APPENDIX 3

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Derwentside Environmental Testing Services Ltd
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DETS Report No: 24-14270

Site Reference:	Cloot Drove, Crowland
Project / Job Ref:	BRD4519
Order No:	None Supplied
Sample Receipt Date:	27/11/2024
Sample Scheduled Date:	27/11/2024
Report Issue Number:	1
Reporting Date:	17/12/2024

Authorised by:

Steve Knight
Customer Support Manager

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

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.

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Soil Analysis Certificate						
DETS Report No: 24-14270	Date Sampled	18/11/24	19/11/24	19/11/24	20/11/24	20/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS04	WS09	WS11	WS13	WS15
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.50	0.20	0.20	0.50	0.20
Reporting Date: 17/12/2024	DETS Sample No	752812	752813	752814	752815	752816

Determinand	Unit	RL	Accreditation					(n)
Asbestos Quantification (S)	%	< 0.001	ISO17025		< 0.001			< 0.001
pH	pH Units	N/a	MCERTS	7.8	6.6	6.3	7.0	7.4
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	< 10	23	42	11	66
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	< 0.01	0.02	0.04	0.01	0.07
Organic Matter (SOM)	%	< 0.1	MCERTS	0.4	15	16.1	1.5	15.3
Arsenic (As)	mg/kg	< 2	MCERTS	9	17	17	8	24
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.3	0.3	< 0.2	0.4
Chromium (Cr)	mg/kg	< 2	MCERTS	9	22	26	18	29
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	< 4	21	21	9	26
Lead (Pb)	mg/kg	< 3	MCERTS	5	43	36	12	46
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	10	20	22	18	30
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Zinc (Zn)	mg/kg	< 3	MCERTS	24	51	57	53	78

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
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Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 24-14270	Date Sampled	21/11/24	21/11/24	21/11/24	21/11/24	22/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	TP06	TP08	TP11	TP15	TP01
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.20	0.50	0.50	0.50	0.20
Reporting Date: 17/12/2024	DETS Sample No	752817	752818	752819	752820	752821

Determinand	Unit	RL	Accreditation					
Asbestos Quantification (S)	%	< 0.001	ISO17025					
pH	pH Units	N/a	MCERTS	6.6	4.3	7.0	6.3	6.3
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	26	32	14	21	13
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.03	0.03	0.01	0.02	0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	8.4	0.9	0.8	0.8	9.8
Arsenic (As)	mg/kg	< 2	MCERTS	14	19	11	5	12
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	15	15	18	12	14
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	17	8	12	4	17
Lead (Pb)	mg/kg	< 3	MCERTS	37	10	10	8	32
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	12	7	19	7	13
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Zinc (Zn)	mg/kg	< 3	MCERTS	36	17	40	19	46

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

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Soil Analysis Certificate						
DETS Report No: 24-14270	Date Sampled	22/11/24	22/11/24			
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Cloot Drove, Crowland	TP / BH No	TP02	TP04			
Project / Job Ref: BRD4519	Additional Refs	J1	J1			
Order No: None Supplied	Depth (m)	0.50	0.20			
Reporting Date: 17/12/2024	DETS Sample No	752822	752823			

Determinand	Unit	RL	Accreditation					
Asbestos Quantification (S)	%	< 0.001	ISO17025		< 0.001			
pH	pH Units	N/a	MCERTS	7.0	6.1			
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	< 10	14			
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	< 0.01	0.01			
Organic Matter (SOM)	%	< 0.1	MCERTS	0.8	7.5			
Arsenic (As)	mg/kg	< 2	MCERTS	19	12			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2			
Chromium (Cr)	mg/kg	< 2	MCERTS	19	15			
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2			
Copper (Cu)	mg/kg	< 4	MCERTS	11	11			
Lead (Pb)	mg/kg	< 3	MCERTS	11	29			
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1			
Nickel (Ni)	mg/kg	< 3	MCERTS	26	12			
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2			
Zinc (Zn)	mg/kg	< 3	MCERTS	43	34			

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

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-14270	Date Sampled	18/11/24	19/11/24	19/11/24	20/11/24	20/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS04	WS09	WS11	WS13	WS15
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.50	0.20	0.20	0.50	0.20
Reporting Date: 17/12/2024	DETS Sample No	752812	752813	752814	752815	752816

Determinand	Unit	RL	Accreditation					(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1	< 0.1	< 0.1	< 0.1	0.13
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.17	< 0.1	< 0.1	0.29
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	< 0.1	0.25
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.15
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.15
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-14270	Date Sampled	21/11/24	21/11/24	21/11/24	21/11/24	22/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	TP06	TP08	TP11	TP15	TP01
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.20	0.50	0.50	0.50	0.20
Reporting Date: 17/12/2024	DETS Sample No	752817	752818	752819	752820	752821

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1	< 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	< 0.1	< 0.1	< 0.1	< 0.1	0.14
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 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	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 24-14270	Date Sampled	22/11/24	22/11/24			
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Cloot Drove, Crowland	TP / BH No	TP02	TP04			
Project / Job Ref: BRD4519	Additional Refs	J1	J1			
Order No: None Supplied	Depth (m)	0.50	0.20			
Reporting Date: 17/12/2024	DETS Sample No	752822	752823			

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	< 0.1	< 0.1			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.16			
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6			

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 24-14270	Date Sampled	18/11/24	19/11/24	20/11/24	20/11/24	21/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS04	WS09	WS13	WS15	TP06
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.50	0.20	0.50	0.20	0.20
Reporting Date: 17/12/2024	DETS Sample No	752812	752813	752815	752816	752817

Determinand	Unit	RL	Accreditation				(n)	
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60	< 60	< 60	< 60	< 60

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 24-14270	Date Sampled	22/11/24				
BRD Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Cloot Drove, Crowland	TP / BH No	TP02				
Project / Job Ref: BRD4519	Additional Refs	J1				
Order No: None Supplied	Depth (m)	0.50				
Reporting Date: 17/12/2024	DETS Sample No	752822				

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01				
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05				
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2				
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2				
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3				
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10				
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10				
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30				
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01				
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05				
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2				
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2				
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2				
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3				
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10				
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10				
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30				
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60				

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-14270	Date Sampled	18/11/24	19/11/24	20/11/24	20/11/24	21/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS04	WS09	WS13	WS15	TP06
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.50	0.20	0.50	0.20	0.20
Reporting Date: 17/12/2024	DETS Sample No	752812	752813	752815	752816	752817

Determinand	Unit	RL	Accreditation				(n)	
Benzene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	µg/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Maidstone
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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 24-14270	Date Sampled	22/11/24				
BRD Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Cloot Drove, Crowland	TP / BH No	TP02				
Project / Job Ref: BRD4519	Additional Refs	J1				
Order No: None Supplied	Depth (m)	0.50				
Reporting Date: 17/12/2024	DETS Sample No	752822				

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2				
Toluene : HS_1D_MS	µg/kg	< 5	MCERTS	< 5				
Ethylbenzene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2				
p & m-xylene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2				
o-xylene : HS_1D_MS	µg/kg	< 2	MCERTS	< 2				
MTBE : HS_1D_MS	µg/kg	< 5	MCERTS	< 5				

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Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 24-14270	Date Sampled	20/11/24	21/11/24	22/11/24		
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Cloot Drove, Crowland	TP / BH No	WS15	TP06	TP02		
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1		
Order No: None Supplied	Depth (m)	0.20	0.20	0.50		
Reporting Date: 17/12/2024	DETS Sample No	752816	752817	752822		

Determinand	Unit	RL	Accreditation	(n)				
Phenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
0-Cresol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15		
Isophorone	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15		
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15	< 0.15	< 0.15		
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
4-Chloroanaline	mg/kg	< 0.15	NONE	< 0.15	< 0.15	< 0.15		
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Azobenzene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1		
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1	< 0.1	< 0.1		
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	ISO17025	< 0.15	< 0.15	< 0.15		
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1		

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Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 24-14270	Date Sampled	20/11/24				
BRD Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Cloot Drove, Crowland	TP / BH No	WS15				
Project / Job Ref: BRD4519	Additional Refs	J1				
Order No: None Supplied	Depth (m)	0.20				
Reporting Date: 17/12/2024	DETS Sample No	752816				

Determinand	Unit	RL	Accreditation	(n)			
PCB Congener 28	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 52	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 101	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 118	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 138	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 153	mg/kg	< 0.008	NONE	< 0.008			
PCB Congener 180	mg/kg	< 0.008	NONE	< 0.008			
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1			

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Soil Analysis Certificate - Organochlorine Pesticides						
DETS Report No: 24-14270	Date Sampled	19/11/24	20/11/24	21/11/24	22/11/24	22/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS09	WS15	TP06	TP01	TP02
Project / Job Ref: BRD4519	Additional Refs	J1	J1	J1	J1	J1
Order No: None Supplied	Depth (m)	0.20	0.20	0.20	0.20	0.50
Reporting Date: 17/12/2024	DETS Sample No	752813	752816	752817	752821	752822

Determinand	Unit	RL	Accreditation					
					(n)			
Aldrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
alpha-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
beta-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
cis-chlordane	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
delta-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Dieldrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endosulfan A	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endosulfan B	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Endrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
gamma-HCH (Lindane)	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Heptachlor	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Heptachlor epoxide	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Hexachlorobenzene (HCB)	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Isodrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Methoxychlor	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o,p' - DDD	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o,p' - DDE	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
o,p' - DDT	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
p,p' - DDD	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
p,p' - DDE	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
p,p' - DDT	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
trans-chlordane	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Trifluralin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

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Soil Analysis Certificate - Organochlorine Pesticides						
DETS Report No: 24-14270	Date Sampled	22/11/24				
BRD Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Cloot Drove, Crowland	TP / BH No	TP04				
Project / Job Ref: BRD4519	Additional Refs	J1				
Order No: None Supplied	Depth (m)	0.20				
Reporting Date: 17/12/2024	DETS Sample No	752823				

