaste	r	<b>,</b>	•			Report Date:	22/10/2018	
Site Address	:		A8013-18 A	1 In Morpeth	To Felton & Al	nwick				Project Number:	S191142	
Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content		Asbestos Fibre Types	Identified
CL/1926523		TP/17/13 0.50 Soils	20/10/2018	1418.6	1353.7	0.0000	0.0000				NADIS	
CL/1926524		TP/17/17 0.20 Soils	20/10/2018	573.2	563.3	0.0000	0.0000				NADIS	
CL/1926525	13/09/18	TP-17-22 0.10 Soils	22/10/2018	1191.1	1007.5	0.0000	0.0000			NADIS		
				1								
				-						-		
			_	-						-		
-			-	ł								
Ko		NAACR = Not Analysed at C	lients Request	L		NAIIS = No As	bestos Identified in Sam	ple (Identification O	niy)	Name:	Tom Pratt	Authorised Signatory:
ĸey	yə	* visible to nake	d eye			NADIS = No /	Asbestos Detected in Sar	mple (ID & Quant Or	nly)	Position:	Lab Coordinator	
The sample anal Asbestos Limited assumed, unless	lysis for the abo d in house meth s specified, to b	ove results was carried out using the procedures od of transmitted/polarised light microscopy an e amphiboles. All tests were carried out at a S0	s detailed in SOC d centre stop dis DCOTEC Asbest	OTEC Asbestos persion staining os Ltd laboratory	Limited in house (SCI-ASB-007), I , UKAS Testing	e method (SCI-ASE based on HSE's H Number 1089. Re	3-020) based on EA doc SG 248. The analysis o commended sample we	ument Quantification f the < 10mm fraction eight is 1kg-2kg, sa	on of asbestos in soil and on for asbestos content mples less than 1kg are	d associated materials - only includes ACMs and classified as deviating	Draft 2017. Fibre identification w d fibres and does not discriminate samples.	as carried out using SOCOTEC non-asbestos fibres. All fibres are

## SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S191142

Customer SOCOTEC UK Doncaster Site A8013-18 A1 In Morpeth To Felton & Alnwick **Report No** S191142

Consignment No S78134 Date Logged 10-Oct-2018

In-House Report Due 16-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL			KONECR	PAHMSUS	PHSOIL	
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)	
			<ul> <li>✓</li> </ul>			✓	✓	✓	1	✓	✓	✓	1	✓	✓	✓	1	✓	✓		1	1	✓	✓		✓	✓	
CL/1926523	TP/17/13 0.50	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1926524	TP/17/17 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1926525	TP-17-22 0.10	13/09/18	Ε			Ε		E																		Ε	Ε	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

А The sample was received in an inappropriate container for this analysis

в The sample was received without the correct preservation for this analysis

С Headspace present in the sample container

D The sampling date was not supplied so holding time may be compromised - applicable to all analysis

Е Sample processing did not commence within the appropriate holding time

Sample processing did not commence within the appropriate handling time

Requested Analysis Key

Analysis Required

Analysis dependant upon trigger result - Note: due date may be affected if triggered

No analysis scheduled

Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 8 of 11 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling.

## SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

Customer	SOCOTEC UK Doncaster
Site	A8013-18 A1 In Morpeth To Felton & Alnwick
Report No	S191142

Consignment No S78134 Date Logged 10-Oct-2018

In-House Report Due 16-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI			Sub002	TMSS	rphussi													NSLM59	
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	<b>Total Organic Carbon</b>	
			✓	✓	✓	✓	✓	✓	✓	1	✓	✓	✓	✓	✓	1	1	1	✓	✓	1	
CL/1926523	TP/17/13 0.50	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1926524	TP/17/17 0.20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1926525	TP-17-22 0.10	13/09/18	E	E	E		E	E	E	E	Ε	E	E	E	E	E	E	Ε	E	E	E	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key А The sample was received in an inappropriate container for this analysis в The sample was received without the correct preservation for this analysis С Headspace present in the sample container D The sampling date was not supplied so holding time may be compromised - applicable to all analysis Е Sample processing did not commence within the appropriate holding time Sample processing did not commence within the appropriate handling time Requested Analysis Key Analysis Required Analysis dependant upon trigger result - Note: due date may be affected if triggered No analysis scheduled

Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 9 of 11 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/191142 Ver. 1

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes (BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried @ < 35°C	Calculated from the difference between Total Chromium and Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried @ < 35°C	Determination of Total Sulphate in soil samples by Hydrochloric Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried @ < 35°C	Determination of Boron in soil samples by hot water extraction followed by ICPOES detection
Soil	ICPMSS	Oven Dried @ < 35°C	Determination of Metals in Marine Sediments and Soil samples by aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried @ < 35°C	Determination of Metals in soil samples by aqua regia digestion followed by ICPOES detection
Soil	KONECR	Oven Dried @ < 35°C	Determination of Chromium vi in soil samples by water extraction followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub- contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil with GCFID detection including quantitation of Aromatic and Aliphatic fractions.
Soil	WSLM59	Oven Dried @ < 35°C	Determination of Organic Carbon in soil using sulphurous Acid digestion followed by high temperature combustion and IR detection

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l NiI: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Damant Number	C10 1110

Report Number :

S19\_1142

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CI /1926523	TP/17/13 FS 5 0 50	SII T
CL /1026524	TD/17/17 EQ 0 0 00	
CL/1026525	TP_17_22 ES 1 0 10	SILT
CL/1920525	IF-17-22 E3 1 0.10	SILT

## **TEST REPORT**



## Report No. EFS/191143 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 10-Oct-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 26-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6) Table of Asbestos Screening Results (Page 7) Analytical and Deviating Sample Overview (Pages 8 to 9) Table of Method Descriptions (Page 10) Table of Report Notes (Page 11) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Becky Batham



Date of Issue: 26-Oct-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Units Method Codes			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporting	a Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS Acc	credited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1926526	TP/17/45 ES 2 0.10		< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<26.3	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1926527	TP-17-46 ES 4 0.50	14-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<21.0	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
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																		-
			Client N Contact	ame	SOCO Neil Cook	<b>FEC UK E</b>	Ooncaste	r	1	1	1		Sam	ple Ana	alysis	1		
	Bretby Business Park, Ashby Road				•							Date Pri	nted		20	6-Oct-2018		
	Burton-on-Trent, Staffordshire, DE15 0YZ										- Report Number EFS/19				FS/191143	-		
	Tel +44 (0) 1283 554400	A8013-18 A1 In Morpeth To Felton & Alnwick								Table Number				1	1			
	Fax +44 (0) 1283 554422																1	

	Units Method Codes Method Reporting Limits			mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1926526	TP/17/45 ES 2 0.10		< 0.200	497	1.6	0.4	7.5	0.22	26.3	20.9	24.5	963.2	0.11	0.5	18.1	<0.5	36.7	55.9
1926527	TP-17-46 ES 4 0.50	14-Sep-18	< 0.200	267	1.3	0.2	4.7	<0.1	21	14.1	18	421.5	<0.1	0.6	15.2	<0.5	26.2	39.4
			Client Name SOCOTEC UK Doncaster										Sam	ple Ana	lysis			
	Brothy Rusiness Park Ashby Poad		Jonaci									Data Pris	atod		2	6-Oct-2019		
1	Burton-on-Trent Staffordshire DE15.0V7											Date Fill	lumbor		2			
		A80	13-18	3 A1 li	ו Mor	peth <sup>-</sup>	Го Fe	Iton 8	& Alnv	vick	Keport Number EFS/1			-3/191143				
	Fax +44 (0) 1283 554422	•													1			

	Marth	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Report	na Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1926526	5 TP/17/45 ES 2 0.10		98.3	0.79	34800	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1926527	TP-17-46 ES 4 0.50	14-Sep-18	56.3	0.613	26300	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
			Client Name SOCOTEC UK Doncaster										Sam	ple Ana	alysis			
	Brothy Business Park Ashby Poad											Data Pris	atod		2	6-Oct-2019		
	Burton-on-Tront Staffordehire DE15 0V7											Date Pill	lumbor	-	2	ES/1011/2		
	Tol . 44 (0) 1092 554400		A8013-18 A1 In Morpeth To Felton & Alnwick									Keport Number EFS			JI J			
	Fax +44 (0) 1283 554422		•													1		

	Units Method Codes			mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	% Sub002	% TMSS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporting	q Limits :	0.08	0.08	0.08	0.08	1.28	THOOL	0.5	0.5	0.5	505002	0.1	4	4	4	8.75	4
	UKAS Acc	credited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1926526	TP/17/45 ES 2 0.10		< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8.3	<0.5	1.9	<0.5	NADIS	17.5	< 4.02	< 4.02	< 4.02	12.5	< 4.02
1926527	TP-17-46 ES 4 0.50	14-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8.7	<0.5	0.6	<0.5	NADIS	16.5	< 4.02	< 4.02	< 4.02	< 8.80	< 4.02
																		_
			Client N Contact	ame	SOCO Neil Cook	T <b>EC UK E</b>	oncaste	r					Sam	ple Ana	lysis	1		
	Bretby Business Park, Ashby Road											Date Printed 26-Oct-2018					1	
	Bretby Business Park, Ashby Road											Report Number FFS/10				FS/191143	1	
	Burton-on-Trent, Staffordshire, DE15 0YZ			A8013-18 A1 In Morpeth To Felton & Alnwick								K Table Number 1			1			
	Fax +44 (0) 1283 554422						-										1	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02				
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
LAB ID Number CL/	LAB ID Number         Client Sample Description         Sample Date           1926526         TP/17/45 ES 2 0.10         14-Sep-           1926527         TP-17-46 ES 4 0.50         14-Sep-			TPH Aro Band ≻C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1926526	TP/17/45 ES 2 0.10		< 20.1	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	2.00				
1926527	TP-17-46 ES 4 0.50	14-Sep-18	< 20.1	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.09				
S			Client N	ame	SOCOT		oncaste	r				Sam	ple Analysis	
D	rathy Rusiness Park Ashby Poad		Joinaci									Data Printad	26-0-+ 2019	
B	Inton-on-Trent Staffordshire DE15.0V7										Penort Number	EFS/1011/2		
			A80	13-18	3 A1 li	n Mor	peth <sup>-</sup>	То Fe	Iton 8	🖁 Alnv	vick		LF3/191143	
.														
1	Fax +44 (0) 1283 554422													
#### ASBESTOS ANALYSIS RESULTS



Detection limit of Method SCI-ASB-020 is 0.001%

Sampling has been carried out by a third party

SOCOTEC

SOCOTEC Asbestos Limited Certificate of Analysis for Asbestos in Soils, Sediments and Aggregates

							1089					SOCOTEC	
Client:			SOCOTEC	Environmenta	al Chemistry					Page 1 of 1			
Address:			Etwall Hous	e, Bretby Bus	iness Park, As	shby Road, Burt	ton upon Trent			Report No:	ANO-0503-19617		
For the atten	tion of:		SOCOTEC	UK Doncaste	r					Report Date:	19/10/2018		
Site Address			A8013-18 A	1 In Morpeth	To Felton & Al	nwick				Project Number:	S191143		
Sample Number	Sample Date	Sample Location & Matrix	Test Date	Total Sample Dry Weight (g)	Weight of <10mm Fraction (g)	Asbestos(g) in >10mm	Asbestos(g) in < 10mm	% Asbestos by weight of Total Dried Sample	Moisture Content		Asbestos Fibre Types I	dentified	
CL/1926526		TP/17/45 0.10 Soils	19/10/2018	972.5	964.8	0.0000	0.0000				NADIS		
CL/1926527	14/09/18	TP-17-46 0.50 Soils	19/10/2018	1302.7	1251.1	0.0000	0.0000				NADIS		
			-	-									
			_										
			-	1									
-				1									
NAACR = Not Analysed at Clients Request     NAIIS = No Asbestos Identified in Sample (Identification Only)     Name:     Rachel Howell     Authorised Signatory:												Authorised Signatory:	
* visible to naked eye NADIS = No Asbestos Detected in Sample (ID & Quant Only) Position:												) zastar orzani wijednika jednos kontra zasta.	
The sample anal Asbestos Limited assumed, unless as deviating sam	e analysis for the above results was carried out using the procedures detailed in SOCOTEC Asbestos Limited in house method (SCI-ASB-020) based on EA document Quantification of asbestos in soil and associated materials - Draft 2017. Fibre identification was carried out using SOCOTEC in house method (SCI-ASB-020) based on EA document Quantification of asbestos in soil and associated materials - Draft 2017. Fibre identification was carried out using SOCOTEC in house method (SCI-ASB-007), based on HSE's HSG 248. The analysis of the < 10mm fraction for asbestos content only includes ACMs and fibres and does not discriminate non-asbestos fibres. All fibres are unless specified, to be amphiboles. All tests were carried out at a SOCOTEC Asbestos Ltd laboratory, Ashbourne House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ UKAS Testing Number 1089. Recommended sample weight is 1kg-2kg, samples less than 1kg are classified g samples.												

## SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S191143

Customer SOCOTEC UK Doncaster Site A8013-18 A1 In Morpeth To Felton & Alnwick S191143 **Report No** 

Consignment No S78236 Date Logged 10-Oct-2018

In-House Report Due 16-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL			KONECR	PAHMSUS	PHSOIL	
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)	
			✓			<ul><li>✓</li></ul>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	1
CL/1926526	TP/17/45 0.10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
CL/1926527	TP-17-46 0.50	14/09/18	E			E		E																		E	Е	

Note: We will endeavour to prioritise samples to complete analysis within		Deviating Sample Key
holding time; however any delay could result in samples becoming	A	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	E	3 The sample was received without the correct preservation for this analysis
	C	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	[	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	F	Requested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	/	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 8 of 11 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/191143 Ver. 1

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

Customer	SOCOTEC UK Doncaster
Site	A8013-18 A1 In Morpeth To Felton & Alnwick
Report No	S191143

Consignment No S78236 Date Logged 10-Oct-2018

In-House Report Due 16-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI	-	-	Sub002	TMSS	rphussi		-	-	-	-	-		-	-	-	-	-	NSLM59	
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon	
			✓	✓	✓	✓	✓	✓	✓	~	✓	✓	✓	✓	✓	✓	✓	1	✓	✓	✓	
CL/1926526	TP/17/45 0.10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	l
CL/1926527	TP-17-46 0.50	14/09/18	E	E	Ē		Ē	Ē	E	E	E	E	E	E	E	Ē	Ē	E	Ē	E	E	l

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 9 of 11 The integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/191143 Ver. 1

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. - Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S19_1143

Report Number :

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1926526	TP/17/45 ES 2 0.10	Brown Gravel SILT
CL/1926527	TP-17-46 ES 4 0.50	Brown Stone SILT

## **TEST REPORT**



## Report No. EFS/191212 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 1 sample described in this report were registered for analysis by SOCOTEC UK Limited on 11-Oct-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 26-Oct-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is
displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Li Becky Batham

Operations Manager Energy & Waste Services Date of Issue: 26-Oct-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Metho	Units : od Codes :	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	µg/kg BTEXHSA	mg/kg CALC CR3	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA	mg/kg GROHSA
	Method Reporti	ng Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (≻C5 - C6)	GRO (>C7 - C8)	GRO (≻C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1926733	TP17/24 ES 2 0.40	17-Sep-18	< 10.0	14	42	< 20.0	< 10.0	< 10.0	42	<20.1	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
				ļ														
				ļ														
												-						
				ame	SOCO	T <b>EC UK [</b> (e	JK Doncaster Sample Analysis											
	Brethy Business Park Ashby Road		Contact									Date Pri	ated		2	6-0ct-2018	1	
	Burton-on-Trent Staffordshire DE15.0V7											Date I'll	lumbor	26-Oct-2018				
			A80	)13-18	3 A1 II	n Mor	peth <sup>-</sup>	To Fe	Iton 8	Alnv	vick				E	-3/191212		
	i ei +44 (0) 1283 554400			•								I able Nu	Imper			1		
	Fax +44 (0) 1283 554422																	

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	
	Method Report	ing Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3	
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	
1926733	TP17/24 ES 2 0.40	17-Sep-18	< 0.200	282	1.1	<0.1	5.5	0.2	20.1	11.4	15	1890	<0.1	<0.5	22.7	<0.5	29.9	43.1	
		1																	
		1																	
		1										1		1					
			Client N	lame	SOCO	LEC NK D	Ooncaste	r	I	I	I		Sam	ple Ana	alysis	I		I	
			Contact	:	Neil Cool	ke													
	Bretby Business Park, Ashby Road				-							Date Pri	nted		2	6-Oct-2018	1		
	Burton-on-Trent, Staffordshire, DE15 0YZ											Report N	lumber		E	FS/191212	1		
	Tel +44 (0) 1283 554400		A80	)13-18	3 A1 li	n Mor	peth <sup>-</sup>	Го Ге	Iton 8	k Alnv	vick	Table N	imber		-	g       g       g         22.7       <0.5			
	Fax +44 (0) 1283 554422						-												
1	Fax +44 (0) 1283 554422		1									1					l		

	Math	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Report	ing Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1926733	TP17/24 ES 2 0.40	17-Sep-18	190	0.728	29100	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
	SOCOTEC	1	Client N Contact	ame	SOCO Neil Cool	FEC UK E	Doncaste	r				Date Pri	Sam	ple Ana	alysis 2	6-Oct-2018		1
	Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		A80	13-18	3 A1 li	n Mor	peth <sup>-</sup>	To Fe	lton 8	k Alnv	vick	Report Number         EFS/191212           Table Number         1						

Units Method Codes		mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	pH Units PHSOII	mg/kg SFAPI	mg/kg SFAPI	mg/kg SEAPI	% Sub020	% TMSS	mg/kg	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	
	Method Report	ing Limits :	0.08	0.08	0.08	0.08	1.28		0.5	0.5	0.5	0.1	0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1926733	TP17/24 ES 2 0.40	17-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.8	<0.5	<0.5	<0.5	NADIS	10.5	< 4.16	< 4.16	7.56	< 9.11	< 4.16
			Client N	lame	SOCOT	FEC UK D	Doncaster	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		Contact A80	)13-18	Neil Cool	n Mor	peth <sup>-</sup>	To Fe	lton 8	& Alnv	vick	Ck Date Printed 26-Oct-2018 Report Number EFS/191212 Table Number 1						

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Method Departi	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
		ng Limits : ccredited :	20 Yes	4 Yes	4 Yes	4 Yes	8.75 Yes	4 Yes	20 Yes	0.02 Yes				
	5101074	oorouncu .	100	100	100	100	100	100	100	100				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1926733	1P17/24 ES 2 0.40	17-Sep-18	< 20.8	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.69				
5			Client N	lame	SOCOT	T <b>EC UK E</b>	oncaste	r				Sam	ple Analysis	
в	retby Business Park, Ashby Road		Jonada			-						Date Printed	26-Oct-2018	
в	urton-on-Trent, Staffordshire, DE15 0YZ											Report Number	EFS/191212	
	Tel +44 (0) 1283 554400		A80	)13-18	3 A1 lı	ו Mor	peth	Го Ге	Iton 8	k Alnv	vick	Table Number	1	
	Fax +44 (0) 1283 554422												•	



CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY:

SOCOTEC UK Ltd **Environmental Chemistry PO Box 100** Burton upon Trent Staffordshire **DE15 0XD** 

CONTRACT NO: S01629-5 DATE OF ISSUE: 24.10.18

DATE SAMPLES RECEIVED: 15.10.18

DATE SAMPLES ANALYSED: 24.10.18

SAMPLE DESCRIPTION: One soil/loose aggregate sample weighing approximately 1.3kg.

ANALYSIS REQUESTED: Qualitative and quantitative analysis of a soil/loose aggregate sample for mass determination of asbestos.

#### METHODS:

Qualitative - The sample was analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative - The analysis was carried out using our documented in-house method based on HSE Contract Research Report No. 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire sample, detailed analysis of a representative sub-sample and quantification by hand picking/weighing and/or fibre counting/sizing as appropriate.

#### RESULTS:

#### **Initial Screening**

www.iom-world.org

No asbestos was detected in the soil sample by stereo-binocular and polarised light microscopy.

A summary of the result is given in Table 1.





Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org



CONTRACT NO: S01629-5 DATE OF ISSUE: 24.10.18

**RESULTS: (cont.)** 

#### Table 1: Qualitative Results

#### SOCOTEC Job I.D: S191212

IOM sample number	Client sample number	ACM type detected	PLM result
S61193	S1926733 TP17/24 0.40	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.

AUTHORISED BY: .....

D Third Scientific Technician

## SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S191212

PHSOIL

KONECF PAHMSU

ICPSOI

Customer	SOCOTEC UK Doncaster	-	Consignment No S78556												
Site	A8013-18 A1 In Morpeth	Date Logged 11-Oct-2018													
Report No	S191212		In-Ho	ouse l	Repo	rt Due	9 17-C	Oct-20	18						
Please note the	results for any subcontracted analy	sis (identified	with a	a '^') is	s likel	y to ta	ake up	to ar	n addi	itional	five	workir	ng da	ys.	
		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS						

ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.	Beryllium.	Iron	Chromium vi:	PAH (16) by GCMS	pH units (AR)
	-	•	<ul><li>✓</li></ul>			<ul><li>✓</li></ul>	✓	√	<ul><li>✓</li></ul>	<ul><li>✓</li></ul>	<ul><li>✓</li></ul>	✓	✓	✓	√	✓	✓	✓	✓		✓	✓	✓	✓		$\checkmark$	✓
CL/1926733	TP17/24 0.40	17/09/18	E			E		E																		E	E

Note: We will endeavour to prioritise samples to complete analysis within	Devi	ating Sample Key
holding time; however any delay could result in samples becoming	А	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	Е	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Req	uested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

## SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

S191212

Customer	SOCOTEC UK Doncaster	Consignment No S78556
Site	A8013-18 A1 In Morpeth To Felton & Alnwick	Date Logged 11-Oct-2018
Report No	S191212	In-House Report Due 17-Oct-2018
Please note the	results for any subcontracted analysis (identified with a '^') is likely	to take up to an additional five working days

		MethodID	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID and Quant (1 & 2)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CL/1926733	TP17/24 0.40	17/09/18	Е	Е	Е			Е	Е	Е	Е	Е	Е	Е	Е	Е	Е	Е	Е	Е	Е

Note: We will endeavour to prioritise samples to complete analysis within	Dev	iating Sample Key
holding time; however any delay could result in samples becoming	А	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	в	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Req	uested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table. All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

**NS** Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S19_1212

Report Number :

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1926733	TP17/24 ES 2 0.40	Brown Stone SILT

## **TEST REPORT**



## Report No. EFS/191729 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & Alnwick

The 5 samples described in this report were registered for analysis by SOCOTEC UK Limited on 23-Oct-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 02-Nov-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Additional Report Notes (Page 11)
Table of Method Descriptions (Page 12)
Table of Report Notes (Page 13)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham Operations Manager Energy & Waste Services

Date of Issue: 02-Nov-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Meth	Units : od Codes :	µg/kg BTEXHSA	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
	Method Reporti	ng Limits :	10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS A	ccredited :	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1928691	TP/17/01 ES 2 0.20	27-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<20.2	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1928692	TP/17/08 ES 4 0.40	26-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<28.0	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1928693	TP/17/09A ES 2 0.20	26-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<30.1	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1928694	TP/17/38 ES 5 0.50	25-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	<24.2	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1928695	TP/17/39 ES 4 0.60	25-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0*	< 10.0	< 10.0	< 30.0	20.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
Bretby Business Park, Ashby Road     Date Printed     02-Nov-2018       Burton-on-Trent, Staffordshire, DE15 0YZ     Tel +44 (0) 1283 554400     A8013-18 A1 In Morpeth To Felton & Alnwick     Report Number     EFS/191729       Table Number     1																		
	Fax +44 (0) 1283 554422																	

	Meth	Units : od Codes :	mg/kg GROHSA	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	ng Limits :	0.2	20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1928691	TP/17/01 ES 2 0.20	27-Sep-18	< 0.200	363	1.2	0.2	3.7	0.19	20.2	29	16.8	522.1	<0.1	<0.5	43	<0.5	22.3	62.2
1928692	TP/17/08 ES 4 0.40	26-Sep-18	< 0.200	91	0.9	0.3	10.9	0.11	28	26.3	12.5	264.9	<0.1	<0.5	34.3	<0.5	31.1	53
1928693	TP/17/09A ES 2 0.20	26-Sep-18	< 0.200	576	1.2	0.4	7.4	0.26	30.1	19	26.8	978.6	<0.1	<0.5	23.5	<0.5	44.1	65.8
1928694	TP/17/38 ES 5 0.50	25-Sep-18	< 0.200	278	0.8	0.3	9	0.37	24.2	34.8	17.8	1910	<0.1	0.7	32	<0.5	35.7	74
1928695	TP/17/39 ES 4 0.60	25-Sep-18	< 0.200	232	0.9	<0.1	5.7	0.11	20.8	19.4	16	1180	<0.1	0.5	18.2	<0.5	29	50.5
			Client N Contact	ame	SOCO Neil Cook	r <b>ec UK E</b> <sup>(e</sup>	Doncaste	r					Sam	ple Ana	lysis			
	Bretby Business Park, Ashby Road											Date Pri	nted		02	2-Nov-2018	]	
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	Tel +44 (0) 1283 554400		Aðu	13-16			petn	юге			VICK	Table Nu	umber			1		
	Fax +44 (0) 1283 554422																1	

