

APPENDIX A

Exploratory Hole Location Plan



APPENDIX B

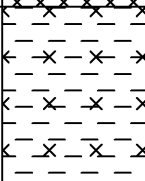
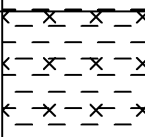
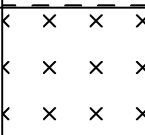
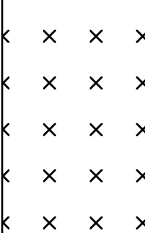
Borehole Logs

SPT RESULTS						SOIL	DESCRIPTION
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m ²	DEPTH	SOIL REF
DEPTH(m)	TYPE					(m)	
						0.2	A
1.00-1.45	C1	N = 10	2,2/2,2,2,4			1.0	
2.00-2.45	C2	N = 11	3,3/3,3,2,3			2.0	B
						2.7	
3.00-3.45	C3	N = 10	1,1/2,2,3,3			3.0	
4.00-4.45	C4	N = 10	2,1/2,2,3,3			4.0	C
						5.0	
						6.0	
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig						Key: ▽ - Water Strike D - Disturbed Sample B - Bulk Sample C - Cone (SPT Test) - - - - -	
2.							
3.							
4.							
r							

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date 02.11.2016	Site Engineer MH/PB	Job No G-16-381	Title BOREHOLE No. 1	 Shiregeotechnical The Chapel Barnsley Hall Road BROMSGROVE Worcestershire B61 0SZ t : 01527 579933 f : 01527 579537 e : info@shire-uk.com w : www.shire-uk.com
Drawn AG	Checked RR	Drawing No BH1	Issue A	
			Project LAND AT BLISS HOUSE	

SPT RESULTS						SOIL		DESCRIPTION		
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m2	DEPTH (m)	SOIL REF			
DEPTH(m)	TYPE									
1.00-1.45	C1	N = 13	2,2/3,3,3,4			0.3	A		MADE GROUND: Tarmac, hardcore, gravel and brick	
						1.0	B		Brown silty CLAY.	
1.5	C		Firm brown clayey SILT.							
2.0	D		Firm damp brown SILT.							
										
3.0										
4.0										
2.00-2.45	C2	N = 15	3,3/2,4,4,5							
3.00-3.45	C3	N = 15	2,3/4,3,3,5							
4.00-4.45	C4	N = 12	3,2/3,3,2,4							
						5.0			End of borehole @ 4.0m	
						6.0				

Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig
2.
3.
4.
r

Key:  - Water Strike
D - Disturbed Sample
B - Bulk Sample
C - Cone (SPT Test)
- - - - -

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date	Site Engineer	Job No
02.11.2016	MH/PB	G-16-381
Drawn	Checked	Drawing No
AG	RR	BH2
		Issue
		A

Title
BOREHOLE No. 2

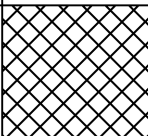
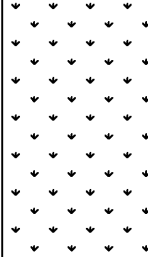
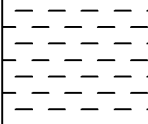
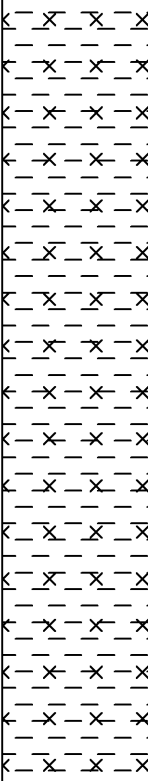
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SPT RESULTS						SOIL		DESCRIPTION	
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m2	DEPTH (m)	SOIL REF		
DEPTH(m)	TYPE								
						0.5	A		MADE GROUND: Tarmac, hardcore, gravel and brick
1.00-1.45	C1	N = 1	1,0/0,0,0,1			1.0	B		Very soft dark brown to black PEAT with organic materials and wood.
						1.5			
2.00-2.45	C2	N = 19	4,4/4,5,5,5			2.0	C		Stiff brown CLAY.
3.00-3.45	C3	N = 14	2,2/2,4,3,5			3.0	D		Stiff becoming firm brown clayey SILT.
						4.0			
4.00-4.45	C4	N = 15	3,2/3,4,3,5						
5.00-5.45	C5	N = 13	-,-/3,3,3,4			5.0			
									End of borehole @ 5.0m
						6.0			
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig									
2.									
3.									
4.									
r									
Key:									- Water Strike
								D	- Disturbed Sample
								B	- Bulk Sample
								C	- Cone (SPT Test)
								-	- - - - -