Determinand	Unit	RL	Accreditation					
Aldrin	mg/kg	< 0.02	NONE	< 0.02				
alpha-HCH	mg/kg	< 0.02	NONE	< 0.02				
beta-HCH	mg/kg	< 0.02	NONE	< 0.02				
cis-chlordane	mg/kg	< 0.02	NONE	< 0.02				
delta-HCH	mg/kg	< 0.02	NONE	< 0.02				
Dieldrin	mg/kg	< 0.02	NONE	< 0.02				
Endosulfan A	mg/kg	< 0.02	NONE	< 0.02				
Endosulfan B	mg/kg	< 0.02	NONE	< 0.02				
Endrin	mg/kg	< 0.02	NONE	< 0.02				
gamma-HCH (Lindane)	mg/kg	< 0.02	NONE	< 0.02				
Heptachlor	mg/kg	< 0.02	NONE	< 0.02				
Heptachlor epoxide	mg/kg	< 0.02	NONE	< 0.02				
Hexachlorobenzene (HCB)	mg/kg	< 0.02	NONE	< 0.02				
Isodrin	mg/kg	< 0.02	NONE	< 0.02				
Methoxychlor	mg/kg	< 0.02	NONE	< 0.02				
o,p' - DDD	mg/kg	< 0.02	NONE	< 0.02				
o,p' - DDE	mg/kg	< 0.02	NONE	< 0.02				
o,p' - DDT	mg/kg	< 0.02	NONE	< 0.02				
p,p' - DDD	mg/kg	< 0.02	NONE	< 0.02				
p,p' - DDE	mg/kg	< 0.02	NONE	< 0.02				
p,p' - DDT	mg/kg	< 0.02	NONE	< 0.02				
trans-chlordane	mg/kg	< 0.02	NONE	< 0.02				
Trifluralin	mg/kg	< 0.02	NONE	< 0.02				

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Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3

DETS Report No: 24-14270		Date Sampled	21/11/24				Landfill Waste Acceptance Criteria Limits		
BRD Environmental Ltd		Time Sampled	None Supplied				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Site Reference: Cloot Drove, Crowland		TP / BH No	TP11						
Project / Job Ref: BRD4519		Additional Refs	J1						
Order No: None Supplied		Depth (m)	0.50						
Reporting Date: 17/12/2024		DETS Sample No	752819						
Determinand	Unit	MDL							
TOC[MU]	%	< 0.1	0.4				3%	5%	6%
Loss on Ignition[MU]	%	< 0.01	3.30				--	--	10%
BTEX[MU]	mg/kg	< 0.05	< 0.05				6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1				1	--	--
Mineral Oil[MU]	mg/kg	< 10	< 10				500	--	--
Total PAH[MU]	mg/kg	< 1.7	< 1.7				100	--	--
pH[MU]	pH Units	N/a	7.0				--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1				--	To be evaluated	To be evaluated

Eluate Analysis	2:1 mg/l	8:1 mg/l		Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic[U]	0.0004	0.0006		0.010	0.5	2	25
Barium[U]	0.0028	0.0029		0.053	20	100	300
Cadmium[U]	< 0.0002	< 0.0002		< 0.002	0.04	1	5
Chromium[U]	0.0003	0.0009		0.015	0.5	10	70
Copper[U]	0.0103	0.0401		0.689	2	50	100
Mercury[U]	< 0.00004	< 0.00004		< 0.0004	0.01	0.2	2
Molybdenum[U]	0.0008	0.0005		0.010	0.5	10	30
Nickel[U]	0.0007	0.0016		0.0282	0.4	10	40
Lead[U]	0.0002	0.0005		0.009	0.5	10	50
Antimony[U]	< 0.0002	< 0.0002		< 0.002	0.06	0.7	5
Selenium[U]	< 0.0002	0.0002		0.0041	0.1	0.5	7
Zinc[U]	0.008	0.023		0.40	4	50	200
Chloride[U]	2	3		60	800	15000	25000
Fluoride[U]	0.9	< 0.5		1.1	10	150	500
Sulphate[U]	9	4		75	1000	20000	50000
TDS	47	29		548	4000	60000	100000
Phenol Index[U]	< 0.01	< 0.01		< 0.5	1	-	-
DOC[U]	12.5	13.8		248	500	800	1000
Leach Test Information							
Sample Mass (kg)	0.10						
Dry Matter (%)	90.5						
Moisture (%)	10.6						
Stage 1							
Volume Eluate L2 (litres)	0.17						
Filtered Eluate VE1 (litres)	0.11						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepencies with current legislation
M Denotes MCERTS accredited test
U Denotes ISO17025 accredited test

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 24-14270
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 17/12/2024

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
752812	WS04	J1	0.50	6.5	Light brown sandy clay with stones
752813	WS09	J1	0.20	23.7	Black loamy sand with vegetation
752814	WS11	J1	0.20	27.1	Brown sandy clay with stones
752815	WS13	J1	0.50	13.4	Light brown clay
752816	WS15	J1	0.20	24.2	Brown clay with stones
752817	TP06	J1	0.20	18.8	Brown sandy loam with vegetation
752818	TP08	J1	0.50	11.7	Light brown sandy clay
752819	TP11	J1	0.50	8.9	Light brown sandy clay
752820	TP15	J1	0.50	12.2	Brown sandy clay with stones
752821	TP01	J1	0.20	22.6	Brown loamy sand with vegetation
752822	TP02	J1	0.50	10.1	Light brown sandy clay with stones
752823	TP04	J1	0.20	17.1	Brown sandy loam with stones

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

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-14270
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 17/12/2024

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	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

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UKAS TESTING 4480

Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-14270
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 17/12/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators
DETS Report No: 24-14270
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 17/12/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
Mineral Oil (C10 - C40) (BS EN 12457-3) - EH_CU_1D_AL
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH LQM - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH LQM - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH LQM - Aliphatic >C16 - C35 - EH_CU_1D_AL
TPH LQM - Aliphatic >C35 - C44 - EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH LQM - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH LQM - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH LQM - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH LQM - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH LQM - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH LQM - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH LQM - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH LQM - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH LQM - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
Total BTEX (BS EN 12457-3) - HS_1D_MS_Total
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Parameter	Matrix Type	Suite Reference	Expanded Uncertainity Measurement	Unit
TOC	Soil	BS EN 12457	12.2	%
Loss on Ignition	Soil	BS EN 12457	22.9	%
BTEX	Soil	BS EN 12457	11.2	%
Sum of PCBs	Soil	BS EN 12457	43.4	%
Mineral Oil	Soil	BS EN 12457	9.0	%
Total PAH	Soil	BS EN 12457	18.5	%
pH	Soil	BS EN 12457	0.335	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18.0	%
Clay Content	Soil	BS 3882: 2015	15.0	%
Silt Content	Soil	BS 3882: 2015	14.0	%
Sand Content	Soil	BS 3882: 2015	13.0	%
Loss on Ignition	Soil	BS 3882: 2015	22.9	%
pH	Soil	BS 3882: 2015	0.335	Units
Carbonate	Soil	BS 3882: 2015	12.0	%
Total Nitrogen	Soil	BS 3882: 2015	12.0	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24.0	%
Potassium (Extractable)	Soil	BS 3882: 2015	20.0	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26.0	%
Zinc	Soil	BS 3882: 2015	21.6	%
Copper	Soil	BS 3882: 2015	18.2	%
Nickel	Soil	BS 3882: 2015	24.3	%
Available Sodium	Soil	BS 3882: 2015	23.0	%
Available Calcium	Soil	BS 3882: 2015	23.0	%
Electrical Conductivity	Soil	BS 3882: 2015	10.0	%

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DETS Report No: 24-14271

Site Reference:	Cloot Drove, Crowland
Project / Job Ref:	BRD4519
Order No:	None Supplied
Sample Receipt Date:	27/11/2024
Sample Scheduled Date:	27/11/2024
Report Issue Number:	1
Reporting Date:	03/12/2024

Authorised by:

Steve Knight
Customer Support Manager

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

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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Soil Analysis Certificate						
DETS Report No: 24-14271	Date Sampled	18/11/24	19/11/24	20/11/24	21/11/24	21/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS02	WS07	WS10	TP07	TP07
Project / Job Ref: BRD4519	Additional Refs	J1	J2	J2	J1	J2
Order No: None Supplied	Depth (m)	0.50	1.00	1.00	0.50	1.00
Reporting Date: 03/12/2024	DETS Sample No	752824	752825	752826	752827	752828

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	MCERTS	7.5	7.2	6.7	7.0	7.2
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	286	205	694	< 200	< 200
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.03	0.02	0.07	< 0.02	< 0.02
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	< 10	28	58	< 10	10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	< 0.01	0.03	0.06	< 0.01	0.01
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02	0.03	< 0.02	< 0.02

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
(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate						
DETS Report No: 24-14271	Date Sampled	21/11/24	21/11/24	21/11/24	21/11/24	21/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	TP08	TP10	TP14	TP14	TP15
Project / Job Ref: BRD4519	Additional Refs	D1	J2	J1	D2	J2
Order No: None Supplied	Depth (m)	1.60	1.00	0.50	1.00	1.50
Reporting Date: 03/12/2024	DETS Sample No	752829	752830	752831	752832	752833

Determinand	Unit	RL	Accreditation		(n)		(n)	(n)
pH	pH Units	N/a	MCERTS	7.5	7.9	7.5	7.7	8.0
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	375	315	408	588	231
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.04	0.03	0.04	0.06	0.02
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	77	54	22	34	12
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	0.08	0.05	0.02	0.03	0.01
Total Sulphur	%	< 0.02	NONE	0.02	< 0.02	< 0.02	0.02	< 0.02

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

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Soil Analysis Certificate						
DETS Report No: 24-14271	Date Sampled	22/11/24	22/11/24			
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Cloot Drove, Crowland	TP / BH No	TP01	TP01			
Project / Job Ref: BRD4519	Additional Refs	J2	D1			
Order No: None Supplied	Depth (m)	1.00	1.60			
Reporting Date: 03/12/2024	DETS Sample No	752834	752835			

Determinand	Unit	RL	Accreditation	(n)				
pH	pH Units	N/a	MCERTS	7.9	8.1			
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	312	408			
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.03	0.04			
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	< 10	10			
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	< 0.01	0.01			
Total Sulphur	%	< 0.02	NONE	< 0.02	< 0.02			

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

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Soil Analysis Certificate - Sample Descriptions
DETS Report No: 24-14271
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 03/12/2024

