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DETS Report No: 18-86918

Site Reference: Claremont Road, Manchester

Project / Job Ref: A2212

Order No: A2212/JS

Sample Receipt Date: 21/12/2018

Sample Scheduled Date: 21/12/2018

Report Issue Number: 1

Reporting Date: 04/01/2019

Authorised by:

Russell Jarvis
Associate Director of Client Services

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Soil Analysis Certificate						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18	20/12/18	20/12/18	20/12/18
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS1	WS1	WS2	WS3	WS4
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212/JS	Depth (m)	0.30	1.00	None Supplied	0.60	0.40
Reporting Date: 04/01/2019	DETS Sample No	379904	379905	379906	379907	379908

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Detected	Not Detected	Not Detected	Not Detected	Detected
Sample Matrix ^(S)	Material Type	N/a	NONE	Chrysotile present in microscopic loose fibrous asbestos debris				Fibre bundle present in soil
Asbestos Type ^(S)	PLM Result	N/a	ISO17025	Chrysotile				Chrysotile
pH	pH Units	N/a	MCERTS	7.6	8.3	7.9	7.8	7.8
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Sulphate as SO ₄	mg/kg	< 200	NONE	39860	2765	713	372	531
Total Sulphate as SO ₄	%	< 0.02	NONE	3.99	0.28	0.07	0.04	0.05
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	1350	1110	195	96	67
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	1.35	1.11	0.19	0.10	0.07
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter	%	< 0.1	MCERTS	2	1.3	2.9	1.5	2.7
Arsenic (As)	mg/kg	< 2	MCERTS	14	12	11	8	18
Barium (Ba)	mg/kg	< 5	NONE	143	125	97	88	192
Beryllium (Be)	mg/kg	< 0.5	NONE	0.6	1	0.9	0.7	1
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	1.4	0.2	0.3	< 0.2	1.6
Chromium (Cr)	mg/kg	< 2	MCERTS	11	19	14	17	19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	195	30	91	24	51
Lead (Pb)	mg/kg	< 3	MCERTS	323	127	97	53	209
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	11	20	17	13	26
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3	< 3	< 3	< 3
Vanadium (V)	mg/kg	< 2	NONE	21	25	22	22	33
Zinc (Zn)	mg/kg	< 3	MCERTS	175	55	507	49	471
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	3800	239	377	483	1010

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18			
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Claremont Road, Manchester	TP / BH No	WS4	WS5			
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied			
Order No: A2212/JS	Depth (m)	0.90	0.50			
Reporting Date: 04/01/2019	DETS Sample No	379909	379910			

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected			
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	7.6	7.8			
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2			
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2			
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2			
Total Sulphate as SO ₄	mg/kg	< 200	NONE	469	714			
Total Sulphate as SO ₄	%	< 0.02	NONE	0.05	0.07			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	41	32			
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.04	0.03			
Sulphide	mg/kg	< 5	NONE	< 5	< 5			
Organic Matter	%	< 0.1	MCERTS	2.4	2.2			
Arsenic (As)	mg/kg	< 2	MCERTS	13	15			
Barium (Ba)	mg/kg	< 5	NONE	174	146			
Beryllium (Be)	mg/kg	< 0.5	NONE	0.9	0.6			
W/S Boron	mg/kg	< 1	NONE	< 1	< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.7	0.5			
Chromium (Cr)	mg/kg	< 2	MCERTS	17	15			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	39	34			
Lead (Pb)	mg/kg	< 3	MCERTS	268	218			
Mercury (Hg)	mg/kg	< 1	NONE	< 1	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	19	22			
Selenium (Se)	mg/kg	< 3	NONE	< 3	< 3			
Vanadium (V)	mg/kg	< 2	NONE	27	19			
Zinc (Zn)	mg/kg	< 3	MCERTS	272	138			
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2			
EPH (C10 - C40)	mg/kg	< 6	MCERTS	381	426			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18	20/12/18	20/12/18	20/12/18
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS1	WS1	WS2	WS3	WS4
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212/JS	Depth (m)	0.30	1.00	None Supplied	0.60	0.40
Reporting Date: 04/01/2019	DETS Sample No	379904	379905	379906	379907	379908