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date 02.11.2016	Site Engineer MH/PB	Job No G-16-381
Drawn AG	Checked RR	Drawing No BH3 Issue A

Title
BOREHOLE No. 3

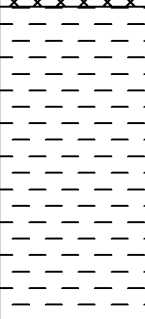
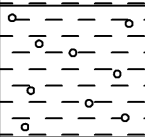
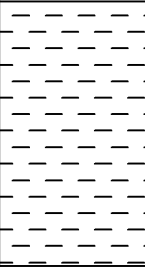
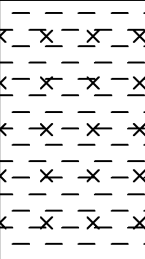
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SPT RESULTS						SOIL		DESCRIPTION	
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m2	DEPTH (m)	SOIL REF		
DEPTH(m)	TYPE								
						0.3	A		MADE GROUND: Tarmac, hardcore, gravel and brick
1.00-1.45	C1	N = 12	1,2/2,3,3,4			1.0	B		Firm brown CLAY.
						1.5			
2.00-2.45	C2	N = 17	3,4/4,4,4,5			2.0	C		Firm brown CLAY with occasional gravel
						3.0	D		Firm becoming stiff reddish brown CLAY with black minerals.
3.00-3.45	C3	N = 17	3,3/3,5,4,5			4.0	E		Stiff reddish brown clayey SILT.
4.00-4.45	C4	N = 23	2,4/6,6,5,6			5.0			End of borehole @ 4.0m
						6.0			
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig						Key:  - Water Strike			
2.						D - Disturbed Sample			
3.						B - Bulk Sample			
4.						C - Cone (SPT Test)			
5.									

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date	Site Engineer	Job No
02.11.2016	MH/PB	G-16-381
Drawn	Checked	Drawing No
AG	RR	BH4
		Issue
		A

Title
BOREHOLE No. 4

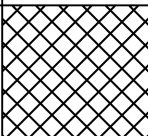
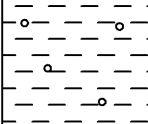
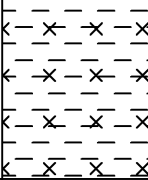
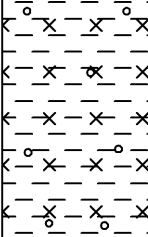
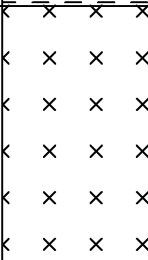
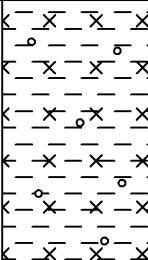
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SPT RESULTS						SOIL		DESCRIPTION	
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m2	DEPTH (m)	SOIL REF		
DEPTH(m)	TYPE								
						0.5	A		MADE GROUND: Brown clayey TOPSOIL with brick fragments and roots.
1.00-1.45	C1	N = 18	3,4/4,5,4,5			1.0	B		Stiff becoming firm dry brown CLAY with occasional rounded gravel.
						2.0			
2.00-2.45	C2	N = 12	3,3/2,3,3,4			2.3			
						3.0	C		Firm becoming stiff brown silty CLAY.
3.00-3.45	C3	N = 19	3,2/3,4,5,7			4.0	D		Stiff brown silty CLAY with occasional rounded gravel.
4.00-4.45	C4	N = 17	3,4/3,4,5,5			5.0	E		Stiff reddish brown SILT.
5.00-5.45	C5	N = 7	1,2/1,2,1,3			6.0	F		Soft becoming stiff reddish brown silty CLAY with occasional gravel.
6.00-6.45	C6	N = 19	3,4/4,4,5,6						
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig 2. 3. 4. r						Key:  - Water Strike D - Disturbed Sample B - Bulk Sample C - Cone (SPT Test) - - - - -			

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date	Site Engineer	Job No
02.11.2016	MH/PB	G-16-381
Drawn	Checked	Drawing No
AG	RR	BH5
		Issue
		A

Title
BOREHOLE No. 5

Project
LAND AT BLISS HOUSE



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BROMSGROVE Worcestershire B61 0SZ