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Meth Method Penorti	od Codes :			ICPSOIL 36	KONECR	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS	PAHMSUS
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1928691	TP/17/01 ES 2 0.20	27-Sep-18	130	0.65	25000	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1928692	TP/17/08 ES 4 0.40	26-Sep-18	147	0.95	37700	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1928693	TP/17/09A ES 2 0.20	26-Sep-18	187	1.01	34000	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1928694	TP/17/38 ES 5 0.50	25-Sep-18	124	1.13	57100	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
1928695	TP/17/39 ES 4 0.60	25-Sep-18	63	0.55	28000	0.2	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
	SOCOTEC CONTRACTOR SOCOTEC SOCOTEC SOCOTEC SOCOTEC SOCOTEC SOCOTEC SOCOTEC SOCOTEC SOCOTECT S		Client N Contact	<sup>ame</sup> )13-18	SOCOT Neil Cook B A1 It	rec uk d œ n Mor	peth <sup>-</sup>	r To Fe	Iton 8	k Alnv	vick	Date Printed     02-Nov-2018       Report Number     EFS/191729       Table Number     1						
	Fax +44 (0) 1283 554422																	

	Meth	Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	pH Units	mg/kg	mg/kg	mg/kg	Sub020	% TMSS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	Method Reporti	ng Limits :	0.08	0.08	0.08	0.08	1.28	THOOL	0.5	0.5	0.5	005020	0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band ≻C8-C10
1928691	TP/17/01 ES 2 0.20	27-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.4	<0.5	<0.5	<0.5	NADIS	13.2	< 4.08	< 4.08	4.38	10.4	< 4.08
1928692	TP/17/08 ES 4 0.40	26-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	7.6	<0.5	<0.5	<0.5	NADIS	15.5	< 4.04	< 4.04	< 4.04	< 8.85	< 4.04
1928693	TP/17/09A ES 2 0.20	26-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	6.8	<0.5	<0.5	<0.5	NADIS	21.0	< 4.08	< 4.08	< 4.08	< 8.94	< 4.08
1928694	TP/17/38 ES 5 0.50	25-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8.1	<0.5	<0.5	<0.5	NADIS	14.7	< 4.08	< 4.08	< 4.08	< 8.94	< 4.08
1928695	TP/17/39 ES 4 0.60	25-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28	8	<0.5	<0.5	<0.5	NADIS	9.0	< 4.02	< 4.02	< 4.02	< 8.80	< 4.02
			Client N Contact	ame	SOCOT Neil Cook	r <b>EC UK E</b>	oncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400		A80	)13-18	3 A1 Ir	n Mor	peth <sup>-</sup>	To Fe	lton &	& Alnv	vick	Date Prir Report N Table Nu	nted lumber imber		02 E	2-Nov-2018 FS/191729 1		
	Fax +44 (0) 1283 554422													1				

		Units :	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02				
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1928691	TP/17/01 ES 2 0.20	27-Sep-18	22.1	< 4.00	4.12	< 4.00	9.71	< 4.00	< 20.0	1.29				
1928692	TP/17/08 ES 4 0.40	26-Sep-18	< 20.2	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.83				
1928693	TP/17/09A ES 2 0.20	26-Sep-18	< 20.4	< 4.00	< 4.00	< 4.00	9.38	< 4.00	< 20.0	2.67				
1928694	TP/17/38 ES 5 0.50	25-Sep-18	< 20.4	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.93				
1928695	TP/17/39 ES 4 0.60	25-Sep-18	21.6	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	0.63				
5			Client N Contact	ame	SOCOT	r <b>EC UK D</b>	oncaste	r				Sam	ple Analysis	
в	retby Business Park, Ashby Road											Date Printed	02-Nov-2018	
в	urton-on-Trent, Staffordshire, DE15 0YZ											Report Number	EFS/191729	
Tel +44 (0) 1283 554400				s A1 Ir	n Mor	peth	I o Fe	Iton &	k Alnv	VICK	Table Number	1		
	Fax +44 (0) 1283 554422												· · ·	



### CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd **Environmental Chemistry** PO Box 100 Burton upon Trent Staffordshire **DE15 0XD** 

CONTRACT NO: S01856-2 DATE OF ISSUE: 01.11.18

DATE SAMPLES RECEIVED: 25.10.18

DATE SAMPLES ANALYSED: 01.11.18

SAMPLE DESCRIPTION: Five soil/loose aggregate samples.

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

#### METHODS:

Our method involves initial examination of the samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

#### **RESULTS:**

#### **Initial Screening**

No asbestos was detected in any of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

#### Page 1 of 2



www.iom-world.org

Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S01856-2 DATE OF ISSUE: 01.11.18

**RESULTS: (cont.)** 

#### Table 1: Qualitative Results

SOCOTEC Job I.D: S191729

IOM sample number	Client sample number	ACM type detected	PLM result
S61601	S1928691 TP/17/01 0.20	-	No Asbestos Detected
S61602	S1928692 TP/17/08 0.40	-	No Asbestos Detected
S61603	S1928693 TP/17/09A 0.20	-	No Asbestos Detected
S61604	S1928694 TP/17/38 0.50	-	No Asbestos Detected
S61605	S1928695 TP/17/39 0.60		No Asbestos Detected

Our detection limit for this method is 0.001%.

#### COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



AUTHORISED BY

D Third Scientific Technician

## **SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview**

S191729

PHSOIL

pH units (AR)

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SOCOTEC UK Doncaster Customer Consignment No S78963 Site A8013-18 A1 In Morpeth To Felton & Alnwick Date Logged 23-Oct-2018 **Report No** S191729 In-House Report Due 26-Oct-2018 Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days. CustSer GROHS/ ICPBOR ICPMSS BTEXHS CALC\_CR ICP ACID: ICPSOI KONECF PAHMSUS MethodID GRO (AA) by HSA GC-FID Boron (H20 Soluble) MTBE PAH (16) by GCMS Molybdenum (MS) Manganese (MS) SO4-- (acid sol) Chromium (MS) Vanadium (MS) Antimony (MS) Selenium (MS) Chromium (III) Cadmium (MS) Mercury (MS) Chromium vi: Arsenic (MS) Copper (MS) Lead (MS) Nickel (MS) Beryllium. **REPORT A** Zinc (MS) Barium. Iron **ID Number** Description Sampled (µg/kg) √ √ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ √ ✓ √ ✓ √ √ CL/1928691 TP/17/01 0.20 27/09/18 Ε Ε Ε CL/1928692 TP/17/08 0.40 26/09/18 Ε Ε Ε Е CL/1928693 TP/17/09A 0.20 26/09/18 Ε Ε Ε Е CL/1928694 TP/17/38 0.50 25/09/18 Ε Ε Ε Ε CL/1928695 TP/17/39 0.60 Ε Ε Ε Е 25/09/18

Note: We will endeavour to prioritise samples to complete analysis within	Devi	iating Sample Key
holding time; however any delay could result in samples becoming	A	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	Е	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Req	uested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

## SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S191729

Customer	SOCOTEC UK Doncaster
Site	A8013-18 A1 In Morpeth To Felton & Alnwick
Report No	S191729

Consignment No S78963 Date Logged 23-Oct-2018

 2010 209900 20 001 2010
In-House Report Due 26-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI	-	-	Sub020	TMSS	TPHUSSI	-	-	-	-	-	-	-	-	-	-	-		WSLM59
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon
			✓	~	1	✓	~	~	✓	1	✓	✓	✓	~	~	~	✓	1	✓	✓	$\checkmark$
CL/1928691	TP/17/01 0.20	27/09/18	Ε	Ε	Ε		Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	E	Ε	E	Ε	
CL/1928692	TP/17/08 0.40	26/09/18	E	E	E		E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
CL/1928693	TP/17/09A 0.20	26/09/18	Ē	E	E		E	E	Ē	E	E	E	E	E	E	E	E	E	E	Ē	Е
CL/1928694	TP/17/38 0.50	25/09/18	Ε	Ε	Ε		Ε	Ε	Ε	Ε	Е	Е	Е	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Е
CL/1928695	TP/17/39 0.60	25/09/18	Ε	Ε	Ε		Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	Ε	E	Ε	E	Ε	Е

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 10 of 13 he integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/191729 Ver. 1

Report Number : EFS/191729

## **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	CL1928691 TO CL1928695	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (MTBE). These circumstances should be taken into consideration when utilising the data.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description								
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes								
			(BTEX) by Headspace GCFID								
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and								
		@ < 35°C	Hexavalent Chromium								
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons								
			(GRO) by Headspace GCFID								
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric								
		@ < 35°C	Acid extraction followed by ICPOES detection								
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction								
		@ < 35°C	followed by ICPOES detection								
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by								
		@ < 35°C	aqua regia digestion followed by ICPMS detection								
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion								
		@ < 35°C	followed by ICPOES detection								
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction								
		@ < 35°C	followed by colorimetric detection								
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by								
			hexane/acetone extraction followed by GCMS detection								
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using								
			pH probe.								
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection								
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-								
			contractor.								
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on								
			oven drying gravimetric analysis (% based upon wet weight)								
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil								
			with GCFID detection including quantitation of Aromatic and								
			Aliphatic fractions.								
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid								
		@ < 35°C	digestion followed by high temperature combustion and IR								
			detection								

#### **Generic Notes**

#### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table. All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

#### Waters Analysis

Unless stated otherwise results are expressed as mg/l NiI: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

#### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

#### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

#### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

#### Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

#### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 In Morpeth To Felton & Alnwick
Report Number :	S19_1729

Note: major constituent in upper case

Lab ID Number	Client ID	Description
CL/1928691	TP/17/01 ES 2 0.20	Brown Stone SILT
CL/1928692	TP/17/08 ES 4 0.40	Brown Stone SILT
CL/1928693	TP/17/09A ES 2 0.20	Brown Stone SILT
CL/1928694	TP/17/38 ES 5 0.50	Brown Stone SILT
CL/1928695	TP/17/39 ES 4 0.60	Brown Stone SILT

## **TEST REPORT**



## Report No. EFS/191730 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

#### Site: A8013-18 A1 In Morpeth To Felton & ALnwick

The 2 samples described in this report were registered for analysis by SOCOTEC UK Limited on 23-Oct-2018. This report supersedes any versions previously issued by the laboratory.

The analysis was completed by: 02-Nov-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6)
Subcontracted Analysis Reports (Pages 7 to 8)
The accreditation status of subcontracted analysis is
displayed on the appended subcontracted analysis reports.
Analytical and Deviating Sample Overview (Pages 9 to 10)
Table of Method Descriptions (Page 11)
Table of Report Notes (Page 12)
Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham Operations Manager Energy & Waste Services

Date of Issue: 02-Nov-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

Units : Method Codes :			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Method Reporting Limits :			10	10	20	20	10	10	30	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	UKAS Ad	credited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO	GRO (>C5 - C6)	GRO (>C7 - C8)	GRO (>C8 - C10)	GRO (C5-C6 Aliphatic)	GRO (C6-C7 Aliphatic)	GRO (C6-C7)	GRO (C7-C8 Aliphatic)
1928696	BH/17/12 ES 3 0.60	27-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<20.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
1928697	TP/17/14 ES 2 0.20	27-Sep-18	< 10.0	< 10.0	< 20.0	< 20.0	< 10.0	< 10.0	< 30.0	<22.3	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200
																		-
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					1							1					1	
SOCOTEC 🤇			Client N	Client Name SOCOTEC UK Doncaster								Sample Analysis						
Prothy Duninger Dark Activ Dard			Contact										Data Brintad				4	
Bretoy Business Park, Asnby Road											Date Fill	Date Printed 02-Nov-2				-		
Burton-on- I rent, Stattordshire, DE15 0YZ			A8013-18 A1 In Morpeth To Felton & ALnwick								Report N	Report Number EFS/1917			-5/191/30	-		
Tel +44 (0) 1283 554400											Table Nu	Table Number   1				-		
Fax +44 (0) 1283 554422																		

Units : Method Codes :			mg/kg GROHSA	mg/kg ICPACIDS	mg/kg ICPBOR	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS	mg/kg ICPMSS						
	Method Reporting Limits :			20	0.5	0.1	0.3	0.1	0.5	0.5	0.5	1	0.1	0.5	0.5	0.5	0.6	3
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	GRO (C8-C10 Aliphatic)	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)
1928696	BH/17/12 ES 3 0.60	27-Sep-18	< 0.200	618	1.1	0.7	6.7	0.27	20.6	25.8	25.5	1308	<0.1	0.6	19.7	<0.5	36.8	59.6
1928697	TP/17/14 ES 2 0.20	27-Sep-18	< 0.200	446	0.9	0.4	6.5	0.18	22.3	16.9	19.7	658.2	<0.1	0.7	14.9	<0.5	32.7	47.4
																		<u> </u>
				Client Name SOCOTEC UK Doncaster								Sample Analysis						
Bretby Business Park, Ashby Road					<u>+</u>							Date Printed 02-N				2-Nov-2018		
Burton-on-Trent, Staffordshire, DE15 0YZ												Report N	Report Number F			FS/191730		
Tel +44 (0) 1283 554400			A80	A8013-18 A1 In Morpeth To Felton & ALnwick								Table N	Table Number			1		
Fax +44 (0) 1283 554422			• Table Number 1															
	Units Method Codes			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
-------------------	---	-------------	---------------------	------------	--------------------	--------------	--------------	----------------	------------	--------------------	----------------	----------------------	--------------------	----------------------	--------------	-------------------------	--------------	----------
	Method Reporti	na Limits :	0.5	0.1	36		0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	UKAS A	ccredited :	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Barium.	Beryllium.	Iron	Chromium vi:	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(ah)anthracene	Fluoranthene	Fluorene
1928696	BH/17/12 ES 3 0.60	27-Sep-18	106	0.668	38600	<0.1	< 0.08	< 0.08	< 0.08	0.14	0.12	0.18	0.08	< 0.08	0.13	< 0.08	0.28	< 0.08
	TP/17/14 ES 2 0.20	27-Sep-18		0.455	30500	<0.1	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
	SOCOTEC C Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ	1	Client N Contact	ame	SOCOT Neil Cook		Doncaste	r				Date Pri	Sam	ple Ana	alysis 02	2-Nov-2018 FS/191730		1
	Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		A80	13-18	A1 Ir	n Mor	peth 1	ro Fel	ton &		wick	Table Nu	Imber		E	1		

