APPENDIX B

Geotechnical Laboratory Results

Atterberg Limits Test Result Summary Sheet

Test carried out in accordance with BS 1377-2:1990(2003) cl. 3.2, 4.2, 4.3, 5.3 & 5.4

Project No : *JN0877* **Checked By :** *AM* **Date:** *19-Dec-2016*

Project Name : *Upper New Street, Barnsley*

Client : *Glanville Consultants*

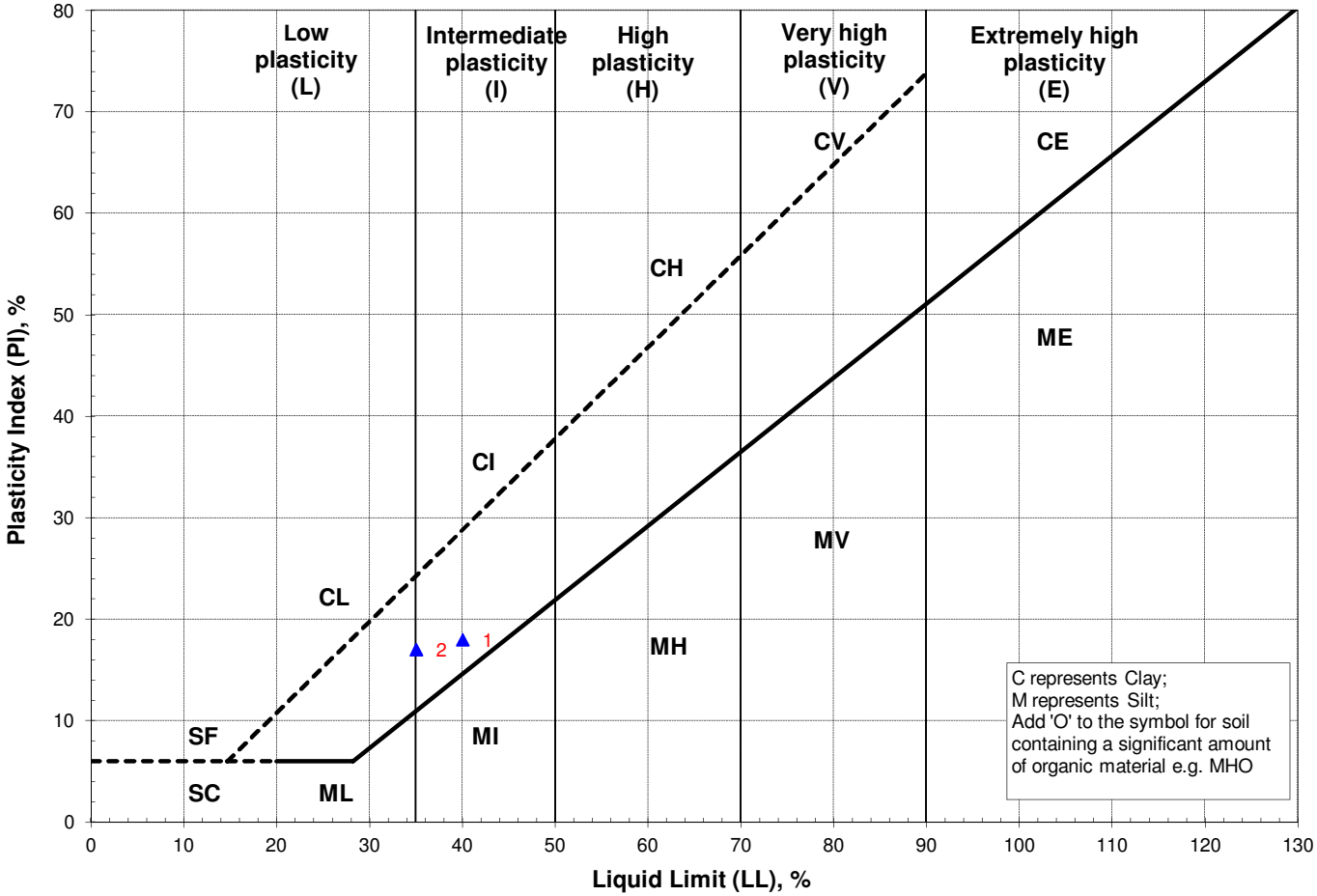
Plot No	TH No.	Depth (m)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Class-ification	% Passing 425µm (%)	Visual Description
1	*TP2*	*2.85*	*10.5*	*40*	*22*	*18*	*CI*	*17*	*Grey brown, clayey, slightly sandy, fine to coarse, subangular to subrounded mudstone GRAVEL.*
2	*TP5*	*1.30*	*17.4*	*35*	*18*	*17*	*CL/CI*	*84*	*Brown veined light grey patched orange brown, speckled black, slightly sandy, slightly gravelly CLAY. Gravel consists of fine and medium, subangular siltstone, ironstone and quartzite.*