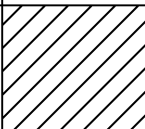
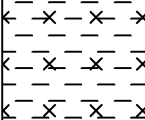
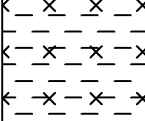
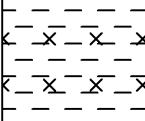
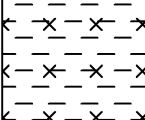
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SPT RESULTS							SOIL	DESCRIPTION
SOIL SAMPLES/TEST					SHEAR VANE kN/m ²	DEPTH (m)	SOIL REF	
DEPTH(m)	TYPE	SPT VALUE	FIELD RECORDS	WELL				
7.00-7.45	C7	N = 19	4,4/4,4,5,6			7.0	G	Stiff reddish brown clayey SILT.
						8.0		End of borehole @ 7.0m
						9.0		
						10.0		
						11.0		
						12.0		
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig 2. 3. 4. 5.							Key:  - Water Strike D - Disturbed Sample B - Bulk Sample C - Cone (SPT Test)	

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date 02.11.2016	Site Engineer MH/PB	Job No G-16-381	Title BOREHOLE No. 5	 Shiregeotechnical The Chapel Barnsley Hall Road BROMSGROVE Worcestershire B61 0SZ t : 01527 579933 f : 01527 579537 e : info@shire-uk.com w : www.shire-uk.com
Drawn AG	Checked RR	Drawing No BH5	Issue A	
			Project LAND AT BLISS HOUSE	

SPT RESULTS						SOIL		DESCRIPTION	
SOIL SAMPLES/TEST		SPT VALUE	FIELD RECORDS	WELL	SHEAR VANE kN/m2	DEPTH (m)	SOIL REF		
DEPTH(m)	TYPE								
						0.5	A		Brown clayey TOPSOIL with occasional gravel.
1.00-1.45	C1	N = 10	2,2/2,2,2,4			1.0	B		Firm becoming soft dry brown SILT.
						2.0			
2.00-2.45	C2	N = 6	1,1/1,1,2,2			2.5			
3.00-3.45	C3	N = 13	2,2/2,3,3,5			3.0	C		Firm brown slightly clayey SILT.
						4.0			
4.00-4.45	C4	N = 15	3,3/3,3,4,5			5.0			
5.00-5.45	C5	N = 10	1,2/2,2,3,3						
						6.0			End of borehole @ 5.0m
Remarks: 1. Borehole carried out by Competitor 130 Window Sample Rig									
2.									
3.									
4.									
5.									
Key:  - Water Strike									
D - Disturbed Sample									
B - Bulk Sample									
C - Cone (SPT Test)									
-									

ORIGINAL DRAWING SIZE A4

NOT TO SCALE

Site Date 02.11.2016	Site Engineer MH/PB	Job No G-16-381
Drawn AG	Checked RR	Drawing No BH6 Issue A

Title
BOREHOLE No. 6

Project
LAND AT BLISS HOUSE



Shiregeotechnical

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APPENDIX C

Laboratory Test Results



Unit A2
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info@elab-uk.co.uk

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 16-09358

Issue: 1

Date of Issue: 09/11/2016

Contact: Rob Ray

Customer Details: Shire Consulting
The Chapel
Bromsgrove
Worcestershire B61 0SZ

Quotation No: Q14-00098

Order No: Not Supplied

Customer Reference: G-16-381

Date Received: 07/11/2016

Date Approved: 09/11/2016

Details: Land at Bliss House

Approved by: 

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 16-09358

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
79459	BH1 0.20	02/11/2016	07/11/2016	Silty loam	
79460	BH2 0.20	02/11/2016	07/11/2016	Sandy silty loam & stones	
79461	BH3 0.30	02/11/2016	07/11/2016	Sandy silty loam	
79462	BH4 0.20	02/11/2016	07/11/2016	Silty loam	
79463	BH5 0.20	02/11/2016	07/11/2016	Silty loam	
79464	BH6 0.20	02/11/2016	07/11/2016	Silty loam	
79465	BH3 1.50	02/11/2016	07/11/2016	Silty clayey loam	c
79466	BH1 2.00	02/11/2016	07/11/2016	Silty loam	
79467	BH5 2.00	02/11/2016	07/11/2016	Silty loam	