	Meth	Units : od Codes :	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	mg/kg PAHMSUS	pH Units PHSOIL	mg/kg SFAPI	mg/kg SFAPI	mg/kg SFAPI	Sub020	% TMSS	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI	mg/kg TPHUSSI
	Method Reporti	ng Limits :	0.08	0.08	0.08	0.08	1.28		0.5	0.5	0.5		0.1	4	4	4	8.75	4
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LAB ID Number CL/	Client Sample Description	Sample Date	Indeno(123-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	pH units (AR)	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10
1928696	BH/17/12 ES 3 0.60	27-Sep-18	0.10	< 0.08	0.19	0.19	< 1.98	7.6	<0.5	<0.5	<0.5	NADIS	17.3	< 4.20	< 4.20	< 4.20	< 9.20	< 4.20
	TP/17/14 ES 2 0.20	27-Sep-18	< 0.08	< 0.08	< 0.08	< 0.08	< 1.28		<0.5		<0.5	NADIS	9.3	< 4.16	< 4.16	< 4.16	< 9.11	< 4.16
			Client N	ame	SOCOT	EC UK E	Doncaste	r					Sam	ple Ana	alysis			
			Contact		Neil Cook	æ								1				
	Bretby Business Park, Ashby Road											Date Pri	nted		02	2-Nov-2018	]	
	Burton-on-Trent, Staffordshire, DE15 0YZ		780	12_12	A1 In	Mor	noth 7		ton 8		wick	Report N	lumber		E	FS/191730		
	Tel +44 (0) 1283 554400			13-10			petiti	U Fel				Table Nu	umber			1		
	Fax +44 (0) 1283 554422																	

	Un			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	% M/M				
	Meth	od Codes :	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	TPHUSSI	WSLM59				
	Method Reporti	ng Limits :	20	4	4	4	8.75	4	20	0.02				
	UKAS A	ccredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
LAB ID Number CL/	Client Sample Description	Sample Date	TPH Ali Band ≻C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Total Organic Carbon				
1928696	BH/17/12 ES 3 0.60	27-Sep-18	< 21.0	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.78				
1928697	TP/17/14 ES 2 0.20	27-Sep-18	< 20.8	< 4.00	< 4.00	< 4.00	< 8.76	< 4.00	< 20.0	1.32				
5				ame			oncaste	r				Sam	ple Analysis	
Б	Brothy Business Bork, Ashby Bood											Date Printed	02-Nov-2019	
	Bretby Business Park, Ashby Road											Report Number	U2-110V-2010 EEQ/101720	
	Burton-on-Trent, Staffordshire, DE15 0YZ		<b>A80</b>	13-18	A1 Ir	n Mori	peth 1	「o Fel	ton &	، ALn	wick		EF3/191/30	
	Tel +44 (0) 1283 554400					•								
1	rax +44 (0) 1283 554422		1											



# CERTIFICATE OF ANALYSIS

ANALYSIS REQUESTED BY: SOCOTEC UK Ltd **Environmental Chemistry PO Box 100** Burton upon Trent Staffordshire **DE15 0XD** 

CONTRACT NO: S01856-3 DATE OF ISSUE: 01 11 18

DATE SAMPLES RECEIVED: 25.10.18

DATE SAMPLES ANALYSED: 01.11.18

SAMPLE DESCRIPTION: Two soil/loose aggregate samples.

ANALYSIS REQUESTED: Qualitative analysis of samples for determination of presence/type of asbestos.

### METHODS:

Our method involves initial examination of the samples followed by detailed analysis of representative sub-samples. The sub-samples are analysed qualitatively for asbestos by polarised light and dispersion staining as described by the Health and Safety Executive in HSG 248.

### **RESULTS:**

### Initial Screening

www.iom-world.org

No asbestos was detected in either of the soil samples by stereo-binocular and polarised light microscopy.

A summary of the results is given in Table 1.

### Page 1 of 2



Registered Address: Research Avenue North, Riccarton, Edinburgh, EH14 4AP, United Kingdom Tel: 0131 449 8000 Fax: 0131 449 8084 Email: iom@iom-world.org

IOM CONSULTING LIMITED, registered in Scotland No. SC205670



CONTRACT NO: S01856-3 DATE OF ISSUE: 01.11.18

**RESULTS: (cont.)** 

### Table 1: Qualitative Results

### SOCOTEC Job I.D: S191730

IOM sample number	Client sample number	ACM type detected	PLM result
S61606	S1928696 BH/17/12 0.60	-	No Asbestos Detected
S61607	S1928697 TP/17/14 0.20	-	No Asbestos Detected

Our detection limit for this method is 0.001%.

# COMMENTS:

IOM Consulting cannot accept responsibility for samples that have been incorrectly collected or despatched by external clients.

Any opinions and interpretations expressed herein are outwith the scope of our UKAS accreditation.



AUTHORISED BY:

D Third Scientific Technician

# Sample Analysis

CL/1928696

CL/1928697

BH/17/12 0.60

TP/17/14 0.20

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

S191730

PHSOIL

pH units (AR)

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KONECR PAHMSUS

Beryllium. lron

> ✓ ✓

✓ ✓

PAH (16) by GCMS Chromium vi:

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Customer	SOCOTEC UK Doncast	er					Con	signm	nent N	lo S7	8767											
Site	A8013-18 A1 In Morpet	h To Felton	& AL	.nwie	ck		Date	Log	ged 2	3-Oct	-2018											
Report No	S191730						In-H	ouse	Repo	rt Du	e 26-0	Oct-20	)18									
Please note the re	sults for any subcontracted ana	alysis (identified	with a	a '^') i	s likel	y to ta	ake u	to a	n add	itiona	l five	worki	ng da	ys.								_
		MethodID	BTEXHSA	CALC_CR3	CustServ	GROHSA	ICPACIDS	ICPBOR	ICPMSS													ICPSOIL
ID Number	Description	Sampled	MTBE (µg/kg)	Chromium (III)	REPORT A	GRO (AA) by HSA GC-FID	SO4 (acid sol)	Boron (H20 Soluble)	Antimony (MS)	Arsenic (MS)	Cadmium (MS)	Chromium (MS)	Copper (MS)	Lead (MS)	Manganese (MS)	Mercury (MS)	Molybdenum (MS)	Nickel (MS)	Selenium (MS)	Vanadium (MS)	Zinc (MS)	Barium.

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27/09/18

27/09/18

Note: We will endeavour to prioritise samples to complete analysis within	De	viating Sample Key
holding time; however any delay could result in samples becoming	A	The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	В	The sample was received without the correct preservation for this analysis
	С	Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D	The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E	Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F	Sample processing did not commence within the appropriate handling time
	Re	quested Analysis Key
		Analysis Required
		Analysis dependant upon trigger result - Note: due date may be affected if triggered
		No analysis scheduled
	^	Analysis Subcontracted - Note: due date may vary

# **Sample Analysis**

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

S191730

Customer SOCOTEC UK Doncaster Site A8013-18 A1 In Morpeth To Felton & ALnwick S191730 **Report No** 

Consignment No S78767 Date Logged 23-Oct-2018

In-House Report Due 26-Oct-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

		MethodID	SFAPI			Sub020	TMSS	TPHUSSI													WSLM59	
ID Number	Description	Sampled	Cyanide(Free) (AR)	Cyanide(Total) (AR)	Phenol Index.(AR)	^Asbestos ID (Stage 1)	Tot.Moisture @ 105C	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	TPH by GCFID (AR/Si)	Total Organic Carbon	
			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CL/1928696	BH/17/12 0.60	27/09/18	Ε	Е	Ε		Е	E	Ε	Е	Ε	E	E	E	Е	E	Е	Е	E	Е		
CL/1928697	TP/17/14 0.20	27/09/18	E	E	E		E	E	E	Е	E	E	E	E	E	E	Е	Е	E	E		

Note: We will endeavour to prioritise samples to complete analysis within	Deviating Sample Key
holding time; however any delay could result in samples becoming	A The sample was received in an inappropriate container for this analysis
deviant whilst being processed in the laboratory.	B The sample was received without the correct preservation for this analysis
	C Headspace present in the sample container
If sampling dates are missing or matrices unclassified then results will	D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
not be ISO 17025 accredited. Please contact us as soon as possible to	E Sample processing did not commence within the appropriate holding time
provide missing information in order to reinstate accreditation.	F Sample processing did not commence within the appropriate handling time
	Requested Analysis Key
	Analysis Required
	Analysis dependant upon trigger result - Note: due date may be affected if triggered
	No analysis scheduled
	Analysis Subcontracted - Note: due date may vary

Where individual results are flagged see report notes for status. Page 10 of 12 he integrity of data for samples/analysis that have been categorised as Deviating may be compromised. Data may not be representative of the sample at the time of sampling. EFS/191730 Ver. 1

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Soil	BTEXHSA	As Received	Determination of Benzene, Toluene, Ethyl benzene and Xylenes
			(BTEX) by Headspace GCFID
Soil	CALC_CR3	Oven Dried	Calculated from the difference between Total Chromium and
		@ < 35°C	Hexavalent Chromium
Soil	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace GCFID
Soil	ICPACIDS	Oven Dried	Determination of Total Sulphate in soil samples by Hydrochloric
		@ < 35°C	Acid extraction followed by ICPOES detection
Soil	ICPBOR	Oven Dried	Determination of Boron in soil samples by hot water extraction
		@ < 35°C	followed by ICPOES detection
Soil	ICPMSS	Oven Dried	Determination of Metals in Marine Sediments and Soil samples by
		@ < 35°C	aqua regia digestion followed by ICPMS detection
Soil	ICPSOIL	Oven Dried	Determination of Metals in soil samples by aqua regia digestion
		@ < 35°C	followed by ICPOES detection
Soil	KONECR	Oven Dried	Determination of Chromium vi in soil samples by water extraction
		@ < 35°C	followed by colorimetric detection
Soil	PAHMSUS	As Received	Determination of Polycyclic Aromatic Hydrocarbons (PAH) by
			hexane/acetone extraction followed by GCMS detection
Soil	PHSOIL	As Received	Determination of pH of 2.5:1 deionised water to soil extracts using
			pH probe.
Soil	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Soil	SubCon*	*	Contact Laboratory for details of the methodology used by the sub-
			contractor.
Soil	TMSS	As Received	Determination of the Total Moisture content at 105°C by loss on
			oven drying gravimetric analysis (% based upon wet weight)
Soil	TPHUSSI	As Received	Determination of hexane/acetone extractable Hydrocarbons in soil
			with GCFID detection including quantitation of Aromatic and
			Aliphatic fractions.
Soil	WSLM59	Oven Dried	Determination of Organic Carbon in soil using sulphurous Acid
		@ < 35°C	digestion followed by high temperature combustion and IR
			detection

# **Generic Notes**

### Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
   All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity.
- Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

### Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

### Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

### Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/I

### **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

# Symbol Reference

^ Sub-contracted analysis.