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	5.02	0.13	< 0.1	0.20
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.21	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.15	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	0.16	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.49	1.54	0.81	0.56	0.31
Anthracene	mg/kg	< 0.1	MCERTS	0.17	1.52	0.30	0.15	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	1.28	0.89	1.35	0.74	0.53
Pyrene	mg/kg	< 0.1	MCERTS	1.36	0.87	1.37	0.71	0.55
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.66	0.90	0.64	0.51	0.40
Chrysene	mg/kg	< 0.1	MCERTS	0.72	2.08	0.46	0.26	0.20
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.73	1.58	0.72	0.51	0.46
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.13	1.37	0.15	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.40	4.79	0.45	0.32	0.24
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.50	1.76	0.51	0.45	0.42
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.34	0.55	0.33	0.32	0.31
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	2.60	0.32	0.29	0.28
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	6.8	25.8	7.9	4.8	3.9

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - Speciated PAHs

DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18			
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Claremont Road, Manchester	TP / BH No	WS4	WS5			
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied			
Order No: A2212/JS	Depth (m)	0.90	0.50			
Reporting Date: 04/01/2019	DETS Sample No	379909	379910			

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	0.14	0.19			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	0.31	0.42			
Pyrene	mg/kg	< 0.1	MCERTS	0.31	0.41			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.32	0.35			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.31	0.33			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.14	0.16			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.38	0.37			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.22	0.20			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	2.1	2.4			

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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18	20/12/18	20/12/18	20/12/18
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS1	WS1	WS2	WS3	WS4
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212/JS	Depth (m)	0.30	1.00	None Supplied	0.60	0.40
Reporting Date: 04/01/2019	DETS Sample No	379904	379905	379906	379907	379908

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	22	< 3	< 3	< 3	9
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	1172	54	39	77	294
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	1194	54	39	77	303
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	3	< 2	5	3	2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	42	5	33	12	21
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	1478	97	149	209	241
Aromatic (C5 - C35)	mg/kg	< 21	NONE	1523	102	186	225	265
Total >C5 - C35	mg/kg	< 42	NONE	2717	156	226	301	568

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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18			
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Claremont Road, Manchester	TP / BH No	WS4	WS5			
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied			
Order No: A2212/JS	Depth (m)	0.90	0.50			
Reporting Date: 04/01/2019	DETS Sample No	379909	379910			

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2			
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3			
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	11			
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	48	162			
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	48	173			
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01			
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05			
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2			
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	12	6			
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	132	189			
Aromatic (C5 - C35)	mg/kg	< 21	NONE	145	195			
Total >C5 - C35	mg/kg	< 42	NONE	193	369			

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18	20/12/18	20/12/18	20/12/18
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS1	WS1	WS2	WS3	WS4
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212/JS	Depth (m)	0.30	1.00	None Supplied	0.60	0.40
Reporting Date: 04/01/2019	DETS Sample No	379904	379905	379906	379907	379908

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	10	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 18-86918	Date Sampled	20/12/18	20/12/18			
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Claremont Road, Manchester	TP / BH No	WS4	WS5			
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied			
Order No: A2212/JS	Depth (m)	0.90	0.50			
Reporting Date: 04/01/2019	DETS Sample No	379909	379910			

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2			
Toluene	ug/kg	< 5	MCERTS	< 5	< 5			
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2			
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2			
MTBE	ug/kg	< 5	MCERTS	< 5	< 5			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 18-86918	
Earth Environmental & Geotechnical Ltd	
Site Reference: Claremont Road, Manchester	
Project / Job Ref: A2212	
Order No: A2212/JS	
Reporting Date: 04/01/2019	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
379904	WS1	None Supplied	0.30	12.4	Black sandy clay with stones and concrete
379905	WS1	None Supplied	1.00	17.7	Brown sandy clay with stones and concrete
379906	WS2	None Supplied	None Supplied	17.7	Brown sandy clay with stones and concrete
379907	WS3	None Supplied	0.60	16	Brown sandy clay with stones
379908	WS4	None Supplied	0.40	15.1	Black sandy clay with stones and brick
379909	WS4	None Supplied	0.90	22.1	Black sandy clay with brick
379910	WS5	None Supplied	0.50	15.1	Black sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 18-86918

Earth Environmental & Geotechnical Ltd

Site Reference: Claremont Road, Manchester

Project / Job Ref: A2212

Order No: A2212/JS

Reporting Date: 04/01/2019

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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russell.jarvis@dets.co.uk