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
752824	WS02	J1	0.50	8.6	Light brown sandy clay with stones
752825	WS07	J2	1.00	17.9	Light brown clay
752826	WS10	J2	1.00	14.1	Light brown sandy clay
752827	TP07	J1	0.50	10.8	Light brown sandy clay
752828	TP07	J2	1.00	13.6	Light brown sandy clay
752829	TP08	D1	1.60	14.7	Light brown clay
752830	TP10	J2	1.00	8.6	Light brown sandy gravel with stones
752831	TP14	J1	0.50	12.7	Light brown sandy clay
752832	TP14	D2	1.00	8.1	Light brown sandy gravel with stones
752833	TP15	J2	1.50	6.5	Light brown sandy gravel with stones
752834	TP01	J2	1.00	6.5	Light brown sandy gravel with stones
752835	TP01	D1	1.60	8	Light brown sandy clay with stones

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

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Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-14271
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 03/12/2024

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	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

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Unit 1, Rose Lane Industrial Estate
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List of HWOL Acronyms and Operators
DETS Report No: 24-14271
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 03/12/2024

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym

Lee Chippington
BRD Environmental Ltd
Hawthorne Villa
1 Old Parr Road
Banbury
Oxfordshire
OX16 5HT

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 24-14686

Site Reference:	Cloot Drove, Crowland
Project / Job Ref:	BRD4519
Order No:	None Supplied
Sample Receipt Date:	05/12/2024
Sample Scheduled Date:	05/12/2024
Report Issue Number:	1
Reporting Date:	11/12/2024

Authorised by:

Steve Knight
Customer Support Manager

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

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

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Water Analysis Certificate						
DETS Report No: 24-14686	Date Sampled	29/11/24	29/11/24	29/11/24	29/11/24	29/11/24
BRD Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Cloot Drove, Crowland	TP / BH No	WS01	WS04	WS08	WS10	WS11
Project / Job Ref: BRD4519	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 11/12/2024	DETS Sample No	754294	754295	754296	754297	754298

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	7.2	7.1	7.3	7.1	7.0
Sulphate as SO_4	mg/l	< 1	ISO17025	98	138	212	261	319

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Water Analysis Certificate						
DETS Report No: 24-14686	Date Sampled	29/11/24				
BRD Environmental Ltd	Time Sampled	None Supplied				
Site Reference: Cloot Drove, Crowland	TP / BH No	WS14				
Project / Job Ref: BRD4519	Additional Refs	None Supplied				
Order No: None Supplied	Depth (m)	None Supplied				
Reporting Date: 11/12/2024	DETS Sample No	754299				

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	7.0				
Sulphate as SO_4	mg/l	< 1	ISO17025	530				

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Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 24-14686
BRD Environmental Ltd
Site Reference: Cloot Drove, Crowland
Project / Job Ref: BRD4519
Order No: None Supplied
Reporting Date: 11/12/2024

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 – C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichlorometha	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	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 liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered

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List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 11/12/2024

UKAS TESTING 0998

Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

Client:

BRD Environmental Ltd

BRD Environmental Ltd
Hawthorne Villa
1 Old Parr Road
Banbury
Oxfordshire
OX16 5HT

Soil Property Testing Ltd

15, 16, 18 Halcyon Court, St Margaret's Way,
Stukeley Meadows, Huntingdon,
Cambridgeshire, PE29 6DG

Tel: 01480 455579
Email: enquiries@soilpropertytesting.com
Website: www.soilpropertytesting.com

Samples Submitted By:

BRD Environmental Ltd

Samples Labelled:

Cloot Drove, Crowland

Approved Signatories:

☑ **J.C. Garner B.Eng (Hons) FGS**
Technical Director & Quality Manager

☐ **W. Johnstone**
Materials Lab Manager

Date Received: 26/11/2024

Samples Tested Between: 26/11/2024 **and** 11/12/2024

Remarks:

For the attention of Lee Chippington
Your Reference No: BRD4519

Notes:

1. All remaining samples or remnants from this contract will be disposed of after 21 days from today, unless we are notified to the contrary.
2. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
3. Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.
4. This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.
5. The results within this report only relate to the items tested or sampled.

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 11/12/2024

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Contract	**Cloot Drove, Crowland**		
Serial No.	**46294_1**	**Target Date**	10/12/2024
Scheduled By	BRD Environmental Ltd		
Schedule Remarks			

Bore Hole No.	Type	Sample Ref.	Top Depth	Particle Size Distribution (BS1377)	Water Content (BSEN)	Liquid/Plastic Limits	Wet Sieve Preparation															Sample Remarks
TP01	B	1	1.00	1																		
TP02	J	2	1.00		1	1	1															
TP05	B	1	1.00	1																		
TP05	D	1	1.30		1	1	1															
TP08	B	1	1.00	1																		
TP09	D	2	1.20		1	1																
TP11	B	1	1.00	1																		
TP12	D	1	1.00		1	1	1															
TP12	B	1	2.10	1																		
TP13	B	1	1.00	1	1	1	1															
WS05	J	2	1.00		1	1	1															
WS09	J	2	1.00		1	1	1															
WS15	J	2	1.00		1	1	1															
Totals				**6**	**8**	**8**	**7**															**End of Schedule**

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

SUMMARY OF WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT, PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole /Pit No.	Depth (m)	Type	Ref.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasti-city Index (%)	Liquid-ity Index	Sample Preparation				Description	Class
									Method	Ret'd 0.425mm (%)	Corr'd W/C <0.425mm	Curing Time (hrs)		
TP02	1.00	J	2	**16.8**	31	16	15	0.05	Wet Sieved	21 (M)	21.3*	71	Firm yellowish brown slightly gravelly slightly sandy silty CLAY with occasional black speckling and rare recently active roots. Gravel is fine and medium angular and subangular chert and ironstone	CL
TP05	1.30	D	1	**20.6**	39	16	23	0.20	Wet Sieved	12 (M)	23.4*	70	Soft mottled bluish grey, olive and yellowish brown slightly gravelly slightly sandy silty CLAY with rare recently active roots. Gravel is fine and medium angular to subrounded chalk and chert	CI
TP09	1.20	D	2	**19.1**	32	15	17	0.24	From Natural	<1% (A)		71	Firm mottled bluish grey and olive slightly sandy silty CLAY with occasional orange staining, rare fine ironstone nodules and decayed roots	CL
TP12	1.00	D	1	**17.2**	33	16	17	0.07	Wet Sieved	19 (M)	21.2*	71	Firm mottled bluish grey and orangish brown slightly gravelly slightly sandy silty CLAY. Gravel is fine and medium angular and subangular chert and ironstone	CL
TP13	1.00	B	1	**18.9**	27	16	11	0.26	Wet Sieved	5 (M)	19.9*	26	Brown slightly gravelly sandy silty CLAY	CL
WS05	1.00	J	2	**17.5**	44	18	26	-0.02	Wet Sieved	11 (M)	19.7*	72	Stiff mottled bluish grey and yellowish brown slightly gravelly slightly sandy silty CLAY with rare decayed roots. Gravel is fine and medium angular and subangular chert	CI
WS09	1.00	J	2	**89.1**	73	45	28	1.58	Wet Sieved	7 (M)	95.8*	70	Very soft dark bluish grey slightly gravelly slightly sandy organic silty CLAY with orange staining. Gravel is fine and medium angular and subangular ironstone	MVO
WS15	1.00	J	2	**18.1**	32	16	16	0.13	Wet Sieved	18 (M)	22.1*	67	Firm yellowish brown slightly gravelly slightly sandy silty CLAY with occasional orange staining and rare recently active roots. Gravel is fine and medium angular to subrounded chert and quartzite	CL

Method Of Preparation: BS EN ISO: 17892-1: 2014+A1:2022 & BS 1377: Part 2:1990:4.2
Method of Test: BS EN ISO: 17892-1: 2014+A1:2022 & BS 1377: Part 2:1990:3.2, 4.4, 5.3, 5.4
Type of Sample Key: U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter
Comments: *Corrected water content assume material greater than 0.425mm is non-porous. See BS1377: Part 2: 1990 Clause 3 Note 1.

Table Notation: Ret'd 0.425mm: (A) = Assumed, (M) = Measured

TEST REPORT

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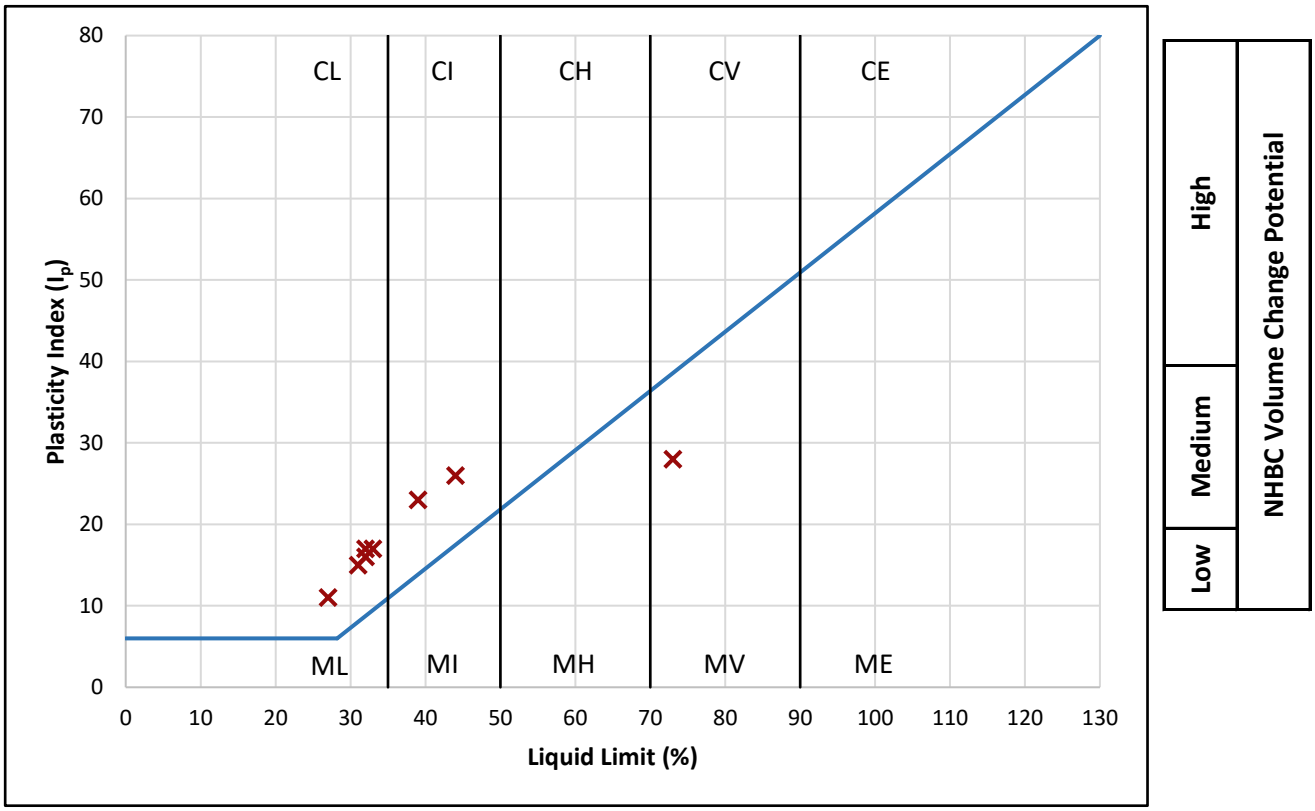
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