**\$\$** Unable to analyse due to the nature of the sample

- ¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.
- This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

NS Information Not Supplied

Req Analysis requested, see attached sheets for results

**P** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

### Sample Descriptions

Client : SOCOTEC UK Doncaster Site : A8013-18 A1 In Morpeth To Felton & ALnwick S19\_1730

Report Number :

Note: major constituent in upper case

Lah ID Number	Client ID	Description
		Drown Office - Off T
CL/1928696	BH/17/12 ES 3 0.60	Brown Stone SILI
CL/1928697	TP/17/14 ES 2 0.20	Brown Stone SILI

# **TEST REPORT**



# Report No. EXR/274297 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

### Site: A8013-18 A1 Alnwick to Ellingham

The 6 samples described in this report were registered for analysis by SOCOTEC UK Limited on 28-Nov-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 20-Dec-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6) Analytical and Deviating Sample Overview (Pages 7 to 9) Table of Additional Report Notes (Page 10) Table of Method Descriptions (Page 11) Table of Report Notes (Page 12) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Lim Becky Batham

m Operations Manager Energy & Waste Services

Date of Issue: 20-Dec-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

		Units : Method Codes :	µg/l BTEXHSA	mg/l Calc_CR3	mg/l CALCNH4	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA	mg/l GROHSA						
	Method	Reporting Limits :	5	5	10	10	5	5	15	0.003	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		UKAS Accredited :	Yes	Yes	No	No	No	No	No	No	No							
LAB ID Number EX/	Client Sample Description	Sample Date	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	Ammoniacal Nitrogen as NH4	GRO >C5->C6	GRO >C5->C6 Aliphatic	GRO >C6->C7	GRO >C6->C7 Aliphatic	GRO >C7->C8	GRO >C7->C8 Aliphatic	GRO >C8->C10
1935304	A1-BH/17/13 W 231118 5.00	23-Nov-18 10:30	< 5.0	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.106	0.32	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935305	BH/17/14 W 231118 3.00	23-Nov-18 11:30	< 5.0	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.202	1.3	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935306	BH/17/02 W 231118 4.00	23-Nov-18 12:30	< 5.0	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.167	0.04	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935307	BH/17/01 W 231118 4.00	23-Nov-18 12:30	< 5.0	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.194	0.04	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935308	BH/17/04 W 231118 5.00	23-Nov-18 12:30	< 5.0	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.143	0.26	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935309	BH/17/03 W 231118 5.00	< 5.0	< 10.0*	< 10.0	< 5.0	< 5.0	< 15.0*	>0.042	0.51	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100		
	SOCOTEC 🤇		Client N	ame	SOCOT	TEC UK D	oncaste	r					Sam	ple Ana	alysis			
			Contact		Neil Cook	(e								1				
	Bretby Business Park, Ashby Road										Date Pri	nted		20	)-Dec-2018			
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	Tel +44 (0) 1283 554400			AOU	13-10				-mig	an		Table Nu	umber			1		
	Fax +44 (0) 1283 554422																	

<u> </u>		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		Method Codes :	GROHSA	GROHSA	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSW	ICPMSWT	ICPWATVAR	ICPWATVAR	ICPWATVAR	ICPWATVA
	Method	d Reporting Limits :	0.1	0.1	0.001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.002	0.001	0.01	0.01	0.01	0.01
		UKAS Accredited :	INO	res	res	res	res	res	res	res	res	res	res	res	res	INO	res	res
LAB ID Number EX/	Client Sample Description	Sample Date	GRO >C8->C10 Aliphatic	GRO-HSA o	Antimony as Sb (Dissolved)	Arsenic as As (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Mercury as Hg (Dissolved)	Molybdenum as Mo (Dissolved)	Nickel as Ni (Dissolved)	Selenium as Se (Dissolved)	Zinc as Zn (Dissolved)	Chromium as Cr (Total)	Barium as Ba (Dissolved) a	Beryllium as Be (Dissolved) a	Boron as B (Dissolved) a	Cadmium as CD (Dissolved) a
1935304	A1-BH/17/13 W 231118 5.00	23-Nov-18 10:30	< 0.100*	< 0.100	<0.001	0.001	0.003	0.003	<0.0001	0.001	0.007	<0.001	0.024	0.109	0.21	<0.01	0.03	<0.01
1935305	BH/17/14 W 231118 3.00	23-Nov-18 11:30	< 0.100*	< 0.100	<0.001	0.005	<0.001	<0.001	<0.0001	0.009	0.005	<0.001	<0.002	0.205	0.3	<0.01	0.05	<0.01
1935306	BH/17/02 W 231118 4.00	23-Nov-18 12:30	< 0.100*	< 0.100	<0.001	0.003	<0.001	<0.001	<0.0001	0.005	0.001	<0.001	<0.002	0.17	0.14	<0.01	0.04	<0.01
1935307	BH/17/01 W 231118 4.00	23-Nov-18 12:30	< 0.100*	< 0.100	<0.001	0.002	0.002	0.014	<0.0001	0.004	0.013	<0.001	0.055	0.197	0.45	<0.01	0.04	<0.01
1935308	BH/17/04 W 231118 5.00	23-Nov-18 12:30	< 0.100*	< 0.100	<0.001	<0.001	<0.001	<0.001	<0.0001	0.002	0.002	<0.001	0.027	0.146	0.17	<0.01	0.03	<0.01
1935309	BH/17/03 W 231118 5.00 23-Nov-18 12:30 < 0.100*			< 0.100	<0.001	<0.001	0.007	0.002	<0.0001	0.001	0.007	0.001	0.182	0.045	0.1	<0.01	0.03	<0.01
	SOCOTEC 🤇		Client N Contact	ame			Doncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Asbby Road		Jonaol									Date Pri	nted		20	)-Dec-2019		
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	Durton-on-Trent, StanordShire, DE15 UYZ			A80	13-18	3 A1 A	Inwic	k to E	Ellina	ham		Report N			E	AR/2/429/		
	rer +44 (0) 1283 554400											I able Nu	Imper			1		
	Fax +44 (0) 1283 554422											1						

1		Units :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µq/l	µg/l	µq/l	µg/l	µg/l	µq/l	µq/l	µg/l
		Method Codes :	ICPWATVAR	ICPWATVAR		ICPWATVART	KONENS	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method	Reporting Limits :	1	1	3	3	0.01	1	0.003	0.2	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		UKAS Accredited :	res	res	res	res	res	res	res	res	res	res	res	res	res	res	res	res
LAB ID Number EX/	Client Sample Description	Sample Date	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Total Sulphur as SO4 (Dissolved) a	Total Sulphur as SO4 (Total) a	Ammoniacal Nitrogen as N	Chloride as CI w	Chromium VI as Cr	Nitrate as N	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene
1935304	A1-BH/17/13 W 231118 5.00	23-Nov-18 10:30	142	23	60	87	0.25	35	<0.003	<0.2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1935305	BH/17/14 W 231118 3.00	23-Nov-18 11:30	66	14	132	494	1.0	28	<0.003	<0.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1935306	BH/17/02 W 231118 4.00	23-Nov-18 12:30	62	15	90	159	0.03	68	<0.003	<0.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
1935307	BH/17/01 W 231118 4.00	23-Nov-18 12:30	113	21	28	117	0.03	28	<0.003	<0.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
1935308	BH/17/04 W 231118 5.00	23-Nov-18 12:30	107	17	48	52	0.2	36	<0.003	<0.2	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1935309	BH/17/03 W 231118 5.00	23-Nov-18 12:30	185	36	109	114	0.4	18	<0.003	8.3	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1333309       DH/1/03 W 231116 3.00       2340016 12.30       163       300       109       114       0.4       16       <0.003																		
	SOCOTEC C Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554420 Fax +44 (0) 1283 554422		Client N Contact	<sup>ame</sup> A80	soco1 Neil Cook	REC UK D	oncaste	r k to E	Elling	ham		Date Pri Report N Table Nu	Sam nted Number umber	ple Ana	alysis 20 E	0-Dec-2018 XR/274297 1		

		Units : Method Codes :	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	µg/l PAHMSW	mg/l PHEHPLCVL	mg/l PHEHPLCVL	mg/l PHEHPLCVL	mg/l PHEHPLCVL	mg/l SEAPI	mg/l SEAPI	mg/l SEAS
	Method	Reporting Limits :	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02
		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes
LAB ID Number EX/	Client Sample Description	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S
1935304	A1-BH/17/13 W 231118 5.00	23-Nov-18 10:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0009	<0.0005	<0.02	<0.02	<0.02
1935305	BH/17/14 W 231118 3.00	23-Nov-18 11:30	< 0.10	< 0.10	0.13	0.10	< 0.10	0.28	0.56	0.14	< 2.32	<0.0005	<0.0005	<0.0009	<0.0005	<0.02	0.08	4.86
1935306	BH/17/02 W 231118 4.00	23-Nov-18 12:30	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.64	<0.0005	<0.0005	<0.0009	<0.0005	<0.02	0.03	5.58
1935307	BH/17/01 W 231118 4.00	23-Nov-18 12:30	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.64	<0.0005	<0.0005	<0.0009	<0.0005	<0.02	0.02	0.63
1935308	BH/17/04 W 231118 5.00	23-Nov-18 12:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	<0.0009	<0.0005	<0.02	0.03	0.26
1935309	BH/17/03 W 231118 5.00	23-Nov-18 12:30	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.16	<0.0005	<0.0005	0.0012	<0.0005	<0.02	0.02	<0.02
-																		
			Client N	lame	SOCO Neil Cool		Doncaste	r					Sam	ple Ana	lysis			
	Bretby Business Park, Ashby Road		Contact									Date Pri	nted	1	20	-Dec-2018		
	Rurton-on-Trent Staffordshire DE15.0V7											Date Fill	lumbor		20	DCC-2010		
				A80	13-18	3 A1 A	Inwic	k to E	Ellina	ham		Table N			E7	4		
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	Fax +44 (0) 1283 554422																	

<b></b>		Units :	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	ma/l	uS/cm	pH units	pH units
		Method Codes :	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	WSLM13	WSLM2	WSLM3	WSLM56
	Method	Reporting Limits :	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.2	100		
-		UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band >C10-C12	TPH Ali Band >C12-C16	TPH Ali Band >C16-C21	TPH Ali Band >C21-C35	TPH Ali Band ≻C8-C10	TPH Ali Band ≻C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band ⊳C8-C10	TPH Aro Band ⊳C8-C40	Dissolved Organic Carbon w	Conductivity uS/cm @ 25C w	pH units w	pH units (BS1377) w
1935304	A1-BH/17/13 W 231118 5.00	23-Nov-18 10:30	< 0.010	< 0.010*	0.014	0.115	< 0.010	0.224	< 0.010	< 0.010*	< 0.010	0.025*	< 0.010	0.046	2.4	840	7.5	7.5
1935305	BH/17/14 W 231118 3.00	23-Nov-18 11:30	< 0.100	< 0.100*	0.157	1.27	< 0.100	2.16	< 0.100	< 0.100*	< 0.100	0.293*	< 0.100	0.409	10	1060	7.7	7.9
1935306	BH/17/02 W 231118 4.00	23-Nov-18 12:30	< 0.040	< 0.040*	0.053	0.444	< 0.040	0.867	< 0.040	< 0.040*	< 0.040	0.106*	< 0.040	0.222	3.0	977	7.9	8.0
1935307	BH/17/01 W 231118 4.00	23-Nov-18 12:30	< 0.040	< 0.040*	0.054	0.474	< 0.040	0.889	< 0.040	< 0.040*	< 0.040	0.117*	< 0.040	0.194	8.1	809	7.8	7.9
1935308	BH/17/04 W 231118 5.00	23-Nov-18 12:30	< 0.010	< 0.010*	< 0.010	0.068	< 0.010	0.117	< 0.010	< 0.010*	< 0.010	0.019*	< 0.010	0.034	1.1	654	7.5	7.7
1935309	BH/17/03 W 231118 5.00	23-Nov-18 12:30	< 0.010	< 0.010*	0.010	0.070	< 0.010	0.149	< 0.010	< 0.010*	< 0.010	0.026*	< 0.010	0.044	3.0	1030	7.1	7.4
			-															
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	SOCOTEC		Client N Contact	lame	SOCO Neil Cook	FEC UK E	)oncastei	r	1		1	Date Pri	Sam	ple Ana	alysis 20	)-Dec-2018		
	Burton-on-Trent Staffordshire DE15.0V7											Date Pli	lumbor		20 E1	D/27/207		
	Tel + 44 (0) 4000 554400			A80	13-18	3 A1 A	Inwic	k to E	Ellina	ham		Takla	umber		E)	AR/2/429/		
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	Fax +44 (0) 1283 554422																	

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

### W274297

# SOCOTEC UK Doncaster

A8013-18 A1 Alnwick to Ellingham Site

**Report No** 

Customer

W274297

Consignment No W146839 Date Logged 28-Nov-2018 In-House Report Due 05-Dec-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

			MethodID	BTEXHSA	Calc_CR3	CALCNH4	CUSTSERV	GROHSA	ICPMSW									ICPMSWT	ICPWATVAR		
ID Number	Description	Matrix Type	Sampled	BTEX-HSA + MTBE analysis	Chromium (III) (CALC)	Ammoniacal Nitrogen as NH4 Calc	Report A	GRO-HSA GCFID (AA)	Nickel as Ni MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Molybdenum as Mo MS (Dissolved)	Antimony as Sb MS (Dissolved)	Chromium as Cr MS (Total)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	Magnesium as Mg (Dissolved) VAR
	-	-		✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EX/1935304	A1-BH/17/13 5.00	Groundwater	23/11/18																		
EX/1935305	BH/17/14 3.00	Groundwater	23/11/18																		
EX/1935306	BH/17/02 4.00	Groundwater	23/11/18																		
EX/1935307	BH/17/01 4.00	Groundwater	23/11/18																		
EX/1935308	BH/17/04 5.00	Groundwater	23/11/18																		
EX/1935309	BH/17/03 5.00	Groundwater	23/11/18																		

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

- А The sample was received in an inappropriate container for this analysis
- В The sample was received without the correct preservation for this analysis
- С Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
- Е Sample processing did not commence within the appropriate holding time
- Sample processing did not commence within the appropriate handling time

### Requested Analysis Key

Analysis Required Analysis dependant upon trigger result - Note: due date may be affected if triggered No analysis scheduled Analysis Subcontracted - Note: due date may vary