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult

Plasticity Chart for Atterberg Limit Test Results



Sample List

1	TP2@2.85m
2	TP5@1.3m

Statistics

Liquid Limit	
Max	40
Min	35
Average	38
Plastic Limit	
Max	22
Min	18
Average	20
Plasticity Index	
Max	18
Min	17
Average	18

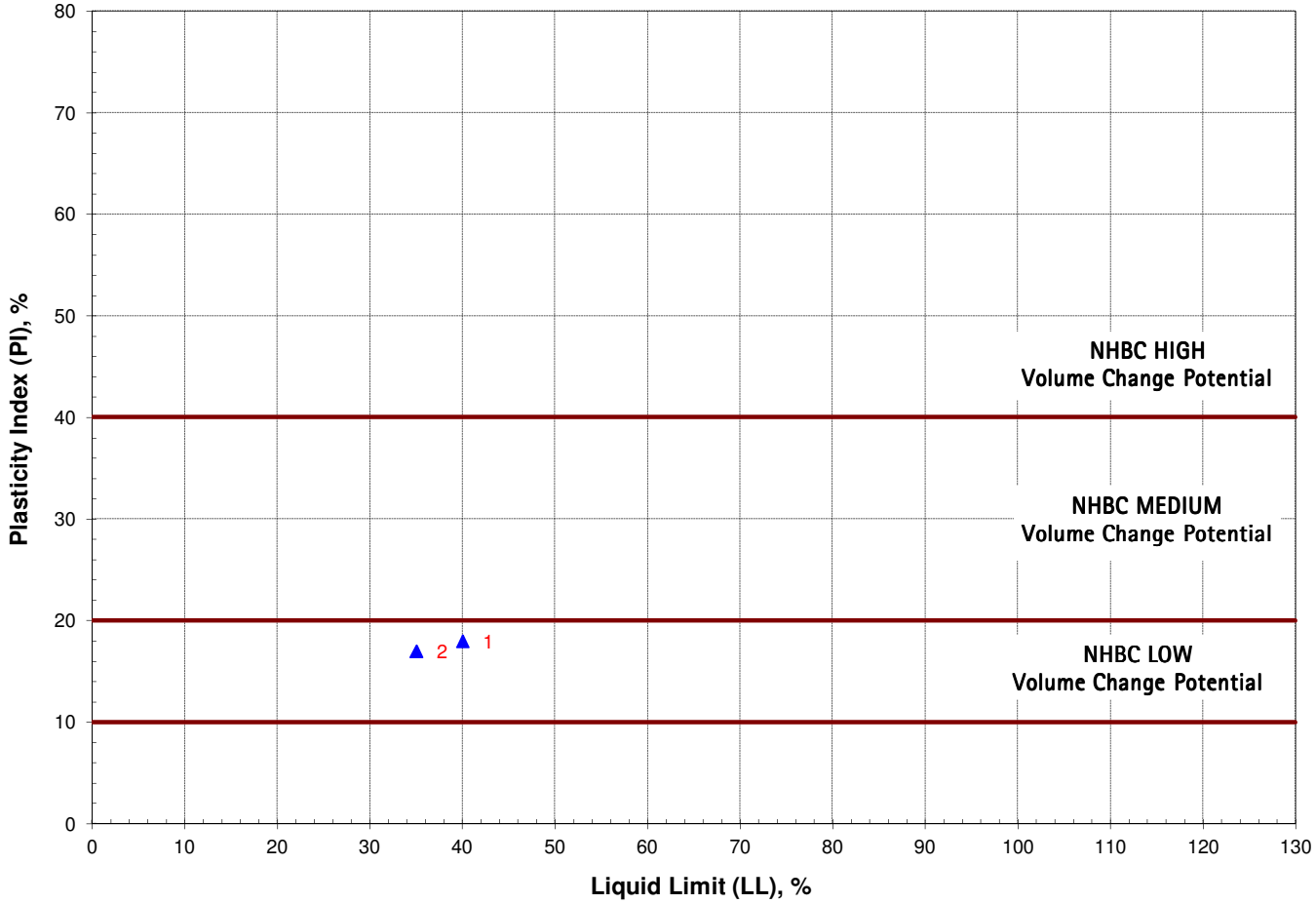
Project Name:	*Upper New Street, Barnsley*	**Project No:**	*JN0877*	**Project Engineer:**	*ADM*
Client:	*Glanville Consultants*	**Date:**	*19/12/2016*		*Figure No. 2*