Results Summary

Report No.: 16-09358

2683

ELAB Reference	79459	79460	79461	79462	79463	79464
Customer Reference						
Sample ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Location	BH1	BH2	BH3	BH4	BH5	BH6
Sample Depth (m)	0.20	0.20	0.30	0.20	0.20	0.20
Sampling Date	02/11/2016	02/11/2016	02/11/2016	02/11/2016	02/11/2016	02/11/2016

Determinand	Codes	Units	LOD						
Metals									
Arsenic	M	mg/kg	1	6.8	^ 12.2	11.3	5.3	6.0	6.9
Cadmium	M	mg/kg	0.5	< 0.5	^ < 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	32.6	^ 36.0	32.5	27.6	27.3	31.9
Copper	M	mg/kg	5	19.0	^ 51.4	34.1	18.5	18.1	18.8
Lead	M	mg/kg	5	31.2	^ 35.0	59.6	26.1	31.7	23.2
Mercury	M	mg/kg	0.5	< 0.5	^ < 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5	31.8	^ 25.4	29.8	28.0	29.3	34.6
Selenium	M	mg/kg	1	< 1.0	^ < 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5	84.6	^ 118	170	88.4	86.3	79.9
Anions									
Water Soluble Sulphate	M	g/l	0.02	0.06	^ 0.03	0.17	0.10	0.03	0.03
Miscellaneous									
pH	M	pH units	0.1	7.4	^ 7.9	9.1	8.1	6.8	6.7
Soil Organic Matter	U	%	0.1	2.1	3.3	2.5	2.1	1.6	0.8
Organics									
>C8-C10 BCB	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C10-C12 BCB	N	mg/kg	1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
>C12-C16 BCB	N	mg/kg	1	< 1.0	< 1.0	16.0	2.2	< 1.0	< 1.0
>C16-C21 BCB	N	mg/kg	1	< 1.0	8.0	89.4	53.9	< 1.0	< 1.0
>C21-C35 BCB	N	mg/kg	1	5.9	172	729	1060	< 1.0	1.9
>C35-C40 BCB	N	mg/kg	1	< 1.0	40.2	112	224	< 1.0	< 1.0
Total (>C8-C40) BCB	N	mg/kg	1	5.9	220	946	1340	< 1.0	1.9
Polyaromatic hydrocarbons									
Naphthalene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.2	< 0.1	< 0.1	< 0.1
Anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.1	< 0.1	< 0.1	< 0.1
Pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.3	0.2	< 0.1	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.1	< 0.1	< 0.1	< 0.1
Chrysene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.6	0.2	< 0.1	< 0.1
Benzo (b) fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.5	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.8	< 0.1	< 0.1	< 0.1
Benzo (a) pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	0.7	0.2	< 0.1	< 0.1
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	0.3	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	0.2	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	< 0.1	^ < 0.1	< 0.1	0.2	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4	< 0.4	^ < 0.4	3.6	1.1	< 0.4	< 0.4



Results Summary

Report No.: 16-09358

2683

ELAB Reference	79465	79466	79467
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	BH3	BH1	BH5
Sample Depth (m)	1.50	2.00	2.00
Sampling Date	02/11/2016	02/11/2016	02/11/2016

Determinand	Codes	Units	LOD			
Metals						
Arsenic	M	mg/kg	1	6.2	n/t	n/t
Cadmium	M	mg/kg	0.5	< 0.5	n/t	n/t
Chromium	M	mg/kg	5	38.3	n/t	n/t
Copper	M	mg/kg	5	14.8	n/t	n/t
Lead	M	mg/kg	5	19.5	n/t	n/t
Mercury	M	mg/kg	0.5	< 0.5	n/t	n/t
Nickel	M	mg/kg	5	40.1	n/t	n/t
Selenium	M	mg/kg	1	< 1.0	n/t	n/t
Zinc	M	mg/kg	5	79.1	n/t	n/t
Anions						
Water Soluble Sulphate	M	g/l	0.02	0.06	0.04	0.02
Miscellaneous						
pH	M	pH units	0.1	8.2	7.9	7.3
Soil Organic Matter	U	%	0.1	0.6	n/t	n/t
Organics						
>C8-C10 BCB	N	mg/kg	1	c < 1.0	n/t	n/t
>C10-C12 BCB	N	mg/kg	1	c < 1.0	n/t	n/t
>C12-C16 BCB	N	mg/kg	1	c < 1.0	n/t	n/t
>C16-C21 BCB	N	mg/kg	1	c < 1.0	n/t	n/t
>C21-C35 BCB	N	mg/kg	1	c 5.5	n/t	n/t
>C35-C40 BCB	N	mg/kg	1	c < 1.0	n/t	n/t
Total (>C8-C40) BCB	N	mg/kg	1	c 5.5	n/t	n/t
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Acenaphthene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Fluorene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Phenanthrene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Anthracene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Fluoranthene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Pyrene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Chrysene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Benzo (b) fluoranthene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Benzo (a) pyrene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Indeno (1,2,3-cd) pyrene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	c < 0.1	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	c < 0.4	n/t	n/t