PLOT OF PLASTICITY INDEX AGAINST LIQUID LIMIT USING CASAGRANDE CLASSIFICATION CHART

Plasticity				
Low	Medium	High	Very High	Extremely High



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS 1377: Part 2: 1990: 4.2
Method of Test:	BS1377: Part 2: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter
Comments:	Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index

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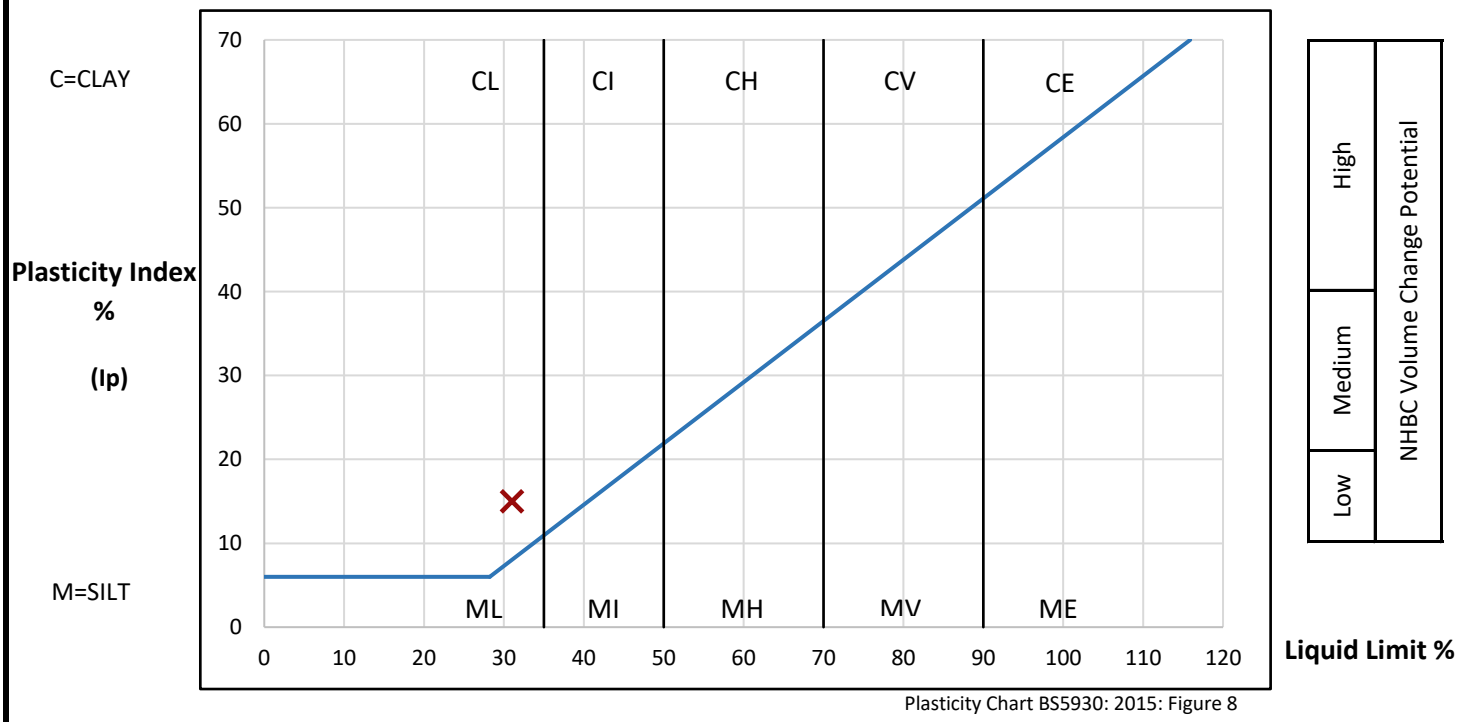
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
TP02	1.00	J	2	16.8	Firm yellowish brown slightly gravelly slightly sandy silty CLAY with occasional black speckling and rare recently active roots. Gravel is fine and medium angular and subangular chert and ironstone	

PREPARATION				Liquid Limit	31 %
Method of preparation	Wet sieved over 0.425mm sieve			Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	21 %		Plasticity Index	15 %
Corrected water content for material passing 0.425mm		21.3 %		Liquidity Index	0.05
Sample retained 2mm sieve	(Measured)	12 %		NHBC Modified (I'p)	12 %
Curing time	71 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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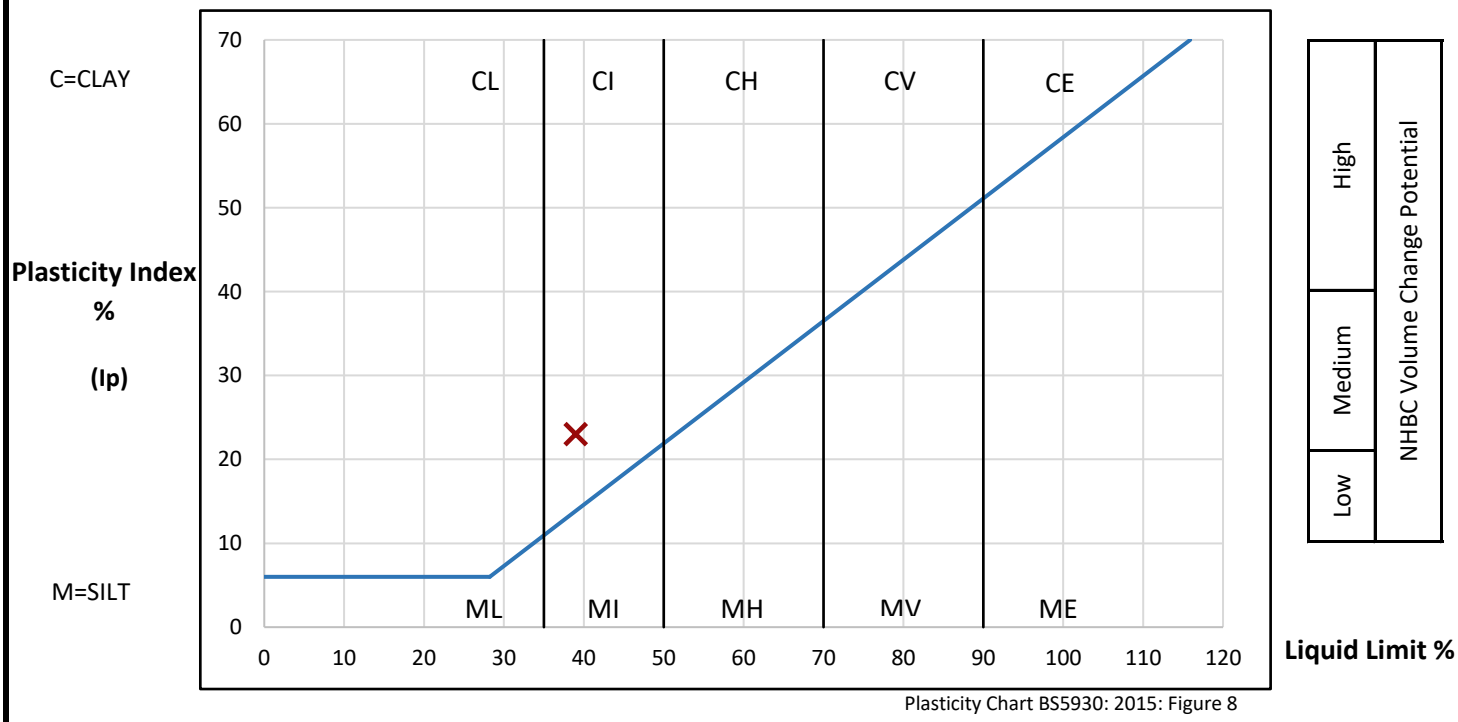
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
TP05	1.30	D	1	20.6	Soft mottled bluish grey, olive and yellowish brown slightly gravelly slightly sandy silty CLAY with rare recently active roots. Gravel is fine and medium angular to subrounded chalk and chert	

PREPARATION				Liquid Limit	39 %
Method of preparation	Wet sieved over 0.425mm sieve			Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	12 %		Plasticity Index	23 %
Corrected water content for material passing 0.425mm		23.4 %		Liquidity Index	0.20
Sample retained 2mm sieve	(Measured)	7 %		NHBC Modified (I'p)	20 %
Curing time	70 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