Southern Testing

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8NN

ST Consult

Plot Relating Soil Plasticity to NHBC Classification for Volume Change Potential



Sample List

1	TP2@2.85m
2	TP5@1.3m

Statistics

Liquid Limit	
Max	40
Min	35
Average	38
Plastic Limit	
Max	22
Min	18
Average	20
Plasticity Index	
Max	18
Min	17
Average	18

Project Name:	*Upper New Street, Barnsley*	**Project No:**	*JN0877*	**Project Engineer:**	*ADM*
Client:	*Glanville Consultants*	**Date:**	*19/12/2016*		*Figure No. 3*

APPENDIX C

Chemical Laboratory Results

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Analytical Report Number : 16-34560

Replaces Analytical Report Number : 16-34560, issue no. 1

Project / Site name:	Upper New Street, Barnsley	**Samples received on:**	02/12/2016
Your job number:	JN0877	**Samples instructed on:**	02/12/2016
Your order number:		**Analysis completed by:**	14/12/2016
Report Issue Number:	2	**Report issued on:**	14/12/2016
Samples Analysed:	15 soil samples		

Signed:

Dr Irma Doyle
Senior Account Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668000	668001	668002	668003	668004
Sample Reference				TP1	TP2	TP3	TP4	TP4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.45	0.60	0.95
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	19	14	23	11	15
Total mass of sample received	kg	0.001	NONE	0.89	1.2	1.2	1.4	1.1
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	< 0.001	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	< 0.001	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	5.9	8.2	8.5	9.3	8.6
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	10	3.4	3.8	1.6	2.3
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.94	< 0.05	< 0.05	0.30
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	0.70	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.43	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.76	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	6.8	0.33	0.67	2.0
Anthracene	mg/kg	0.1	MCERTS	< 0.10	1.7	0.70	0.23	0.71
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	14	0.92	1.4	5.5
Pyrene	mg/kg	0.1	MCERTS	< 0.10	13	0.77	1.3	4.7
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	9.9	0.83	0.73	3.1
Chrysene	mg/kg	0.05	MCERTS	< 0.05	8.6	0.75	0.81	2.7
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	7.8	0.97	0.69	2.6
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	7.4	1.0	0.59	1.8
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	8.0	0.73	0.60	2.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	2.8	0.65	0.32	1.1
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.81	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	3.4	1.2	0.48	1.1
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	87.4	8.84	7.80	27.6
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	27	19	55	14	34
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	1.9	1.9
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	15	13	16	28	35
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	15	14	16	28	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	40	59	66	73	92
Lead (aqua regia extractable)	mg/kg	1	MCERTS	24	88	160	130	270
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	0.5	1.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	35	18	18	18	32
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	43	59	73	170	220

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668000	668001	668002	668003	668004
Sample Reference				TP1	TP2	TP3	TP4	TP4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.45	0.60	0.95
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	11	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	47
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	53
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	-	-	-	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	7.3
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	-	-	31
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	-	-	77
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	120