Method Summary

Report No.: 16-09358

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	09/11/2016	113	Electromeric
Aqua regia extractable metals	M	Air dried sample	08/11/2016	118	ICPMS
PAH (GC-FID)	M	As submitted sample	08/11/2016	133	GC-FID
Water soluble anions	M	Air dried sample	08/11/2016	172	Ion Chromatography
Basic carbon banding in soil	N	As submitted sample	08/11/2016	218	GC-FID
Soil organic matter	U	Air dried sample	08/11/2016	BS1377:P3	Titrimetry

Tests marked N are not UKAS accredited



Report Information

Report No.: 16-09358

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Deviation Codes

-
- | | |
|---|--|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage



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THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number: 16-09638

Issue: 1

Date of Issue: 29/11/2016

Contact: Rob Ray

Customer Details: Shire Consulting
The Chapel
Bromsgrove
Worcestershire B61 0SZ

Quotation No: Q14-00098

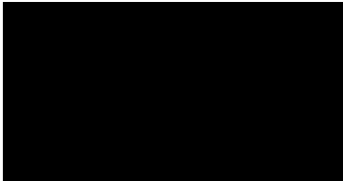
Order No: Not Supplied

Customer Reference: G-16-381

Date Received: 07/11/2016

Date Approved: 29/11/2016

Details: Land at Bliss House

Approved by: 

John Wilson, Operations Manager

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)



Sample Summary

Report No.: 16-09638

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
81323	Composite 1 BH1 - BH4 0.20	02/11/2016	23/11/2016	Sandy silty loam	g
81324	Composite 2 BH5 - BH6 0.20	02/11/2016	23/11/2016	Silty loam	g



Results Summary

Report No.: 16-09638

ELAB Reference	81323	81324
Customer Reference	BH1 - BH4	BH5 - BH6
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	Composite 1	Composite 2
Sample Depth (m)	0.20	0.20
Sampling Date	02/11/2016	02/11/2016

Determinand	Codes	Units	LOD		
Miscellaneous					
Acid Neutralisation Capacity	N	mol/kg	0.1	< 0.1	< 0.1
Loss On Ignition (450°C)	M	%	0.01	2.05	2.61
pH	M	pH units	0.1	7.1	7.0
Total Organic Carbon	N	%	0.01	0.83	0.88
Polyaromatic hydrocarbons					
Total PAH (Including Coronene)	N	mg/kg	2	8	< 2
BTEX					
Total BTEX	M	mg/kg	0.01	g < 0.01	g < 0.01
Total Petroleum Hydrocarbons					
Mineral Oil	U	mg/kg	5	g 1040	g < 5
PCB (ICES 7 congeners)					
PCB (Total of 7 Congeners)	M	mg/kg	0.03	< 0.03	< 0.03

Results Summary

Report No.: 16-09638

WAC Analysis

Elab Ref:	81324					Landfill Waste Acceptance Criteria Limits		
Sample Date:	02/11/2016					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	Composite 2 BH							
Depth (m)	0.2							
Site:	Land at Bliss House							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.88	3	5	6
Loss on Ignition		M	%		2.6	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			7.0	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

			10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			mg/l	mg/kg			
Arsenic		N	< 0.005	< 0.05	0.5	2	25
Barium		N	< 0.005	< 0.05	20	100	300
Cadmium		N	< 0.001	< 0.01	0.04	1	5
Chromium		N	< 0.005	< 0.05	0.5	10	70
Copper		N	0.010	0.10	2	50	100
Mercury		N	< 0.005	< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005	< 0.05	0.5	10	30
Nickel		N	0.001	< 0.05	0.4	10	40
Lead		N	< 0.001	< 0.05	0.5	10	50
Antimony		N	< 0.005	< 0.05	0.06	0.7	5
Selenium		N	< 0.005	< 0.05	0.1	0.5	7
Zinc		N	0.006	0.06	4	50	200
Chloride		N	< 5	< 50	800	15000	25000
Fluoride		N	< 5	< 10	10	150	500
Sulphate		N	2	16.90	1000	20000	50000
Total Dissolved Solids		N	< 100	1000.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	12.100	121.00	500	800	1000