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DATE ISSUED: 11/12/2024

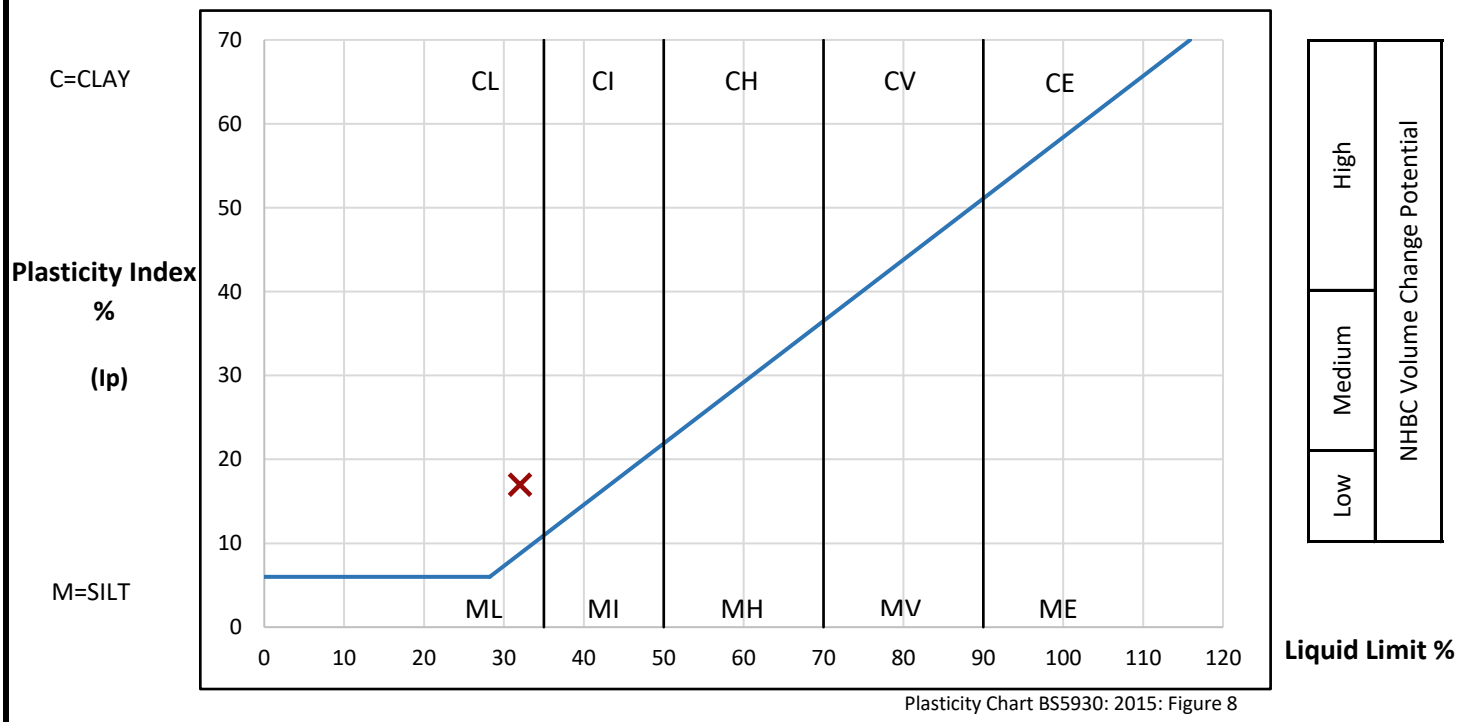
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
TP09	1.20	D	2	19.1	Firm mottled bluish grey and olive slightly sandy silty CLAY with occasional orange staining, rare fine ironstone nodules and decayed roots	

PREPARATION				Liquid Limit	32 %
Method of preparation	From natural/gravel picked out by hand			Plastic Limit	15 %
Sample retained 0.425mm sieve	(Assumed)	0 %		Plasticity Index	17 %
Corrected water content for material passing 0.425mm				Liquidity Index	0.24
Sample retained 2mm sieve	(Assumed)	<1 %		NHBC Modified (I'p)	n/a
Curing time	71 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2

Method of Test: BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4

Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter

Comments:

TEST REPORT

ISSUED BY SOIL PROPERTY TESTING LTD

DATE ISSUED: 11/12/2024

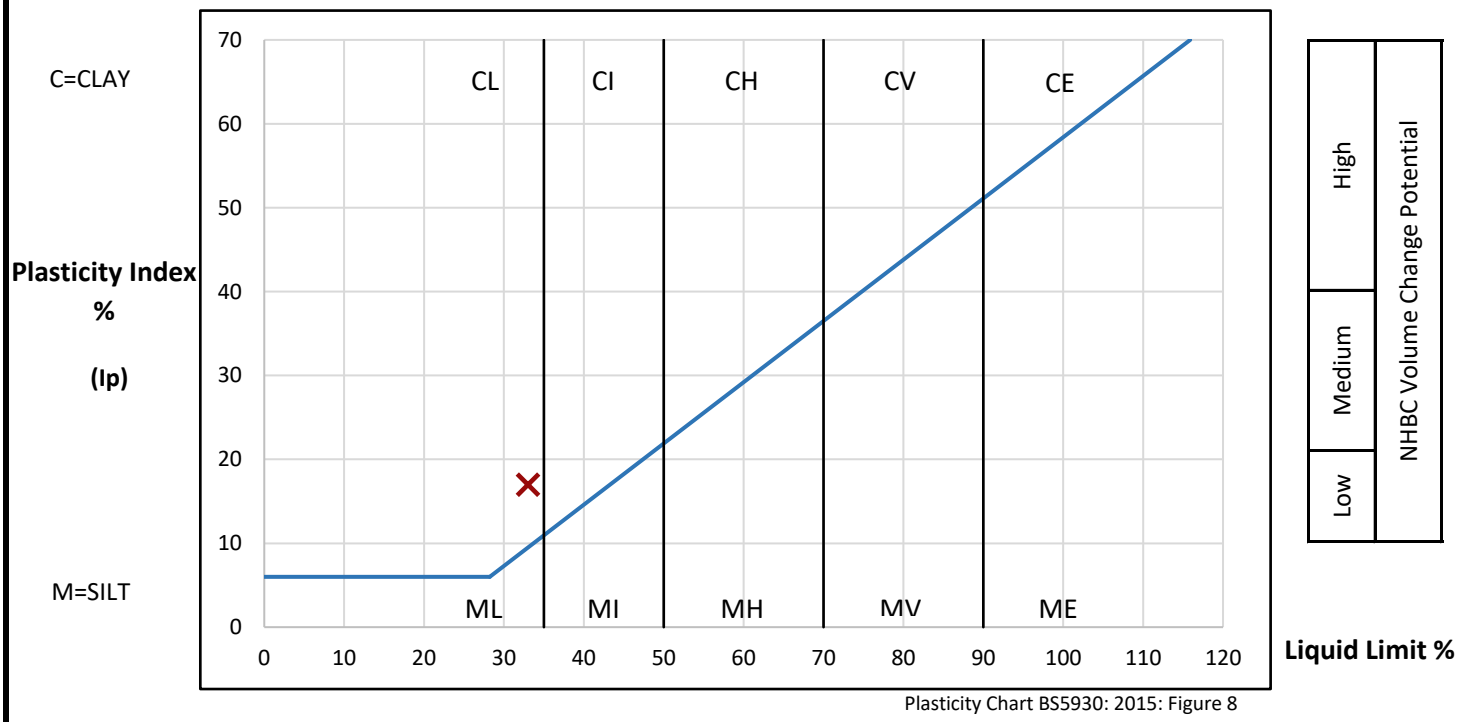
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
TP12	1.00	D	1	17.2	Firm mottled bluish grey and orangish brown slightly gravelly slightly sandy silty CLAY. Gravel is fine and medium angular and subangular chert and ironstone	

PREPARATION			Liquid Limit	33 %
Method of preparation	Wet sieved over 0.425mm sieve		Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	19 %	Plasticity Index	17 %
Corrected water content for material passing 0.425mm		21.2 %	Liquidity Index	0.07
Sample retained 2mm sieve	(Measured)	12 %	NHBC Modified (I'p)	14 %
Curing time	71 hrs	Clay Content: Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

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DATE ISSUED: 11/12/2024

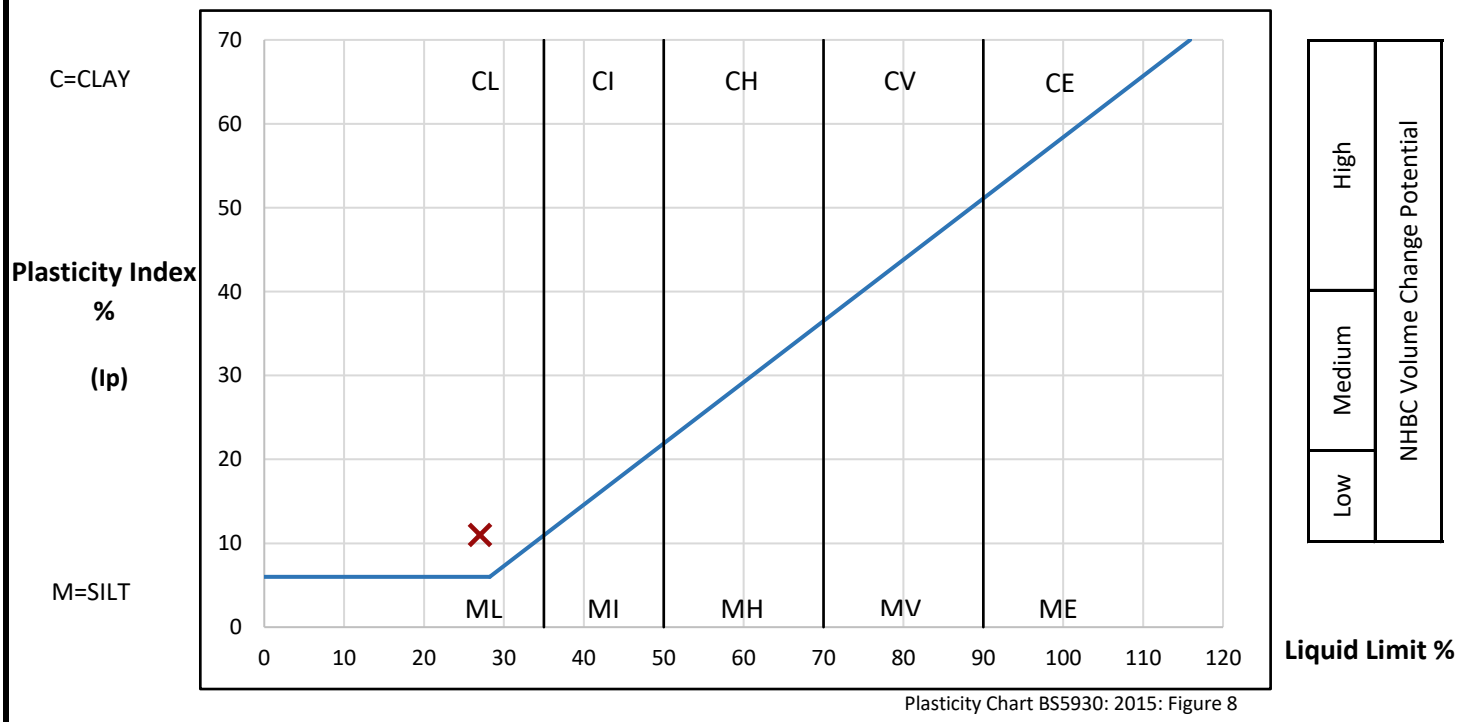
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
TP13	1.00	B	1	18.9	Brown slightly gravelly sandy silty CLAY	