# SOCOTEC UK Ltd Environmental Chemistry **Analytical and Deviating Sample Overview**

# W274297

#### SOCOTEC UK Doncaster Customer A8013-18 A1 Alnwick to Ellingham Site

Consignment No W146839 Date Logged 28-Nov-2018

W274297

**Report No** 

In-House Report Due 05-Dec-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

			MethodID	ICPWATVAR				ICPWATVART	KONENS				PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13	WSLM2	WSLM3	WSLM56
ID Number	Description	Matrix Type	Sampled	Barium as Ba (Dissolved) VAR	Cadmium as Cd (Dissolved) VAR	Boron as B (Dissolved) VAR	Beryllium as Be (Dissolved) VAR	Total Sulphur as SO4 (Tot) VAR	Chloride as Cl (Kone)	Ammoniacal Nitrogen (Kone)	Nitrate as N (Kone calc)	Chromium VI. as Cr (Kone)	PAH GC-MS (16)	Phenols by HPLC (Low Level)	Cyanide (Free) as CN SFA	Cyanide (Total) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	<b>Dissolved Organic Carbon</b>	Conductivity uS/cm @ 25C	pH units	pH units (BS1377)
				✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	
EX/1935304	A1-BH/17/13 5.00	Groundwater	23/11/18																			Е
EX/1935305	BH/17/14 3.00	Groundwater	23/11/18																			Е
EX/1935306	BH/17/02 4.00	Groundwater	23/11/18																			Е
EX/1935307	BH/17/01 4.00	Groundwater	23/11/18																			E
EX/1935308	BH/17/04 5.00	Groundwater	23/11/18																			Е
EX/1935309	BH/17/03 5.00	Groundwater	23/11/18																			Е

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

- А The sample was received in an inappropriate container for this analysis
- В The sample was received without the correct preservation for this analysis
- С Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised - applicable to all analysis
- Е Sample processing did not commence within the appropriate holding time
- Sample processing did not commence within the appropriate handling time

### Requested Analysis Key

Analysis Required Analysis dependant upon trigger result - Note: due date may be affected if triggered No analysis scheduled Analysis Subcontracted - Note: due date may vary

# Sample Analysis

# SOCOTEC UK Ltd Environmental Chemistry

# **Analytical and Deviating Sample Overview**

W274297

# CustomerSOCOTEC UK DoncasterSiteA8013-18 A1 Alnwick to EllinghamReport NoW274297

Consignment No W146839 Date Logged 28-Nov-2018 In-House Report Due 05-Dec-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

			MethodID	WSLM56
ID Number	Description	Matrix Type	Sampled	pH units (BS1377)
EX/1935304	A1-BH/17/13 5.00	Groundwater	23/11/18	EF
EX/1935305	BH/17/14 3.00	Groundwater	23/11/18	EF
EX/1935306	BH/17/02 4.00	Groundwater	23/11/18	EF
EX/1935307	BH/17/01 4.00	Groundwater	23/11/18	EF
EX/1935308	BH/17/04 5.00	Groundwater	23/11/18	EF
EX/1935309	BH/17/03 5.00	Groundwater	23/11/18	EF

Note: We will endeavour to prioritise samples to complete analysis within holding time; however	Deviating Sample Key
any delay could result in samples becoming deviant whilst being processed in the laboratory.	A The sample was received in an inappropriate container for this analysis
If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.	<ul> <li>B The sample was received without the correct preservation for this analysis</li> <li>C Headspace present in the sample container</li> <li>D The sampling date was not supplied so holding time may be compromised - applicable to all analysis</li> <li>E Sample processing did not commence within the appropriate holding time</li> <li>F Sample processing did not commence within the appropriate handling time</li> </ul>
	Requested Analysis Key
	Analysis Required     Analysis dependant upon trigger result - Note: due date may be affected if triggered     No analysis scheduled     Analysis Subcontracted - Note: due date may vary

# **Additional Report Notes**

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
BTEXHSA	EX1935304 TO EX1935309	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (M/P xylenes) . These circumstances should be taken into consideration when utilising the data.
PAHMSW	EX1935305- EX1935307	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted to improve the signal to noise ratio but in doing so, the detection limit for this test has been elevated.
TPHFID-Si	EX1935304 TO EX1935309	The Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation, where applicable, from the affected analytes (C21-C35) on the aromatic fraction. These circumstances should be taken into consideration when utilising the data
TPHFID-Si	EX1935304 TO EX1935309	The Secondary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with one or more target analytes falling outside acceptable limits. However the remaining data gives the Laboratory confidence that the test has performed satisfactorily (including the Primary Process Control) and that the validity of the data may not have been significantly affected. However in line with our QMS policy we have removed accreditation , where applicable, from the affected analytes (C12-C16) for the aliphatic and aromatic fraction. These circumstances should be taken into consideration when utilising the data
PHEHPLCVL	EX1935304 TO EX1935309	The Primary process control Blank Sample associated with the results for this test has been contaminated during the Laboratory process. As we have insufficient sample to repeat, the laboratory believes that the validity of the data has not been affected however the reportable detection limit for Phenol has been elevated to take this into account

# **Method Descriptions**

Matrix	MethodID	Analysis	Method Description
		Basis	
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	Calc_CR3	As Received	Calculation of Chromium III from Total Chromium and Chromium
			VI
Water	CALCNH4	As Received	Ammoniacal Nitrogen expressed as NH4, calculated from
			Ammoniacal Nitrogen expressed as N
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons
			(GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using
			ICPMS
Water	ICPMSWT	As Received	Determination of Total Metals in water samples using nitric acid
			digestion and ICPMS quantitation
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using
			ICPOES
Water	ICPWATVART	As Received	Determination of Total Metals in water samples using nitric acid
			digestion and ICPOES quantitation
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane
			extraction GCMS quantitation
Water	PHEHPLCVL	As Received	Determination of Phenols by HPLC
Water	SFAPI	As Received	Segmented flow analysis with colorimetric detection
Water	SFAS	As Received	Determination of Sulphide by segmented flow analysis with
			colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in
			water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non-
			dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity (µS/cm) by electrical
			conductivity probe.
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe
Water	WSLM56	As Received	Determination of the pH of water samples by pH probe

# **Report Notes**

# **Generic Notes**

# Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

## Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

## Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

# Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

## **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

# Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

**NS** Information Not Supplied

 $\ensuremath{\text{Req}}$  Analysis requested, see attached sheets for results

**Þ** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

### Sample Descriptions

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick to Ellingham
Report Number :	W27_4297

Client ID Description Lab ID Number A1-BH/17/13 W 231118 5.00 BH/17/14 W 231118 3.00 BH/17/02 W 231118 4.00 EX/1935304 Groundwater EX/1935305 EX/1935306 Groundwater Groundwater BH/17/01 W 231118 4.00 BH/17/04 W 231118 5.00 EX/1935307 EX/1935308 Groundwater Groundwater Groundwater EX/1935309 BH/17/03 W 231118 5.00

# **TEST REPORT**



# Report No. EXR/274392 (Ver. 1)

SOCOTEC UK Doncaster Askern Road Carcroft Doncaster South Yorkshire DN6 8DG

### Site: A8013-18 A1 Alnwick to Ellingham

The 3 samples described in this report were registered for analysis by SOCOTEC UK Limited on 28-Nov-2018. This report supersedes any versions previously issued by the laboratory. The analysis was completed by: 19-Dec-2018

Tests where the accreditation is set to N or No, and any individual data items marked with a \* are not UKAS accredited. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

The following tables are contained in this report:

Table 1 Main Analysis Results (Pages 2 to 6) Analytical and Deviating Sample Overview (Pages 7 to 8) Table of Additional Report Notes (Page 9) Table of Method Descriptions (Page 10) Table of Report Notes (Page 11) Table of Sample Descriptions (Appendix A Page 1 of 1)

On behalf of SOCOTEC UK Li Becky Batham Operations Manager Energy & Waste Services

Date of Issue: 19-Dec-2018

Tests marked '^' have been subcontracted to another laboratory.

Where samples have been flagged as deviant on the Analytical and Deviating Sample Overview, for any reason, the data may not be representative of the sample at the point of sampling and the validity of the data may be affected. SOCOTEC UK Limited accepts no responsibility for any sampling not carried out by our personnel.

	Units :	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Method Codes : Method Reporting Limits	BTEXHSA 5	BTEXHSA 5	BTEXHSA 10	BTEXHSA 10	BTEXHSA 5	BTEXHSA 5	BTEXHSA 15	Calc_CR3	GROHSA 0.1	GROHSA 0.1	GROHSA 0.1	GROHSA 0.1	GROHSA 0.1	GROHSA 0 1	GROHSA 0 1	GROHSA 0.1
	UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
LAB ID Number EX/	ରୁ ଅନୁ Client Sample Description କ ପ୍ରଥ୍ୟ ସେହ	Benzene	Ethyl Benzene	m/p Xylenes	MTBE	o Xylene	Toluene	Xylenes	Chromium (III)	GRO >C5->C6	GRO ⊳C5-⊳C6 Aliphatic	GRO >C6->C7	GRO ⊳C6-⊳C7 Aliphatic	GRO >C7->C8	GRO ⊳C7-≫C8 Aliphatic	GRO >C8->C10	GRO >C8->C10 Aliphatic
1935695	BH/17/06 8.00	< 5.0	< 5.0	< 10.0	< 10.0	< 5.0	< 5.0	< 15.0	<0.003	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
1935696	BH/17/11 7.00	< 5.0	< 5.0	< 10.0	< 10.0	< 5.0	< 5.0	< 15.0	0.052	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
	BH/17/09 5.00		< 5.0			< 5.0	< 5.0	< 15.0		< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100
		Client N Contact	ame	SOCOT	EC UK E	Doncaste	r					Sam	ple Ana	alysis			
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		A80	13-18	5 A1 A	Inwic	k to E	Illing	ham		Date Prin Report N Table Nu	nted lumber ımber		19- E)	Dec-2018 (R/274392 1		

	Units : Method Codes :	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
	Method Reporting Limits :	0.1	0.001	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.002	0.001	0.01	0.01	0.01
	UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
LAB ID Number EX/	Client Sample Description	GRO-HSA o	Antimony as Sb (Dissolved)	Arsenic as As (Dissolved)	Cadmium as Cd (Dissolved)	Chromium as Cr (Dissolved)	Copper as Cu (Dissolved)	Lead as Pb (Dissolved)	Mercury as Hg (Dissolved)	Molybdenum as Mo (Dissolved)	Nickel as Ni (Dissolved)	Selenium as Se (Dissolved)	Zinc as Zn (Dissolved)	Chromium as Cr (Total)	Barium as Ba (Dissolved) a	Beryllium as Be (Dissolved) a	Boron as B (Dissolved) a
1935695	BH/17/06 8.00	< 0.100	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.001	0.0004	0.111	0.002	<0.001	0.075	<0.001	0.08	<0.01	0.15
1935696	BH/17/11 7.00	< 0.100	<0.001	<0.001	0.0003	<0.001	0.005	0.003	<0.0001	0.001	0.005	<0.001	0.036	0.055	0.18	<0.01	0.15
1935697	BH/17/09 5.00	< 0.100	<0.001	0.002	0.0011	<0.001	0.008	0.002	<0.0001	0.018	0.006	0.002	0.034	0.099	3.28	<0.1	<0.1
		Client N Contact	ame	SOCOT	EC UK D	oncaste	r					Sam	ple Ana	alysis			
E	Bretby Business Park, Ashby Road			1							Date Prir	nted		19-1	Dec-2018		
E	Burton-on-Trent, Staffordshire, DE15 0YZ			40.40							Report N	lumber		EX	R/274392		
	Tel +44 (0) 1283 554400		A80	13-18	A1 A	Inwic	k to E	lling	nam		Table Nu	mber			1		
	Fax +44 (0) 1283 554422																

	Units	: mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
	Method Codes		ICPWATVAR	ICPWATVAR	KONENS	KONENS	KONENS	KONENS	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW	PAHMSW
	Method Reporting Limits		1 Ves	3 Ves	0.01 Yes	1 Ves	0.003 Yes	0.2 Ves	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes	0.01 Yes
LAB ID Number EX/	Client Sample Description	Calcium as Ca (Dissolved) a	Magnesium as Mg (Dissolved) a	Total Sulphur as SO4 (Dissolved) a	Ammoniacal Nitrogen as N	Chloride as Cl w	Chromium VI as Cr	Nitrate as N	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Benzo-a-Pyrene	Chrysene
1935695	BH/17/06 8.00	18	5	98	0.12	33	<0.003	<0.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1935696	BH/17/11 7.00	123	38	31	0.18	207	<0.003	<0.2	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
1935697	BH/17/09 5.00	502	86	110	0.09	32	<0.003	0.5	< 0.01	< 0.01	< 0.01	0.02	0.01	< 0.01	< 0.01	< 0.01	< 0.01
S		Client N Contact	ame	SOCOT	EC UK D	Ooncaste	r				Sample Analysis						
E	retby Business Park, Ashby Road										Date Prin	nted		19-	Dec-2018		
E	Burton-on-Trent, Staffordshire, DE15 0YZ			40.40							Report N	lumber		E)	(R/274392		
	Tel +44 (0) 1283 554400		A80	13-18	A1 A	Inwic	k to E	lling	nam		Table Nu	Imber			1		
	Fax +44 (0) 1283 554422																