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668000	668001	668002	668003	668004
Sample Reference				TP1	TP2	TP3	TP4	TP4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.45	0.60	0.95
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	< 1.0	-

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668005	668006	668007	668008	668009
Sample Reference				TP5	WS1	WS4	WS4	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.45	0.70	1.50	0.60
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	16	15	14	8.8
Total mass of sample received	kg	0.001	NONE	1.3	1.1	1.1	1.0	1.0
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.1	8.6	7.8	7.8	7.8
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.13	-
Organic Matter	%	0.1	MCERTS	1.4	1.5	1.9	1.9	1.1
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.70	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.23	< 0.10	< 0.10	< 0.10
Fluorene	mg/kg	0.1	MCERTS	< 0.10	0.41	< 0.10	< 0.10	< 0.10
Phenanthrene	mg/kg	0.1	MCERTS	0.25	2.0	0.88	0.34	< 0.10
Anthracene	mg/kg	0.1	MCERTS	< 0.10	0.54	0.16	< 0.10	< 0.10
Fluoranthene	mg/kg	0.1	MCERTS	0.34	2.1	1.9	0.68	< 0.10
Pyrene	mg/kg	0.1	MCERTS	0.34	1.7	1.7	0.61	< 0.10
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.24	1.0	1.1	0.40	< 0.10
Chrysene	mg/kg	0.05	MCERTS	0.25	1.2	1.2	0.44	< 0.05
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.79	1.1	0.28	< 0.10
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	0.89	0.95	0.26	< 0.10
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.92	0.89	0.27	< 0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	0.33	0.44	< 0.10	< 0.10
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.49	0.67	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	13.2	10.9	3.28	< 1.60
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	13	10	10	3.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.5	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (III)	mg/kg	1	NONE	12	14	13	13	18
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	14	13	14	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	43	48	29	46	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	86	61	49	46	15
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	14	15	24	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	73	71	49	61	68

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668005	668006	668007	668008	668009
Sample Reference				TP5	WS1	WS4	WS4	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.45	0.70	1.50	0.60
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	3.9	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	11	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	25	-	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	41	-	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	< 0.1	< 0.1
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	8.2	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	17	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	31	-	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	56	-	< 10	< 10

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668005	668006	668007	668008	668009
Sample Reference				TP5	WS1	WS4	WS4	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.45	0.70	1.50	0.60
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chloroethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	-	< 1.0	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	< 1.0	-	-	< 1.0

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668010	668011	668012	668013	668014
Sample Reference				WS5	WS7	TP2	TP3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.50	1.60	2.90	1.80
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	14	11	23	12	12
Total mass of sample received	kg	0.001	NONE	0.96	0.94	0.65	2.0	1.3
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.2	7.9	5.3	7.7	8.3
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.081	0.032	0.11	0.030	0.028
Organic Matter	%	0.1	MCERTS	1.0	0.6	6.3	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Phenanthrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Benzo(a)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Benzo(a)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	< 1.60	< 1.60	< 1.60	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	3.6	< 1.0	< 1.0	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	-	-
Chromium (III)	mg/kg	1	NONE	22	10	21	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	10	21	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	32	45	36	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	23	24	21	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	46	27	29	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	79	32	51	-	-

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668010	668011	668012	668013	668014
Sample Reference				WS5	WS7	TP2	TP3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.50	1.60	2.90	1.80
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 16-34560

Project / Site name: Upper New Street, Barnsley

Lab Sample Number				668010	668011	668012	668013	668014
Sample Reference				WS5	WS7	TP2	TP3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.50	1.60	2.90	1.80
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

Analytical Report Number: 16-34560
Project / Site name: Upper New Street, Barnsley
Your Order No:

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 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 representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
668001	TP2	0.50	138	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
668003	TP4	0.60	130	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**
668006	WS1	0.45	120	Loose Fibres	**Chrysotile**	< 0.001	**< 0.001**