PREPARATION			Liquid Limit	27 %
Method of preparation	Wet sieved over 0.425mm sieve		Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	5 %	Plasticity Index	11 %
Corrected water content for material passing 0.425mm		19.9 %	Liquidity Index	0.26
Sample retained 2mm sieve	(Measured)	2 %	NHBC Modified (I'p)	10 %
Curing time	26 hrs	Clay Content Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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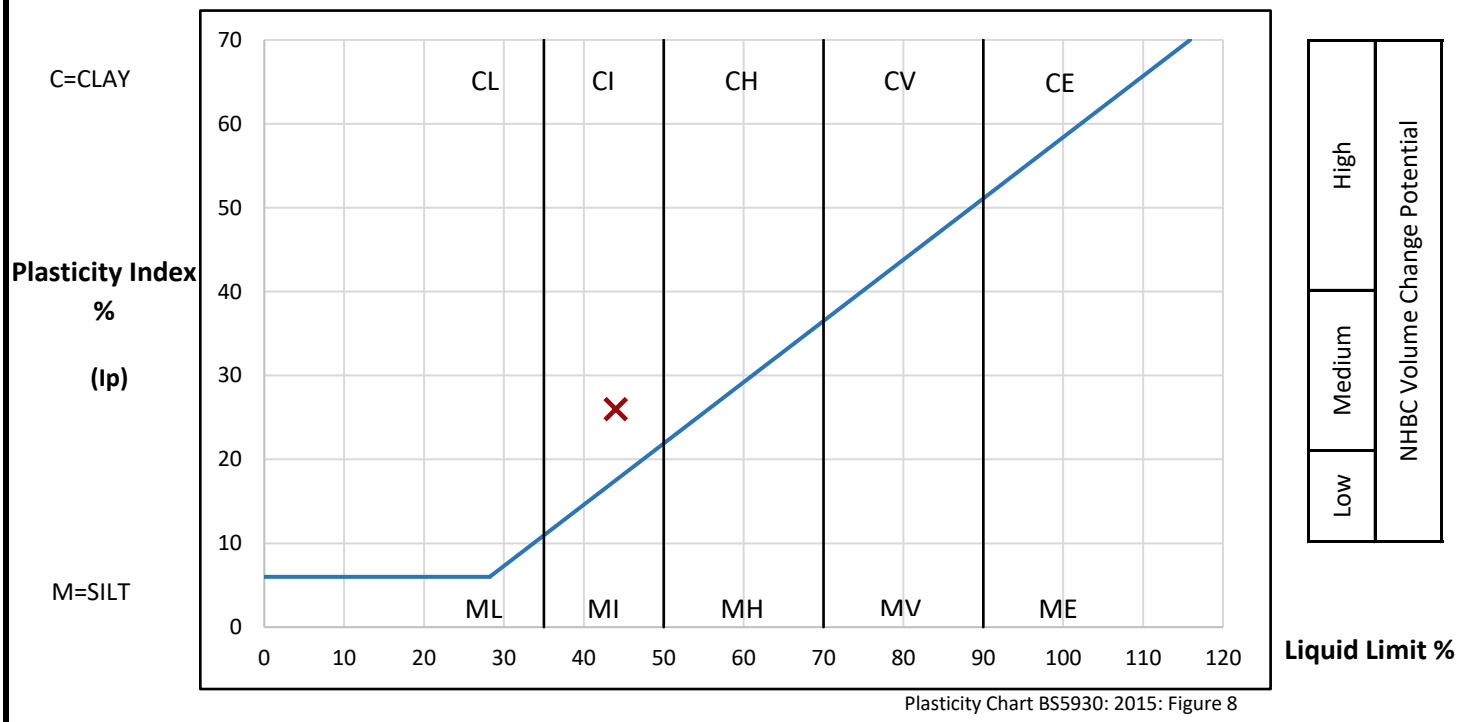
UKAS TESTING 0998

Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS05	1.00	J	2	17.5	Stiff mottled bluish grey and yellowish brown slightly gravelly slightly sandy silty CLAY with rare decayed roots. Gravel is fine and medium angular and subangular chert	

PREPARATION			Liquid Limit	44 %
Method of preparation	Wet sieved over 0.425mm sieve		Plastic Limit	18 %
Sample retained 0.425mm sieve	(Measured)	11 %	Plasticity Index	26 %
Corrected water content for material passing 0.425mm		19.7 %	Liquidity Index	-0.02
Sample retained 2mm sieve	(Measured)	9 %	NHBC Modified (I'p)	23 %
Curing time	72 hrs	Clay Content: Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

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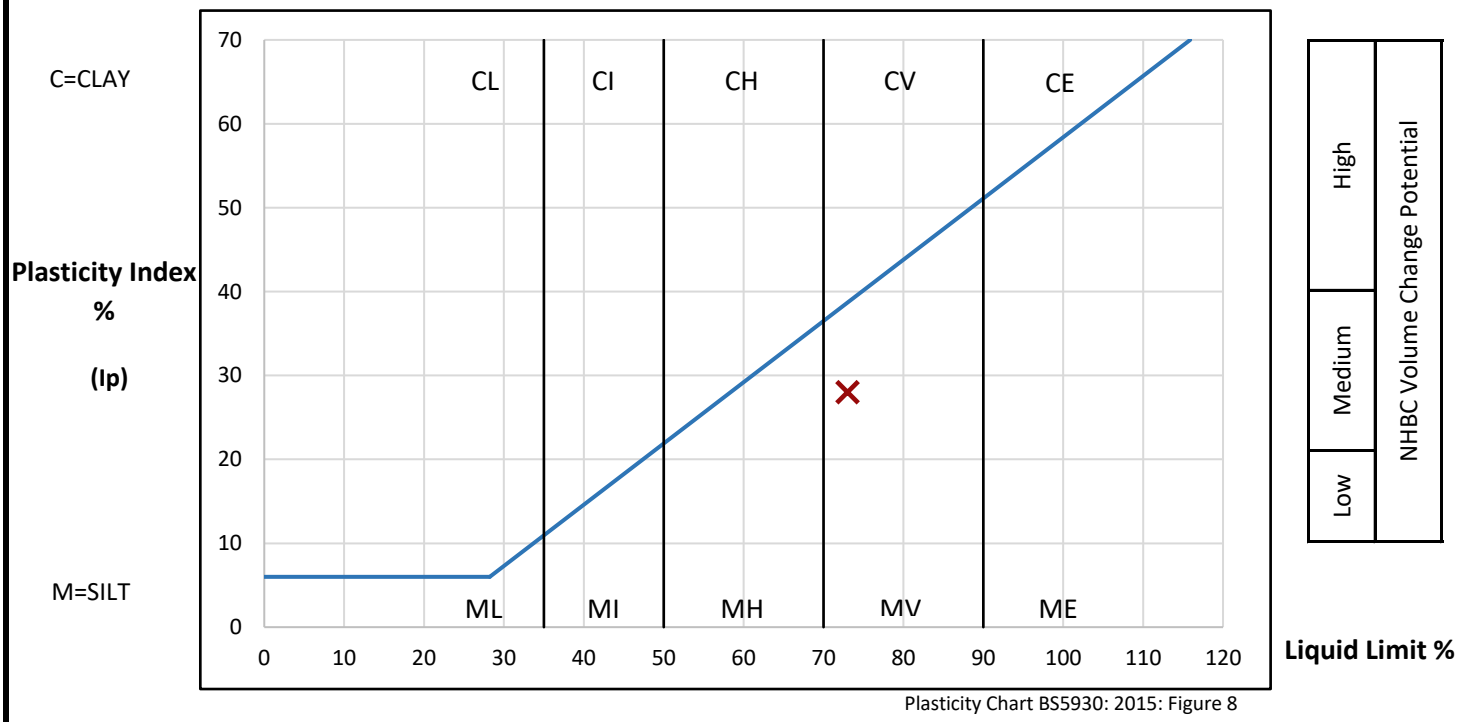
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS09	1.00	J	2	89.1	Very soft dark bluish grey slightly gravelly slightly sandy organic silty CLAY with orange staining. Gravel is fine and medium angular and subangular ironstone	Material noted as plotting below the A-Line Specimen oven dried at 50°C due to high organic content.