	Units : Mothed Codes :	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l		mg/l	mg/l		mg/l	mg/l	mg/l	mg/l
	Method Reporting Limits :	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.0005	0.0005	0.0005	0.0005	0.02	0.02	0.02	0.01
	UKAS Accredited :	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes
LAB ID Number EX/	ଓ ଅନୁ Client Sample Description e ଅ ସେହ	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH (Sum of USEPA 16)	Cresols	Dimethylphenols	Phenol	Trimethylphenols	Cyanide (Free) as CN	Cyanide (Total) as CN	Sulphide as S	TPH Ali Band >C10-C12
1935695	BH/17/06 8.00	< 0.10	0.19	0.22	< 0.10	0.39	0.60	0.23	< 2.73	<0.0005	0.0008	0.0018	<0.0005	<0.02	<0.02	0.14	< 0.010
1935696	BH/17/11 7.00	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.64	<0.0005	0.0009	<0.0010	<0.0005	<0.02	<0.02	<0.02	< 0.010
1935697	BH/17/09 5.00	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	<0.17	<0.0050	<0.0050	0.0163	<0.0050	<0.02	<0.02	<0.02	< 0.010
:		Client N Contact	ame	SOCOT	EC UK E	Doncaste	r				Sample Analysis						
	Bretby Business Park, Ashby Road Burton-on-Trent, Staffordshire, DE15 0YZ Tel +44 (0) 1283 554400 Fax +44 (0) 1283 554422		A80	13-18	5 A1 A	Inwic	k to E	Elling	ham		Date Printed19-Dec-2018Report NumberEXR/274392Table Number1						

	Units :		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	uS/cm	pH units	pH units	
	Metho Method Departi	od Codes :	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	TPHFID-Si	WSLM13	WSLM2	WSLM3	WSLM56	
	UKAS A	ccredited :	0.01 Yes	0.01 Yes	0.01 Yes	U.UT Yes	0.01 Yes	0.01 Yes	U.UT Yes	0.01 Yes	Ves	Ves	Ves	0.2 No	Yes	Yes	No	
LAB ID Number EX/	Client Sample Description	Sample Date	TPH Ali Band ⊳C12-C16	TPH Ali Band ⊳C16-C21	TPH Ali Band >C21-C35	TPH Ali Band >C8-C10	TPH Ali Band >C8-C40	TPH Aro Band >C10-C12	TPH Aro Band >C12-C16	TPH Aro Band >C16-C21	TPH Aro Band >C21-C35	TPH Aro Band >C8-C10	TPH Aro Band >C8-C40	Dissolved Organic Carbon w	Conductivity uS/cm @ 25C w	pH units w	pH units (BS1377) w	
1935695	BH/17/06 8.00		< 0.010	0.012	0.108	< 0.010	0.146	< 0.010	< 0.010	< 0.010	0.014	< 0.010	0.027	7.3	682	8.3 *	8.5	
1935696	BH/17/11 7.00		< 0.010	0.010	0.081	< 0.010	0.115	< 0.010	< 0.010	< 0.010	0.012	< 0.010	0.023	1.1	1157	7.8 *	7.8	
1935697	BH/17/09 5.00	1	< 0.010	< 0.010	0.088	< 0.010	0.119	< 0.010	< 0.010	< 0.010	0.020	< 0.010	0.033	16	1187	8.8 *	8.8	
												1						
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s			Client N Contact	ame	SOCOT	FEC UK D	oncaste	r					Sam	ple Ana	alysis			
Bre	etby Business Park, Ashby Road				•							Date Pri	nted		19-	Dec-2018		
Bu	rton-on-Trent, Staffordshire, DE15 0YZ											Report N	lumber		E	(R/274392		
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F	ax +44 (0) 1283 554422			_												•		

**Report No** 

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

### W274392

### Customer SOCOTEC UK Doncaster Site A8013-18 A1 Alnwick to Ellingham

W274392

Consignment No W146982 Date Logged 28-Nov-2018

In-House Report Due 05-Dec-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

			MethodID	BTEXHSA	Calc_CR3	CUSTSERV	GROHSA	ICPMSW											ICPMSWT	ICPWATVAR		
ID Number	Description	Matrix Type	Sampled	BTEX-HSA + MTBE analysis	Chromium (III) (CALC)	Report A	GRO-HSA GCFID (AA)	Nickel as Ni MS (Dissolved)	Chromium as Cr MS (Dissolved)	Cadmium as Cd MS (Dissolved)	Copper as Cu MS (Dissolved)	Lead as Pb MS (Dissolved)	Zinc as Zn MS (Dissolved)	Arsenic as As MS (Dissolved)	Mercury as Hg MS (Dissolved)	Selenium as Se MS (Dissolved)	Molybdenum as Mo MS (Dissolved)	Antimony as Sb MS (Dissolved)	Chromium as Cr MS (Total)	Total Sulphur as SO4 (Diss) VAR	Calcium as Ca (Dissolved) VAR	
	-			✓	✓			✓	✓	✓	~	✓	✓	~	~	✓	✓	~	✓	✓	✓	ł
EX/1935695	BH/17/06 8.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
EX/1935696	BH/17/11 7.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	
EX/1935697	BH/17/09 5.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

- A The sample was received in an inappropriate container for this analysis
- B The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised applicable to all analysis
- E Sample processing did not commence within the appropriate holding time
- F Sample processing did not commence within the appropriate handling time

#### Requested Analysis Key

- Analysis Required Analysis dependant upon trigger result - **Note: due date may be affected if triggered** No analysis scheduled
  - Analysis Subcontracted Note: due date may vary

# SOCOTEC UK Ltd Environmental Chemistry Analytical and Deviating Sample Overview

# Customer SOCOTEC UK Doncaster

Site A8013-18 A1 Alnwick to Ellingham

Report No W274392

Consignment No W146982 Date Logged 28-Nov-2018

In-House Report Due 05-Dec-2018

Please note the results for any subcontracted analysis (identified with a '^') is likely to take up to an additional five working days.

			MethodID	ICPWATVAR				KONENS				PAHMSW	PHEHPLCVL	SFAPI		SFAS	TPHFID-Si	WSLM13	WSLM2	WSLM3	WSLM56
ID Number	Description	Matrix Type	Sampled	Magnesium as Mg (Dissolved) VAR	Barium as Ba (Dissolved) VAR	Boron as B (Dissolved) VAR	Beryllium as Be (Dissolved) VAR	Chloride as Cl (Kone)	Ammoniacal Nitrogen (Kone)	Nitrate as N (Kone calc)	Chromium VI. as Cr (Kone)	PAH GC-MS (16)	Phenols by HPLC (Low Level)	Cyanide (Free) as CN SFA	Cyanide (Total) as CN SFA	Sulphide as S SFA	TPH by GC(Si)	<b>Dissolved Organic Carbon</b>	Conductivity uS/cm @ 25C	pH units	pH units (BS1377)
	- -			✓	✓	✓		✓	1	✓	✓	✓		✓	1	1	1		✓	1	
EX/1935695	BH/17/06 8.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	DF	DF
EX/1935696	BH/17/11 7.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	DF	DF
EX/1935697	BH/17/09 5.00	Groundwater	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	DF	DF

Note: We will endeavour to prioritise samples to complete analysis within holding time; however any delay could result in samples becoming deviant whilst being processed in the laboratory.

If sampling dates are missing or matrices unclassified then results will not be ISO 17025 accredited. Please contact us as soon as possible to provide missing information in order to reinstate accreditation.

#### Deviating Sample Key

- A The sample was received in an inappropriate container for this analysis
- B The sample was received without the correct preservation for this analysis
- C Headspace present in the sample container
- D The sampling date was not supplied so holding time may be compromised applicable to all analysis
- E Sample processing did not commence within the appropriate holding time
- F Sample processing did not commence within the appropriate handling time

#### Requested Analysis Key

- Analysis Required Analysis dependant upon trigger result - **Note: due date may be affected if triggered** No analysis scheduled
  - Analysis Subcontracted Note: due date may vary

Report Number : W/EXR/274392

# **Additional Report Notes**

Method	Sampla ID	The following information should be taken into consideration when using the
Code	Sample ID	data contained within this report
	EX1035605	The matrix of this sample has been found to interfere with the result for this test.
PAHMSW	EX1935696	The sample has therefore been diluted to improve the signal to noise ratio but in
		doing so. the detection limit for this test has been elevated.
		The Primary process control Blank Sample associated with the results for this test
		has been contaminated during the Laboratory process. As we have insufficient
PHEHPLCVL	EX1935696	sample to repeat, the laboratory believes that the validity of the data has not been
		affected however the reportable detection limit for Phenol has been elevated to
		take this into account
	EX1935697	The matrix of this sample has been found to interfere with the result for this test.
PHEHPLCVL		The sample has therefore been diluted to improve the signal to noise ratio but in
		doing so, the detection limit for this test has been elevated.

# **Method Descriptions**

Matrix	MethodID	Analysis Basis	Method Description
Water	BTEXHSA	As Received	Benzene, Toluene, Ethylbenzene, & Xylenes by headspace
			extraction GCFID quantitation
Water	Calc_CR3	As Received	Calculation of Chromium III from Total Chromium and Chromium
Water	GROHSA	As Received	Determination of Total Gasoline Range Organics Hydrocarbons (GRO) by Headspace FID
Water	ICPMSW	As Received	Direct quantitative determination of Metals in water samples using ICPMS
Water	ICPMSWT	As Received	Determination of Total Metals in water samples using nitric acid digestion and ICPMS quantitation
Water	ICPWATVAR	As Received	Direct determination of Metals and Sulphate in water samples using ICPOES
Water	KONENS	As Received	Direct analysis using discrete colorimetric analysis
Water	PAHMSW	As Received	Determination of PolyAromatic Hydrocarbons in water by pentane
Matar			Extraction GCMS quantitation
vvater Water		As Received	Determination of Phenois by HPLC
vvater Water		As Received	Segmented now analysis with colonimetric detection
vvater	SFAS	As Received	colorimetric detection
Water	TPHFID-Si	As Received	Determination of speciated pentane extractable hydrocarbons in water by GCFID
Water	WSLM13	As Received	Instrumental analysis using acid/persulphate digestion and non- dispersive IR detection
Water	WSLM2	As Received	Determination of the Electrical Conductivity ( $\mu$ S/cm) by electrical conductivity probe.
Water	WSLM3	As Received	Determination of the pH of water samples by pH probe
Water	WSLM56	As Received	Determination of the pH of water samples by pH probe

# **Report Notes**

# **Generic Notes**

# Soil/Solid Analysis

Unless stated otherwise,

- Results expressed as mg/kg have been calculated on the basis indicated in the Method Description table.
- All results on MCERTS reports are reported on a 105°C dry weight basis with the exception of pH and conductivity. Sulphate analysis not conducted in accordance with BS1377
- Water Soluble Sulphate is on a 2:1 water:soil extract

## Waters Analysis

Unless stated otherwise results are expressed as mg/l **NiI**: Where "NiI" has been entered against Total Alkalinity or Total Acidity this indicates that a measurement was not required due to the inherent pH of the sample.

## Oil analysis specific

Unless stated otherwise,

- Results are expressed as mg/kg
- SG is expressed as g/cm<sup>3</sup>@ 15°C

# Gas (Tedlar bag) Analysis

Unless stated otherwise, results are expressed as ug/l

## **Asbestos Analysis**

CH Denotes ChrysotileTR Denotes TremoliteCR Denotes CrocidoliteAC Denotes ActinoliteAM Denotes AmositeAN Denotes AnthophyliteNAIIS No Asbestos Identified in SampleNADIS No Asbestos Detected In Sample

# Symbol Reference

^ Sub-contracted analysis.

\$\$ Unable to analyse due to the nature of the sample

¶ Samples submitted for this analyte were not preserved on site in accordance with laboratory protocols.

This may have resulted in deterioration of the sample(s) during transit to the laboratory.

Consequently the reported data may not represent the concentration of the target analyte present in the sample at the time of sampling

¥ Results for guidance only due to possible interference

& Blank corrected result

I.S Insufficient sample to complete requested analysis

I.S(g) Insufficient sample to re-analyse, results for guidance only

Intf Unable to analyse due to interferences

N.D Not determined N.Det Not detected

N.F No Flow

**NS** Information Not Supplied

 $\ensuremath{\text{Req}}$  Analysis requested, see attached sheets for results

**Þ** Raised detection limit due to nature of the sample

\* All accreditation has been removed by the laboratory for this result

**‡** MCERTS accreditation has been removed for this result

§ accreditation has been removed for this result as it is a non-accredited matrix

**Note:** The Laboratory may only claim that data is accredited when all of the requirements of our Quality System have been met. Where these requirements have not been met the laboratory may elect to include the data in its final report and remove the accreditation from individual data items if it believes that the validity of the data has not been affected. If further details are required of the circumstances which have led to the removal of accreditation then please do not hesitate to contact the laboratory.