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

Analytical Report Number : 16-34560

Project / Site name: Upper New Street, Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
668000	TP1	None Supplied	0.50	Brown clay and sand.
668001	TP2	None Supplied	0.50	Brown loam and clay with gravel and rubble.
668002	TP3	None Supplied	0.45	Brown loam and clay with gravel and rubble.
668003	TP4	None Supplied	0.60	Light brown loam and sand with gravel and rubble.
668004	TP4	None Supplied	0.95	Brown loam and sand with gravel and rubble.
668005	TP5	None Supplied	0.50	Brown loam and sand with gravel and rubble.
668006	WS1	None Supplied	0.45	Brown loam and clay with gravel and rubble.
668007	WS4	None Supplied	0.70	Brown loam and clay with gravel and rubble.
668008	WS4	None Supplied	1.50	Brown loam and clay with gravel and rubble.
668009	WS6	None Supplied	0.60	Brown loam and clay with gravel and rubble.
668010	WS5	None Supplied	0.60	Brown clay and loam.
668011	WS7	None Supplied	1.50	Light brown clay and sand with gravel.
668012	TP2	None Supplied	1.60	Light brown clay and sand.
668013	TP3	None Supplied	2.90	Grey clay and sand.
668014	WS3	None Supplied	1.80	Grey clay and sand.

Analytical Report Number : 16-34560

Project / Site name: Upper New Street, Barnsley

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in ouse method based on references.	HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft).	A006-PL	D	ISO 17025
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L076-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
TP1		S	16-34560	668000	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP1		S	16-34560	668000	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP1		S	16-34560	668000	ab	TPHCWG (Soil)	L076-PL	b
TP2		S	16-34560	668001	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP2		S	16-34560	668001	ab	Volatile organic compounds in soil	L073B-PL	b
TP2		S	16-34560	668012	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP3		S	16-34560	668002	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP3		S	16-34560	668013	a			
TP4		S	16-34560	668003	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP4		S	16-34560	668003	ab	Volatile organic compounds in soil	L073B-PL	b
TP4		S	16-34560	668004	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP4		S	16-34560	668004	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP4		S	16-34560	668004	ab	TPHCWG (Soil)	L076-PL	b
TP5		S	16-34560	668005	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP5		S	16-34560	668005	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
TP5		S	16-34560	668005	ab	TPHCWG (Soil)	L076-PL	b
WS1		S	16-34560	668006	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
WS1		S	16-34560	668006	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
WS1		S	16-34560	668006	ab	TPHCWG (Soil)	L076-PL	b
WS1		S	16-34560	668006	ab	Volatile organic compounds in soil	L073B-PL	b
WS3		S	16-34560	668014	a			
WS4		S	16-34560	668007	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
WS4		S	16-34560	668008	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
WS4		S	16-34560	668008	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
WS4		S	16-34560	668008	ab	TPHCWG (Soil)	L076-PL	b
WS5		S	16-34560	668010	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
WS6		S	16-34560	668009	ab	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
WS6		S	16-34560	668009	ab	Speciated EPA-16 PAHs in soil	L064-PL	b
WS6		S	16-34560	668009	ab	TPHCWG (Soil)	L076-PL	b
WS6		S	16-34560	668009	ab	Volatile organic compounds in soil	L073B-PL	b
WS7		S	16-34560	668011	ab	Speciated EPA-16 PAHs in soil	L064-PL	b

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature

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Analytical Report Number : 16-34566

Project / Site name:	Upper New Street, Barnsley	**Samples received on:**	02/12/2016
Your job number:	JN0877	**Samples instructed on:**	02/12/2016
Your order number:		**Analysis completed by:**	13/12/2016
Report Issue Number:	1	**Report issued on:**	13/12/2016
Samples Analysed:	3 10:1 WAC samples		

Signed:

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Waste Acceptance Criteria Analytical Results