DETS Report No: 19-00085

Site Reference: Claremont Road, Manchester

Project / Job Ref: A2212

Order No: None Supplied

Sample Receipt Date: 21/12/2018

Sample Scheduled Date: 07/01/2019

Report Issue Number: 2

Reporting Date: 14/01/2019

Authorised by:

Russell Jarvis
Associate Director of Client Services

This report supersedes 19-00085, issue no.1.
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Soil Analysis Certificate						
DETS Report No: 19-00085	Date Sampled	20/12/18	20/12/18			
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Claremont Road, Manchester	TP / BH No	WS1	WS4			
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.30	0.40			
Reporting Date: 14/01/2019	DETS Sample No	380636	380637			

Determinand	Unit	RL	Accreditation			
Asbestos Quantification ^(S)	%	< 0.001	ISO17025	0.055	< 0.001	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C
Subcontracted analysis (S)



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Soil Analysis Certificate - Methodology & Miscellaneous Information				
DETS Report No: 19-00085				
Earth Environmental & Geotechnical Ltd				
Site Reference: Claremont Road, Manchester				
Project / Job Ref: A2212				
Order No: None Supplied				
Reporting Date: 14/01/2019				

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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DETS Report No: 21-06936

Site Reference: Claremont Road, Manchester

Project / Job Ref: A2212

Order No: A2212

Sample Receipt Date: 28/05/2021

Sample Scheduled Date: 28/05/2021

Report Issue Number: 1

Reporting Date: 08/06/2021

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS201	WS202	WS203	WS204	WS205
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.50	0.70	0.40	0.60	0.50
Reporting Date: 08/06/2021	DETS Sample No	546303	546304	546305	546306	546307

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE	Bundle of Chrysotile fibres				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025	Chrysotile				
pH	pH Units	N/a	MCERTS	7.8	7.8	7.9	7.6	6.8
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	1389	1253	261	391	264
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.14	0.13	0.03	0.04	0.03
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	82	166	138	90	93
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.08	0.17	0.14	0.09	0.09
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	2.1	3.5	1.3	2.9	1.3
Arsenic (As)	mg/kg	< 2	MCERTS	13	24	8	11	10
Barium (Ba)	mg/kg	< 2.5	MCERTS	279	130	39	98	110
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	1.1	0.5	1.1	1
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	1.5	< 1
Cadmium (Cd)	mg/kg	< 0.2	NONE	0.4	0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	17	12	8	18	24
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	49	64	25	25	25
Lead (Pb)	mg/kg	< 3	MCERTS	1040	228	42	34	23
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	7	10	7	14	22
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Vanadium (V)	mg/kg	< 1	MCERTS	19	24	13	24	27
Zinc (Zn)	mg/kg	< 3	MCERTS	182	72	28	38	52
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	340	9	13	< 6	< 6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS206	WS207	WS208	WS209	WS210
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.80	0.20	0.40	0.30	0.50
Reporting Date: 08/06/2021	DETS Sample No	546308	546309	546310	546311	546312

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Detected	Not Detected	Detected	Detected
Sample Matrix ^(S)	Material Type	N/a	NONE		bundles of Chrysotile and Anthophyllite fibres		Chrysotile in microscopic cement and bundles in soil	Bundles of Chrysotile fibres
Asbestos Type ^(S)	PLM Result	N/a	ISO17025		Anthophyllite Chrysotile		Chrysotile	Chrysotile
pH	pH Units	N/a	MCERTS	6.8	7.1	7.0	7.1	6.9
Total Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Complex Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Sulphate as SO ₄	mg/kg	< 200	MCERTS	561	813	1090	2498	743
Total Sulphate as SO ₄	%	< 0.02	MCERTS	0.06	0.08	0.11	0.25	0.07
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	111	192	104	154	53
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.11	0.19	0.10	0.15	0.05
Sulphide	mg/kg	< 5	NONE	8	< 5	< 5	< 5	< 5
Organic Matter (SOM)	%	< 0.1	MCERTS	3.1	2.4	4.9	5.7	4.9
Arsenic (As)	mg/kg	< 2	MCERTS	16	27	38	59	30
Barium (Ba)	mg/kg	< 2.5	MCERTS	125	201	265	629	269
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.9	1.2	1.6	0.8	1.3
W/S Boron	mg/kg	< 1	NONE	2.5	< 1	< 1	1.3	1.9
Cadmium (Cd)	mg/kg	< 0.2	NONE	0.3	1.1	2.7	36.6	7.4
Chromium (Cr)	mg/kg	< 2	MCERTS	13	13	21	63	25
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	65	89	294	1670	233
Lead (Pb)	mg/kg	< 3	MCERTS	179	468	271	5080	423
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	1	1.7	1
Nickel (Ni)	mg/kg	< 3	MCERTS	17	22	44	118	41
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Vanadium (V)	mg/kg	< 1	MCERTS	23	31	42	41	36
Zinc (Zn)	mg/kg	< 3	MCERTS	99	482	642	3020	1550
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40)	mg/kg	< 6	MCERTS	< 6	41	23	969	142