PREPARATION				Liquid Limit	73 %
Method of preparation	Wet sieved over 0.425mm sieve			Plastic Limit	45 %
Sample retained 0.425mm sieve	(Measured)	7 %		Plasticity Index	28 %
Corrected water content for material passing 0.425mm	Not reported			Liquidity Index	1.58
Sample retained 2mm sieve	(Measured)	4 %		NHBC Modified (I'p)	26 %
Curing time	70 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

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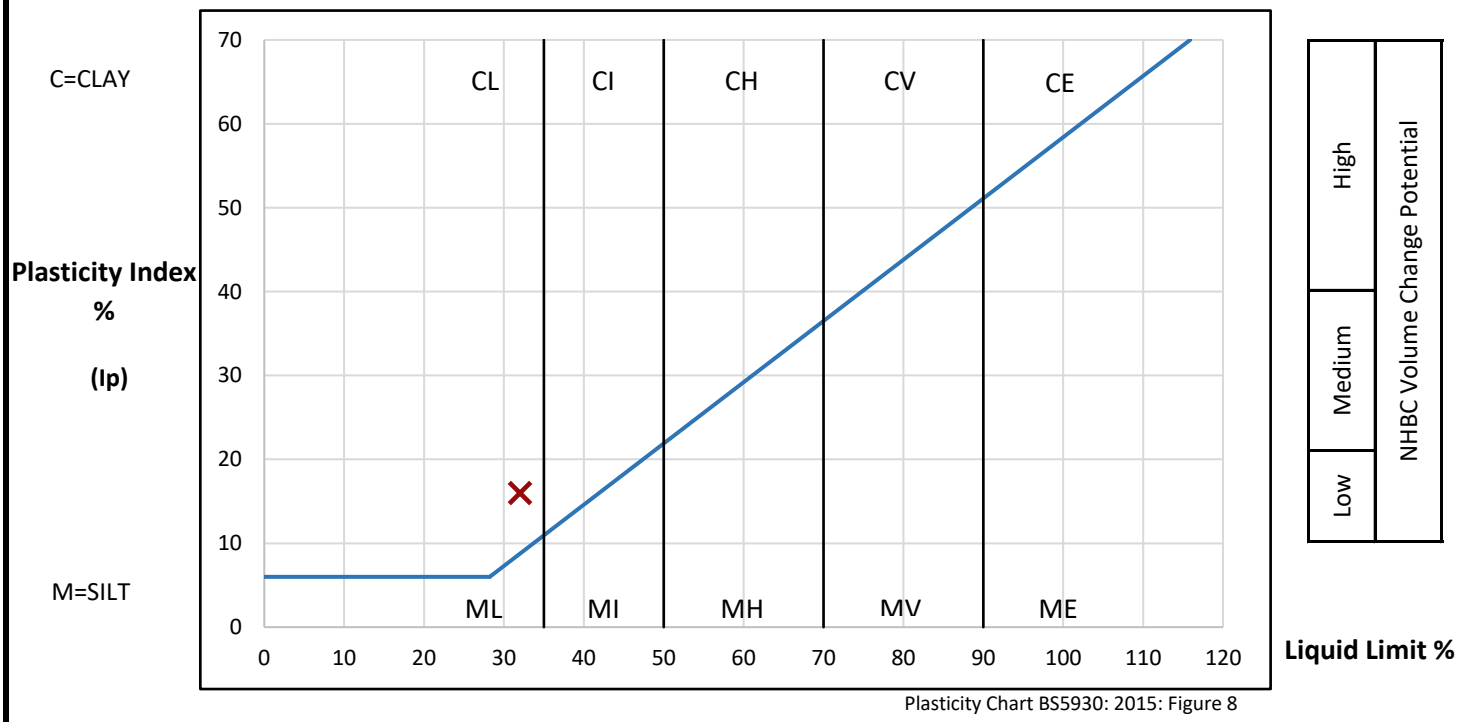
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

Borehole / Pit No.	Depth m	Sample Type	Sample Reference	Water Content (W) %	Description	Remarks
WS15	1.00	J	2	18.1	Firm yellowish brown slightly gravelly slightly sandy silty CLAY with occasional orange staining and rare recently active roots. Gravel is fine and medium angular to subrounded chert and quartzite	

PREPARATION				Liquid Limit	32 %
Method of preparation	Wet sieved over 0.425mm sieve			Plastic Limit	16 %
Sample retained 0.425mm sieve	(Measured)	18 %		Plasticity Index	16 %
Corrected water content for material passing 0.425mm		22.1 %		Liquidity Index	0.13
Sample retained 2mm sieve	(Measured)	16 %		NHBC Modified (I'p)	13 %
Curing time	67 hrs	Clay Content	Not analysed	Derived Activity	Not analysed



Plasticity Chart BS5930: 2015: Figure 8

Method of Preparation:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2
Method of Test:	BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4
Type of Sample Key:	U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:	Corrected water content assume material greater than 0.425mm non-porous. See BS1377: Part2: 1990 Clause 3 Note 1 Volume Change Potential: NHBC Standards Chapter 4.2 Unmodified Plasticity Index Note: Modified Plasticity Index I'p = Ip x (% less than 425microns/100)

TEST REPORT

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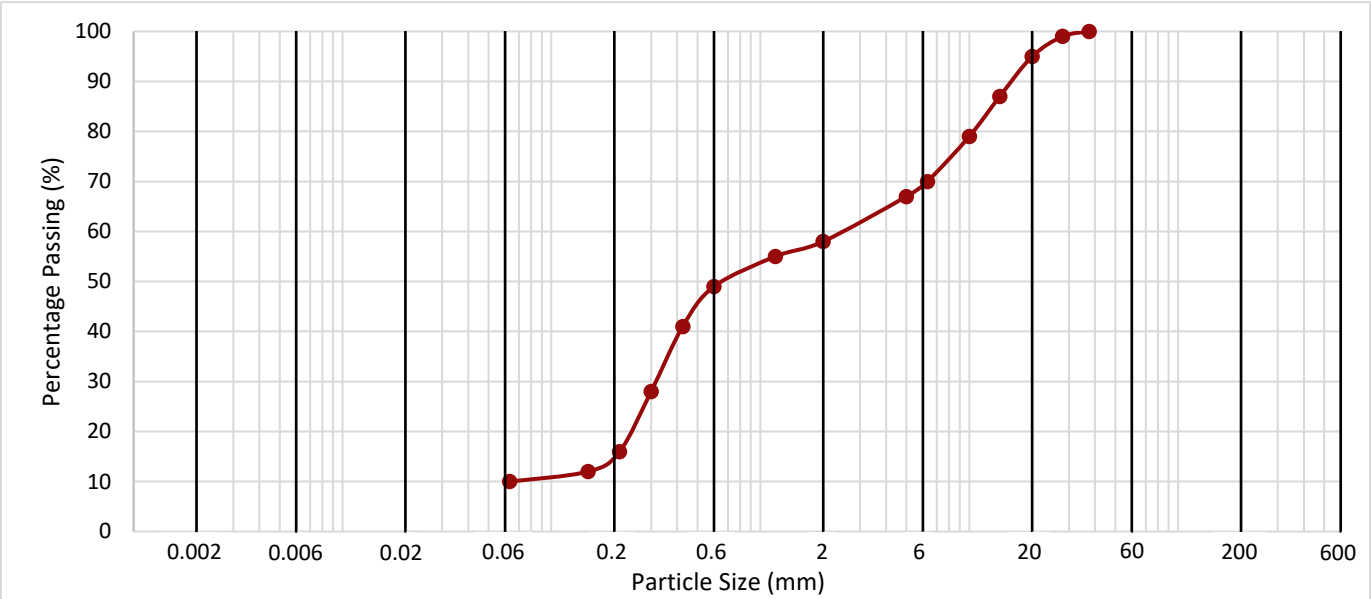
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP01	1.00	B	1	Brown clayey very gravelly SAND with rare very dark brown silty clay lumps. Gravel is black, white and brown angular to rounded chert and rare white and brown quartzite	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer

Particle Size (mm)	Passing (%)	Silt by Dry Mass (%)	Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	Sand By Dry Mass (%)
2.00	58	48
1.18	55	
0.600	49	
0.425	41	
0.300	28	
0.212	16	
0.150	12	
0.063	10	

Fines By Dry Mass (%)	
<0.063mm	10

Sieve Size (mm)	Passing (%)	2mm+ By Dry Mass (%)
300		42
125		
90		
63		
50		
37.5	100	
28	99	
20	95	
14	87	
10	79	
6.3	70	
5	67	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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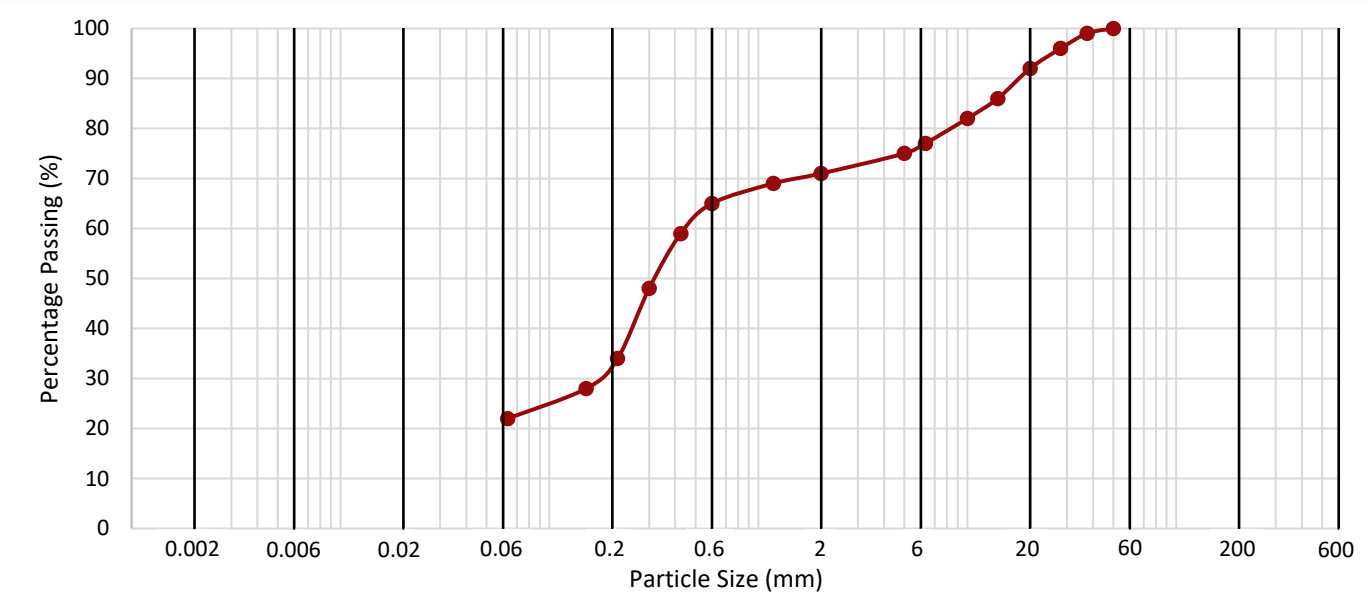
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP05	1.00	B	1	Brown clayey silty very gravelly SAND. Gravel is black, white and brown angular to rounded chert and rare white and brown quartzite	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer	Particle Size (mm)	Passing (%)	Silt by Dry Mass (%)	Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	Sand By Dry Mass (%)
2.00	71	49
1.18	69	
0.600	65	
0.425	59	
0.300	48	
0.212	34	
0.150	28	
0.063	22	