Report No:	**16-34566**						
					Client:	**STCONSULT**	
Location	**Upper New Street, Barnsley**						
Lab Reference (Sample Number)	668047 / 668048				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	Deviating				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP4						
Depth (m)	0.95						
Solid Waste Analysis							
TOC (%)**	1.3				3%	5%	6%
Loss on Ignition (%) **	7.7				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	65				500	--	--
Total PAH (WAC-17) (mg/kg)	17				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mol / kg)	10				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:01 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0082			0.0768	0.5	2	25
Barium *	0.0662			0.617	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0021			0.020	0.5	10	70
Copper *	0.0097			0.091	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0020			0.0185	0.5	10	30
Nickel *	0.0012			0.011	0.4	10	40
Lead *	0.015			0.14	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.016			0.14	4	50	200
Chloride *	2.3			21	800	4000	25000
Fluoride	0.28			2.6	10	150	500
Sulphate *	24			220	1000	20000	50000
TDS	99			920	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	2.54			23.7	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.1						
Dry Matter (%)	85						
Moisture (%)	15						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

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Waste Acceptance Criteria Analytical Results

Report No:	**16-34566**						
					Client:	**STCONSULT**	
Location	**Upper New Street, Barnsley**						
Lab Reference (Sample Number)	668049 / 668050				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	Deviating				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS6						
Depth (m)	0.60						
Solid Waste Analysis							
TOC (%)**	0.6				3%	5%	6%
Loss on Ignition (%) **	3.8				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	7.4				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.8				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:01	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0029			0.0254	0.5	2	25
Barium *	0.0099			0.0868	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0009			0.0082	0.5	10	70
Copper *	0.0095			0.083	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0031			0.0274	0.5	10	30
Nickel *	0.0016			0.014	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0026			0.023	4	50	200
Chloride *	4.3			38	800	4000	25000
Fluoride	0.71			6.2	10	150	500
Sulphate *	8.8			77	1000	20000	50000
TDS	53			470	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	1.41			12.3	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.0						
Dry Matter (%)	91						
Moisture (%)	8.8						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

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Waste Acceptance Criteria Analytical Results

Report No:	**16-34566**						
					Client:	**STCONSULT**	
Location	**Upper New Street, Barnsley**						
Lab Reference (Sample Number)	668051 / 668052				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	Deviating				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS5						
Depth (m)	0.60						
Solid Waste Analysis							
TOC (%)**	0.6				3%	5%	6%
Loss on Ignition (%) **	4.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 1.6				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.1				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1			10:01	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
	mg/l			mg/kg			
Arsenic *	0.0034			0.0309	0.5	2	25
Barium *	0.0179			0.163	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0007			0.0062	0.5	10	70
Copper *	0.0072			0.065	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0030			0.0276	0.5	10	30
Nickel *	0.0012			0.011	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0016			0.015	4	50	200
Chloride *	1.7			15	800	4000	25000
Fluoride	0.77			7.0	10	150	500
Sulphate *	6.6			60	1000	20000	50000
TDS	43			390	4000	60000	100000
Phenol Index (Monhydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	1.62			14.7	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.96						
Dry Matter (%)	86						
Moisture (%)	14						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and I2 cannot be held responsible for any discrepencies with current legislation

*= UKAS accredited (liquid eluate analysis only)
** = MCERTS accrediited

Analytical Report Number : 16-34566

Project / Site name: Upper New Street, Barnsley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
668047	TP4	None Supplied	0.95	Brown loam and sand with gravel and rubble.
668049	WS6	None Supplied	0.60	Brown loam and clay with gravel and rubble.
668051	WS5	None Supplied	0.60	Brown clay and loam.

Analytical Report Number : 16-34566

Project / Site name: Upper New Street, Barnsley

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-UK	W	NONE
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L047-PL	D	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	in-house method	L076-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L004-PL	W	NONE
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L023-PL	D	MCERTS

Analytical Report Number : 16-34566

Project / Site name: Upper New Street, Barnsley

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

The results included within the report are representative of the samples submitted for analysis.

Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
TP4		L	16-34566	668048	a			
TP4		S	16-34566	668047	ab	BTEX in soil (Monoaromatics)	L073B-PL	b
TP4		S	16-34566	668047	ab	Mineral Oil (Soil) C10 - C40	L076-PL	b
TP4		S	16-34566	668047	ab	PCB's By GC-MS in soil	L027-PL	b
TP4		S	16-34566	668047	ab	Speciated WAC-17 PAHs in soil	L064-PL	b
TP4		S	16-34566	668047	ab	Total BTEX in soil (Poland)	L073-PL	b
WS5		L	16-34566	668052	a			
WS5		S	16-34566	668051	ab	BTEX in soil (Monoaromatics)	L073B-PL	b
WS5		S	16-34566	668051	ab	Mineral Oil (Soil) C10 - C40	L076-PL	b
WS5		S	16-34566	668051	ab	PCB's By GC-MS in soil	L027-PL	b
WS5		S	16-34566	668051	ab	Speciated WAC-17 PAHs in soil	L064-PL	b
WS5		S	16-34566	668051	ab	Total BTEX in soil (Poland)	L073-PL	b
WS6		L	16-34566	668050	a			
WS6		S	16-34566	668049	ab	BTEX in soil (Monoaromatics)	L073B-PL	b
WS6		S	16-34566	668049	ab	Mineral Oil (Soil) C10 - C40	L076-PL	b
WS6		S	16-34566	668049	ab	PCB's By GC-MS in soil	L027-PL	b
WS6		S	16-34566	668049	ab	Speciated WAC-17 PAHs in soil	L064-PL	b
WS6		S	16-34566	668049	ab	Total BTEX in soil (Poland)	L073-PL	b

Table 1 - Tier 1 Screening Values

Contaminant	Units	Proposed Land Use					
		Residential with homegrown produce consumption	Residential without homegrown produce consumption	Open Space* (Residential)	Open Space* (Park)	Allotments	Commercial / Industrial
Arsenic (As) [2]	mg/kg	37	40	79	170	43	640
Cadmium (Cd) [2]	mg/kg	11	85	120	555	1.9	190
Trivalent Chromium (CrIII) [2]	mg/kg	910	910	1,500	33,000	18,000	8600
Hexavalent Chromium (CrVI) [2]	mg/kg	6	6	7.7	220	1.8	33
Lead (Pb) [3]	mg/kg	200	310	630	1300	80	2330
Mercury (Hg) [1,2,7]	mg/kg	7.6-11	9.2-15	40	68-71	6.0	29-320
Selenium (Se) [2]	mg/kg	250	430	1,100	1,800	88	12,000
Nickel (Ni) [2,4]	mg/kg	180	180	230	3,400	230	980
Copper (Cu) [2,4]	mg/kg	2,400	7,100	12,000	44,000	520	68,000
Zinc (Zn) [2,4]	mg/kg	3,700	40,000	81,000	170,000	620	730,000
Phenol [1,2]	mg/kg	120-380	440-1200	440-1300	440-1300	23-83	440-1300
Benzo[a]pyrene [1,5]	mg/kg	1.7-2.4	2.6	4.9	10	0.67-2.7	36
Naphthalene [1,2]	mg/kg	2.3-13	2.3-13	77-430^{+}	77-430^{+}	4.1-24	77-430^{+}
Total Cyanide (CN) [6]	mg/kg	/	/	/	/	/	/
Free Cyanide [6]	mg/kg	/	/	/	/	/	/
Complex Cyanides [6]	mg/kg	/	/	/	/	/	/
Thiocyanate [6]	mg/kg	/	/	/	/	/	/

Notes:

***** Open Space levels calculated on the basis of the exposure modelling developed in the C4SL research.

+ Screening values constrained to saturation limit. Higher values may be acceptable on a site specific basis.

[1] Where ranges of values are given for organic contaminants the screening value is dependant on the Soil $^{+}$Organic Matter.

[2] LQM/CIEH S4UL (2014). Copyright Land Quality Management Ltd reproduced with permission; Publication Number S4UL 3116. All rights reserved.

[3] C4SL (DEFRA 2014).

[4] Copper, Zinc and Nickel may have phototoxic effects at the given concentrations. Alternative criteria should be adopted for importation of Topsoil or other soils for cultivation. BS3882:2007 and BS8601:2013 suggest values of 200 to 300mg/kg for Zn, 100 to 200mg/kg for Cu, and 60 to 110mg/kg for Ni, for topsoil and subsoil, depending on pH.