### **Sample Descriptions**

Client :	SOCOTEC UK Doncaster
Site :	A8013-18 A1 Alnwick to Ellingham
Report Number :	W27_4392

Lab ID Number	Client ID	Description
EX/1935695	BH/17/06 8.00	Groundwater
EX/1935696	BH/17/11 7 00	Groundwater
EX/1935697	BH/17/09 5 00	Groundwater



# APPENDIX G PHOTOGRAPHS

Rotary Cores Trial Pits

Plate G1 to G26 Plate G27 to G105




#### BH/17/01 Box 1 4.60m to 6.00m



#### BH/17/01 Box 2 6.50m to 9.50m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G1





BH/17/01 Box 3 9.50m to 12.50m



BH/17/01 Box 4 12.50m to 15.00m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G2





BH/17/02 Box 1 4.60m to 7.10m



BH/17/02 Box 2 7.10m to 10.10m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G3

Notes:





#### BH/17/02 Box 3 10.10m to 13.10m



#### BH/17/02 Box 4 13.10m to 15.00m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No. Carried out for	A8013-18 Geoffrey Osborne Limited

Figure:



#### BH/17/03 Box 1 4.10m to Cut



#### BH/17/03 Box 2 Cut to 8.50m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	
	Carried out for	Geoffrey Osborne Limited	





BH/17/03 Box 3 8.50m to 10.00m

G6





#### BH/17/04 Box 1 4.20m to 6.80m

<b>CO</b>	project A1	-A2E		TAN T.
PROJECT NO	A8013-18	вн	7/04	-
DEPTH (M)	6.80-8.30	вох	2 OF 3	
100 200 3	300 400 500	600 700	<b>800</b> 900	1000
98-9			24 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	*
オティ				OE.8
	4100 Arro			*
	BH/17/04 Box 2 6	.80m to 8.30m		

Notes:		
	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No.	A8013-18
	Carried out for	Geoffrey Osborne Limited

Figure:

SOCOTEC





BH/17/04 Box 3 8.30m to 9.90m



#### BH/17/05A Box 1 2.40m to 4.00m



lotes:			
	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	
	Carried out for	Geoffrey Osborne Limited	









#### BH/17/05A Box 1 5.50m to 7.00m







#### BH/17/06 Box 1 9.40m to 11.50m



Geoffrey Osborne Limited

Carried out for











Ø	project A1	- A2	E	The Tr
PROJECT NO	A8013-18	вн	17/06	-
DEPTH (M)	19.00-20.30	вох	7 OF 7	
100 200	300 400 500	600 700	<b>800</b> 900	1000
A++				20-30

BH/17/06 Box 7 19.00m to 20.30m

Notes:







()	PROJECT A1	-A2E		it's Tr
PROJECT NO	A8013-18	вн	17/07	-
DEPTH (M)	11.60 - 13.10	вох	3 OF	
100 200	300 400 500	600 700	800 900	1000
11.60				***
Charles and				
***			********C	13:10

BH/17/07 Box 3 11.60m to 13.10m

Notes:





BH/17/08 Box 1 5.50m to 10.00m

Notes:





#### BH/17/09 Box 1 7.00m to 10.00m



#### BH/17/09 Box 2 10.00m to 13.00m

Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18 Geoffrey Osborne Limited
Carried Out for	Comey Osborne Einited

Figure:





#### BH/17/10 Box 1 5.60m to 8.60m



#### BH/17/10 Box 2 8.60m to 10.00m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G19





#### BH/17/11 Box 1 1.30m to 4.00m



#### BH/17/11 Box 2 4.00m to 8.50m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	0
	Project No.	A8013-18	
	Carried out for	Geoffrey Osborne Limited	





BH/17/11 Box 3 8.50m to 10.00m

Notes:



#### BH/17/12 Box 1 8.00m to 11.50m

SOCOTEC	PROJECT A	I ALNWICK -	- MORPETH	
PROJECT NO	A8013-18	вн в	H 17/12	
DEPTH (M)	011.50-13.00	вох	2 OF 2	
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CAR TO				20
				A

ProjectA1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAMProject No.A8013-18Carried out forGeoffrey Osborne Limited

Figure:

SOCOTEC





#### BH/17/13 Box 1 6.00m to 9.00m



#### BH/17/13 Box 2 9.00m to 12.00m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G23





BH/17/13 Box 3 12.00m to 15.00m

Notes:





#### BH/17/14 Box 1 5.00m to 8.00m



#### BH/17/14 Box 2 8.00m to 11.00m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G25





#### BH/17/14 Box 3 11.00m to 14.00m



#### BH/17/14 Box 2 14.00m to 15.00m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G26





### TP/17/01 Face A 3.90m



#### TP/17/01 Face B 3.90m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G27





### TP/17/01 Spoil 3.90m

Notes:	

Project Project No. Carried out for A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM A8013-18 Geoffrey Osborne Limited Figure:

Notes:





TP/17/02 Face A 2.20m



### TP/17/02 Face C 2.20m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geottrey Osborne Limited

G29





TP/17/03 Face A & B 3.60m



### TP/17/03 Face C & D 3.60m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	C30
	Carried out for	Geoffrey Osborne Limited	0.00





TP/17/03 Spoil 3.60m

Notes:
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TP/17/04 Face A & B 1.20m



### TP/17/04 Spoil 1.20m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	G32
	Carried out for	Geoffrey Osborne Limited	002





TP/17/05 Face A 3.60m



#### TP/17/05 Face B/C 3.60m

lotes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	U
	Project No.	A8013-18	G33
	Carried out for	Geoffrey Osborne Limited	000





TP/17/06 Face A 3.50m



### TP/17/06 Face B 3.50m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G34





TP/17/06 Spoil 3.50m

Notes:

Notes:



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PROJECT A8013-18 PROJECT NO A8013-18 TP TP/17/1024	
DEPTH (M) LOOM	
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TP/17/07 Face C 2.60m



### TP/17/07 Face B 2.60m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geoffrey Osborne Limited




TP/17/07 Spoil 2.60m

Notes:

G37





TP/17/08 Face A 1.50m



#### TP/17/08 Face B 1.50m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G38

Notes:





TP/17/08 Spoil 1.50m

TP/BH/WS 0.00m - 0.00m





#### TP/17/09A Face A 2.30m

Notes:		
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No.	A8013-18
	Carried out for	Geoffrey Osborne Limited





#### TP/17/09A Spoil 2.30m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G41





TP/17/10 Face A 3.50m



#### TP/17/10 Face B 3.50m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G42





TP/17/10 Spoil 3.50m

TP/BH/WS 0.00m - 0.00m

Notes:		
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No.	A8013-18
	Carried out for	Geoffrey Osborne Limited





TP/17/11 Face C 2.60m



#### TP/17/11 Face A 2.60m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited

Figure:





TP/17/11 Spoil 2.60m

Notes:





#### TP/17/12 Face B 3.30m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G46





TP/17/12 Spoil 3.30m

Notes:





TP/17/13 Face A/B 2.20m



#### TP/17/13 Spoil 2.20m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G48





#### TP/17/14 Face A 1.70m



#### TP/17/14 Face B 1.70m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G49





#### TP/17/14 Spoil 1.70m

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ject No.
ried out for

Notes:

IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM 013-18 offrey Osborne Limited Figure:

G50





TP/17/15 Face A 2.60m



#### TP/17/15 Spoil 2.60m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G51







#### TP/17/16 Face B/C 2.30m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geoffrey Osborne Limited





TP/17/16 Spoil 2.30m





TP/17/17 Face D/A 1.70m



#### TP/17/17 Face B/C 1.70m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G54





TP/17/17 Spoil 1.70m

Notes:







#### TP/17/18 Face B/C 3.00m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G56





TP/17/18 Spoil 3.00m

TP/BH/WS 0.00m - 0.00m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	0
	Project No.	A8013-18	
	Carried out for	Geoffrey Osborne Limited	





TP/17/19 Face D/A 3.60m



#### TP/17/19 Face B/C 3.60m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	-
	Project No.	A8013-18	G58
	Carried out for	Geoffrey Osborne Limited	000





TP/17/19 Spoil 3.60m

Notes:





TP/17/20 Face D/A 3.50m



#### TP/17/20 Spoil 3.50m

Notes:			Figure:
	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Ŭ
	Project No.	A8013-18	
	Carried out for	Geoffrey Osborne Limited	





TP/17/21 Face A/B 3.50m



#### TP/17/21 Face C/D 3.50m

Notes:			Figure:
	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	5
	Project No.	A8013-18	C61
	Carried out for	Geoffrey Osborne Limited	001





TP/17/21 Spoil 3.50m

Notes:





Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geoffrey Osborne Limited





TP/17/22 Spoil 3.30m



#### TP/17/22 Boulder 1.50m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	G64
	Carried out for	Geoffrey Osborne Limited	004





TP/17/23 Face A 3.50m



#### TP/17/23 Face B 3.50m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	
	Project No.	A8013-18	G65
	Carried out for	Geoffrey Osborne Limited	500

Notes:





TP/17/23 Spoil 3.50m

TP/BH/WS 0.00m - 0.00m





TP/17/24 Face A 2.60m



#### TP/17/24 Face C 2.60m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G67





TP/17/24 2.60m

Notes:





TP/17/25 Face A/B 2.40m



#### TP/17/25 Face C/D 2.40m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	U
	Project No.	A8013-18	C60
	Carried out for	Geoffrey Osborne Limited	003





TP/17/25 Spoil 2.40m

Notes:





#### TP/17/29 Face B/C 4.00m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G71





TP/17/30 Face A 1.70m



#### TP/17/30 Spoil 1.70m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G72








#### TP/17/31 Face B/C 2.50m

Notes:		
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No.	A8013-18
	Carried out for	Geoffrey Osborne Limited

Figure:

Notes:





### TP/17/32 Face B 1.70m

Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geoffrey Osborne Limited





TP/17/32 Spoil 1.70m

Notes:

Notes:





Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No.	A8013-18
Carried out for	Geoffrey Osborne Limited

Figure:





#### TP/17/33 Spoil 1.50m

Notes:		

Project Project No. Carried out for A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM A8013-18 Geoffrey Osborne Limited Figure:

G78





### TP/17/35 Face B 2.60m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G79

Notes:





TP/17/35 Spoil 2.60m

TP/BH/WS 0.00m - 0.00m

ATIN MORPETH TO FELTON & ALINWICK TO ELLINGHAM
A8013-18 Geoffrey Osborne Limited
A





TP/17/36 Face B 3.50m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G81





#### TP/17/36 Spoil 3.50m

Notes:			

Project Project No. Carried out for A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM A8013-18 Geoffrey Osborne Limited Figure:

G82







### TP/17/38 Face B 2.00m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	5
	Project No.	A8013-18	C83
	Carried out for	Geoffrey Osborne Limited	605





TP/17/38 Spoil 2.00m

Notes:	





#### TP/17/39 Face B 3.00m

Notes:			Figure:
	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Ŭ
	Project No.	A8013-18	G85
	Carried out for	Geoffrey Osborne Limited	000





TP/17/39 Spoil 3.00m





TP/17/40 Face A 2.80m



### TP/17/40 Spoil 2.80m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G87





### TP/17/41 Face B/C 3.00m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G88





TP/17/41 Spoil 3.00m

Notes:





### TP/17/42 Face C 2.40m

Notes:			Figure:
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	-
	Project No.	A8013-18	G90
	Carried out for	Geoffrey Osborne Limited	000
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### TP/17/42 Spoil 2.40m

Notes:		
	Project	A
	Project No.	A
	Carried out for	G

A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM A8013-18 Geoffrey Osborne Limited Figure:



G92



TP/17/43 Face D/A 2.70m



TP/17/43 Face B/C 2.70m

Notes:	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	

Notes:





TP/17/43 Spoil 2.40m

TP/BH/WS 0.00m - 0.00m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No. Carried out for	A8013-18 Geoffrey Osborne Limited





TP/17/44 Face B/C 2.30m





TP/17/44 Spoil 2.30m

Notes:

Notes:





#### TP/17/45 Face B/C 2.30m

Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No. Carried out for	A8013-18 Geoffrey Osborne Limited





TP/17/46 Face A/B 1.20m



### TP/17/46 Face C/D 1.20m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G97





TP/17/46 Spoil 1.20m

Notes:





TP/17/47 Face A/B 3.00m



#### TP/17/47 Face C/D 3.00m

Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	





TP/17/47 Spoil 3.00m





TP/17/48 Face A 3.00m



#### TP/17/48 Face C 3.00m

Notes:	Project	A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM	Figure:
	Project No. Carried out for	A8013-18 Geoffrey Osborne Limited	G101





TP/17/48 Spoil 3.00m





HP/17/01 1.30m



#### HP/17/01 Cable Marker 1.30m

 Project
 A1iN MORPETH TO FELTON & ALNWICK TO ELLINGHAM

 Project No.
 A8013-18

 Carried out for
 Geoffrey Osborne Limited

Figure:

Notes:





HP/17/02 1.00m



#### HP/17/02 1.00m

Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
Project No. Carried out for	A8013-18 Geoffrey Osborne Limited





#### HP/17/03 1.00m

Notes:		
	Project	A1IN MORPETH TO FELTON & ALNWICK TO ELLINGHAM
	Project No.	A8013-18
	Carried out for	Geoffrey Osborne Limited

Figure:

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