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS201	WS202	WS203	WS204	WS205
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.50	0.70	0.40	0.60	0.50
Reporting Date: 08/06/2021	DETS Sample No	546303	546304	546305	546306	546307

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.14	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.63	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	1.23	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	1.29	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.67	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.69	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.91	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.29	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.67	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.35	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.36	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	7.2	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS206	WS207	WS208	WS209	WS210
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.80	0.20	0.40	0.30	0.50
Reporting Date: 08/06/2021	DETS Sample No	546308	546309	546310	546311	546312

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	0.19	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.19	0.13
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.14	0.17
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.58	0.19	0.70	0.53
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.24	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.65	0.31	1.58	0.79
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.64	0.41	1.88	0.79
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.27	0.19	0.99	0.30
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.31	0.24	1.08	0.37
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.43	0.24	2.49	0.69
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.81	0.19
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.28	0.16	2.25	0.58
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.24	< 0.1	1.26	0.40
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.25	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	0.27	< 0.1	1.15	0.40
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	3.8	1.7	15.2	5.3



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS201	WS202	WS203	WS204	WS205
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.50	0.70	0.40	0.60	0.50
Reporting Date: 08/06/2021	DETS Sample No	546303	546304	546305	546306	546307

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	165	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	168	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	5	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	31	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	36	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	204	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS206	WS207	WS208	WS209	WS210
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.80	0.20	0.40	0.30	0.50
Reporting Date: 08/06/2021	DETS Sample No	546308	546309	546310	546311	546312

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	7	5
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	192	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	199	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	9
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	12
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	3	20
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	19	10
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	216	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	238	51
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	436	59



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS201	WS202	WS203	WS204	WS205
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.50	0.70	0.40	0.60	0.50
Reporting Date: 08/06/2021	DETS Sample No	546303	546304	546305	546306	546307

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-06936	Date Sampled	26/05/21	26/05/21	26/05/21	26/05/21	26/05/21
Earth Environmental & Geotechnical Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Claremont Road, Manchester	TP / BH No	WS206	WS207	WS208	WS209	WS210
Project / Job Ref: A2212	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: A2212	Depth (m)	0.80	0.20	0.40	0.30	0.50
Reporting Date: 08/06/2021	DETS Sample No	546308	546309	546310	546311	546312

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 21-06936	
Earth Environmental & Geotechnical Ltd	
Site Reference: Claremont Road, Manchester	
Project / Job Ref: A2212	
Order No: A2212	
Reporting Date: 08/06/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
546303	WS201	None Supplied	0.50	13.1	Brown sandy clay with stones and brick
546304	WS202	None Supplied	0.70	20.8	Grey sandy clay with stones and brick
546305	WS203	None Supplied	0.40	14.8	Grey clayey sand
546306	WS204	None Supplied	0.60	26.1	Grey clay
546307	WS205	None Supplied	0.50	20.7	Brown clay
546308	WS206	None Supplied	0.80	22.2	Grey clay
546309	WS207	None Supplied	0.20	13.7	Grey gravelly clay with stones and brick
546310	WS208	None Supplied	0.40	16.7	Grey loamy clay with stones and gravel
546311	WS209	None Supplied	0.30	20	Grey loamy clay with stones and gravel
546312	WS210	None Supplied	0.50	24.4	Grey clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{U/S}

Unsuitable Sample ^{U/S}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 21-06936

Earth Environmental & Geotechnical Ltd

Site Reference: Claremont Road, Manchester

Project / Job Ref: A2212

Order No: A2212

Reporting Date: 08/06/2021

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphénylcarbazine followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received