[5] Based on the Surrogate Marker approach and modelled using the modified exposure parameters of C4SL but retaining 'minimal risk' HCV.

[6] Screening criteria derived on a site specific basis if test results indicate.

[7] S4UL for Methyl Mercury, higher concentrations may be tolerable if inorganic mercury is the only species present. Lower concentrations apply for elemental Mercury.

These screening values are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

APPENDIX D

Gas Monitoring Results

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SOIL GAS AND GROUND WATER DAILY RECORD SHEET

Project Name:	Upper New Steety, Barnsley	**Project Engineer:**	ADM	**Date:**	15-Dec-16	**Project No:**	JN05877
Client:	Glanville	**Operative:**	TC	**Day of the week:**	Thursday		

Well / TH No.	Atmospheric Pressure (mb) and Ambient Temperature		Land Gas Data: PID (ppm)	Differential Pressure (pa)	Flow Rate (l/hr)		Land Gas Data: CH_4 (%)	CO_2 (%)	O_2 (%)	CO (ppm)	H_2S (ppm)	Groundwater Data: Depth to base of well (m below top of cover)	Water level (m below top of cover)	Height of Cover (m above GL)	Remarks: Details of water samples (colour, clarity, odour etc)	Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions	General Remarks
WS4	1004.0	P		-0.7	<0.1	P	<0.1	1.2	19.8	0.0	0.0	3.00	2.90				
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
WS5	1004.0	P		-0.7	<0.1	P	<0.1	1.6	19.5	0.0	0.0	1.90	1.74				
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
WS6	1004.0	P		-0.7	<0.1	P	<0.1	1.0	20.4	0.0	0.0	2.30	2.19				
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					
		P				P											
		S				S											
		Time Of Readings:				Time Of Readings:						Time Of Readings:					

P = Peak Reading, S = Steady reading

Equipment Used: Interface Meter, Ion Science PhoCheck TIGER, GFM435 Gas Analyser

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SOIL GAS AND GROUND WATER DAILY RECORD SHEET

Project Name:	Upper New Street, Barnsley	**Project Engineer:**	ADM	**Date:**	20-Dec-16	**Project No:**	JN0877
Client:	Glanville Consultants	**Operative:**	TC	**Day of the week:**	Tuesday		

		Land Gas Data									Groundwater Data			Remarks		
Well / TH No.	**Atmospheric Pressure (mb) and Ambient Temperature**		**PID**	**Differential Pressure**	**Flow Rate**		**CH_4**	**CO_2**	**O_2**	**CO**	**H_2S**	**Depth to base of well**	**Water level**	**Height of Cover**	**Details of water samples (colour, clarity, odour etc)**	**Ground Conditions (soft, wet/dry, frozen etc) & Weather Conditions**	**General Remarks**
			ppm	pa	l/hr		%	%	%	ppm	ppm	m below top of cover	m below top of cover	m above GL			
WS4	1006.0	P		-0.8	0.1	P	0.0	1.9	18.9	0.0	0.0		2.92				
		S				S											
		Time Of Readings: 11:30				**Time Of Readings:** 11:30						**Time Of Readings:** 11:30					
WS5	1006.0	P		-0.8	0.1	P	0.0	1.9	18.9	0.0	0.0		1.80				
		S				S											
		Time Of Readings: 11:40				**Time Of Readings:** 11:40						**Time Of Readings:** 11:40					
WS6	1006.0	P		-0.8	0.0	P	0.0	1.2	19.9	0.0	0.0		2.33				
		S				S											
		Time Of Readings: 11:50				**Time Of Readings:** 11:50						**Time Of Readings:** 11:50					
		P				P											
		S				S											
		Time Of Readings:				**Time Of Readings:**						**Time Of Readings:**					
		P				P											
		S				S											
		Time Of Readings:				**Time Of Readings:**						**Time Of Readings:**					
		P				P											
		S				S											
		Time Of Readings:				**Time Of Readings:**						**Time Of Readings:**					

P = Peak Reading, S = Steady reading

Equipment Used: Interface Meter, Ion Science PhoCheck TIGER, GFM435 Gas Analyser

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