Leach Test Information

pH		N	7.7				
Conductivity (uS/cm)		N	40				
Dry mass of test portion (g)			101.000				
Dry Matter (%)			84				
Moisture (%)			19				
Eluent Volume (ml)			950				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ELAB cannot be held responsible for any discrepancies with current legislation

Results Summary

Report No.: 16-09638

WAC Analysis

Elab Ref:	81323					Landfill Waste Acceptance Criteria Limits		
Sample Date:	02/11/2016					Inert Waste Landfill	Stable Non-reactive Hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:	Composite 1 BH							
Depth (m)	0.2							
Site:	Land at Bliss House							
Determinand		Code	Units					
Total Organic Carbon		N	%		0.83	3	5	6
Loss on Ignition		M	%		2.1	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		1040	500	--	--
Total (of 17) PAHs		N	mg/kg		8.0	100	--	--
pH		M			7.1	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate

Eluate Analysis

			10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
			mg/l	mg/kg			
Arsenic		N	0.016	0.16	0.5	2	25
Barium		N	0.021	0.21	20	100	300
Cadmium		N	< 0.001	< 0.01	0.04	1	5
Chromium		N	< 0.005	< 0.05	0.5	10	70
Copper		N	0.013	0.13	2	50	100
Mercury		N	< 0.005	< 0.01	0.01	0.2	2
Molybdenum		N	0.008	0.08	0.5	10	30
Nickel		N	0.002	< 0.05	0.4	10	40
Lead		N	< 0.001	< 0.05	0.5	10	50
Antimony		N	< 0.005	< 0.05	0.06	0.7	5
Selenium		N	< 0.005	< 0.05	0.1	0.5	7
Zinc		N	0.008	0.08	4	50	200
Chloride		N	8	81.00	800	15000	25000
Fluoride		N	< 5	< 10	10	150	500
Sulphate		N	23	235.00	1000	20000	50000
Total Dissolved Solids		N	180	1800.00	4000	60000	100000
Phenol Index		N	< 0.01	< 0.10	1	-	-
Dissolved Organic Carbon		N	17.600	176.00	500	800	1000

Leach Test Information

pH		N	8.0				
Conductivity (uS/cm)		N	256				
Dry mass of test portion (g)			102.000				
Dry Matter (%)			89				
Moisture (%)			12				
Eluent Volume (ml)			968				

Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Method Summary

Report No.: 16-09638

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Leachate					
Arsenic*	N		29/11/2016	101	ICPMS
Cadmium*	N		29/11/2016	101	ICPMS
Chromium*	N		29/11/2016	101	ICPMS
Lead*	N		29/11/2016	101	ICPMS
Nickel*	N		29/11/2016	101	ICPMS
Copper*	N		29/11/2016	101	ICPMS
Zinc*	N		29/11/2016	101	ICPMS
Mercury*	N		29/11/2016	101	ICPMS
Selenium*	N		29/11/2016	101	ICPMS
Antimony	N		29/11/2016	101	ICPMS
Barium*	N		29/11/2016	101	ICPMS
Molybdenum*	N		29/11/2016	101	ICPMS
pH Value*	N		29/11/2016	113	Electrometric
Electrical Conductivity*	N		29/11/2016	136	Probe
Dissolved Organic Carbon	N		29/11/2016	102	TOC analyser
Chloride*	N		29/11/2016	131	Ion Chromatography
Fluoride*	N		29/11/2016	131	Ion Chromatography
Sulphate*	N		29/11/2016	131	Ion Chromatography
Total Dissolved Solids	N		29/11/2016	144	Gravimetric
Phenol index	N		29/11/2016	121	HPLC
WAC Solids analysis	N				
pH Value**	M	Air dried sample	29/11/2016	113	Electrometric
Total Organic Carbon	N	Air dried sample	28/11/2016	210	IR
Loss on Ignition**	M	Air dried sample	28/11/2016	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	29/11/2016	NEN 737	Electrometric
Total BTEX**	M	As submitted sample	25/11/2016	181	GCMS
Mineral Oil**	U	As submitted sample	24/11/2016	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	25/11/2016	120	GCMS
Total PAH (17)**	N	As submitted sample	25/11/2016	133	GCFID

Tests marked N are not UKAS accredited



Report Information

Report No.: 16-09638

Key

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-
- | | |
|---|--|
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Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

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