Fines By Dry Mass (%)	
<0.063mm	22

Sieve Size (mm)	Passing (%)	2mm+ By Dry Mass (%)
300		29
125		
90		
63		
50	100	
37.5	99	
28	96	
20	92	
14	86	
10	82	
6.3	77	
5	75	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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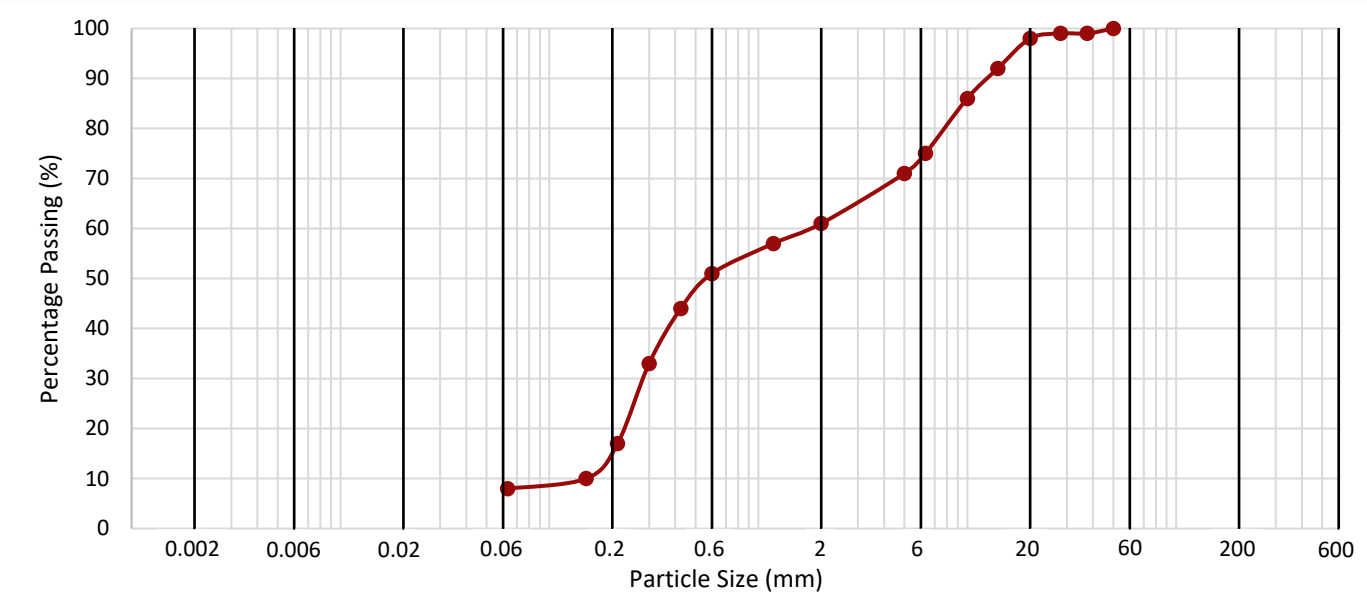
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP08	1.00	B	1	Brown slightly clayey silty very gravelly SAND. Gravel is black, white and brown angular to rounded chert and rare white and brown quartzite	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer	Particle Size (mm)	Passing (%)	Silt by Dry Mass (%)	Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	Sand By Dry Mass (%)
2.00	61	53
1.18	57	
0.600	51	
0.425	44	
0.300	33	
0.212	17	
0.150	10	
0.063	8	

Fines By Dry Mass (%)	
<0.063mm	8

Sieve Size (mm)	Passing (%)	2mm+ By Dry Mass (%)
300		39
125		
90		
63		
50	100	
37.5	99	
28	99	
20	98	
14	92	
10	86	
6.3	75	
5	71	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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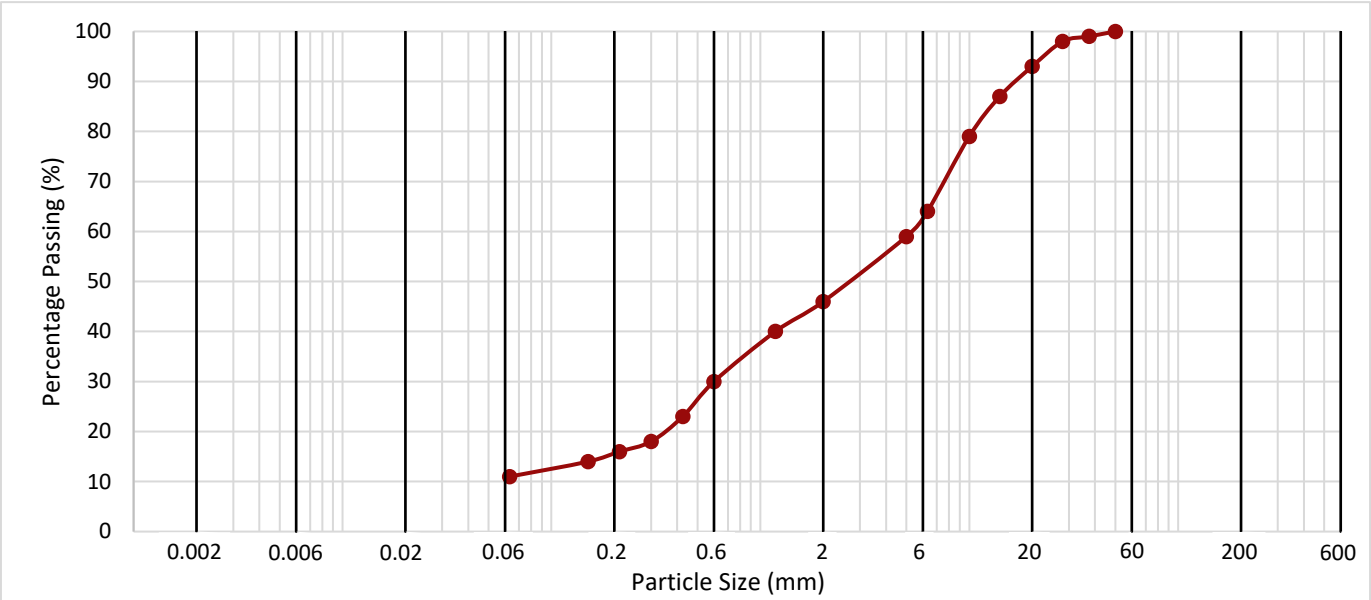
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP11	1.00	B	1	Brown clayey silty SAND and black, white and brown angular to rounded chert and rare white and brown quartzite and greyish brown limestone GRAVEL	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer	Particle Size (mm)	Passing (%)	**Silt by Dry Mass (%)**
			Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	**Sand By Dry Mass (%)**
2.00	46	**35**
1.18	40	
0.600	30	
0.425	23	
0.300	18	
0.212	16	
0.150	14	
0.063	11	

Fines By Dry Mass (%)	
<0.063mm	**11**

Sieve Size (mm)	Passing (%)	**2mm+ By Dry Mass (%)**
300		**54**
125		
90		
63		
50	100	
37.5	99	
28	98	
20	93	
14	87	
10	79	
6.3	64	
5	59	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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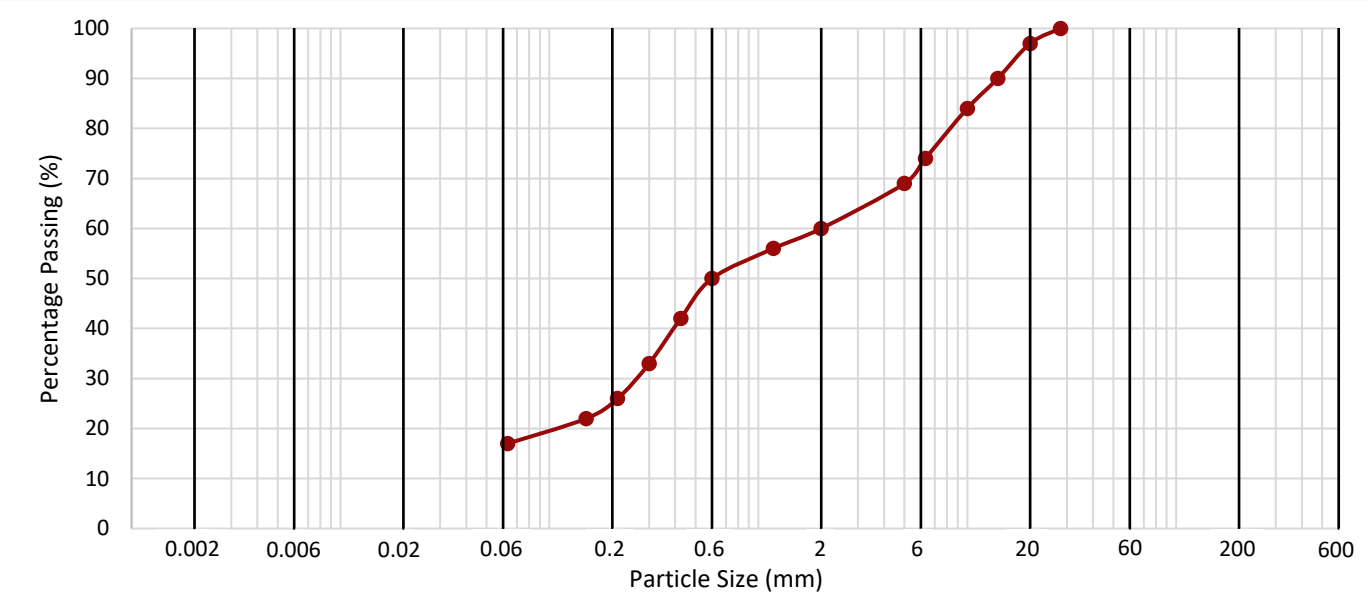
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP12	2.10	B	1	Brown clayey silty very gravelly SAND. Gravel is black, white and brown angular and subangular chert and rare white and brown quartzite	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer	Particle Size (mm)	Passing (%)	Silt by Dry Mass (%)
			Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	Sand By Dry Mass (%)
2.00	60	43
1.18	56	
0.600	50	
0.425	42	
0.300	33	
0.212	26	
0.150	22	
0.063	17	

Fines By Dry Mass (%)	
<0.063mm	17

Sieve Size (mm)	Passing (%)	2mm+ By Dry Mass (%)
300		40
125		
90		
63		
50		
37.5		
28	100	
20	97	
14	90	
10	84	
6.3	74	
5	69	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments:

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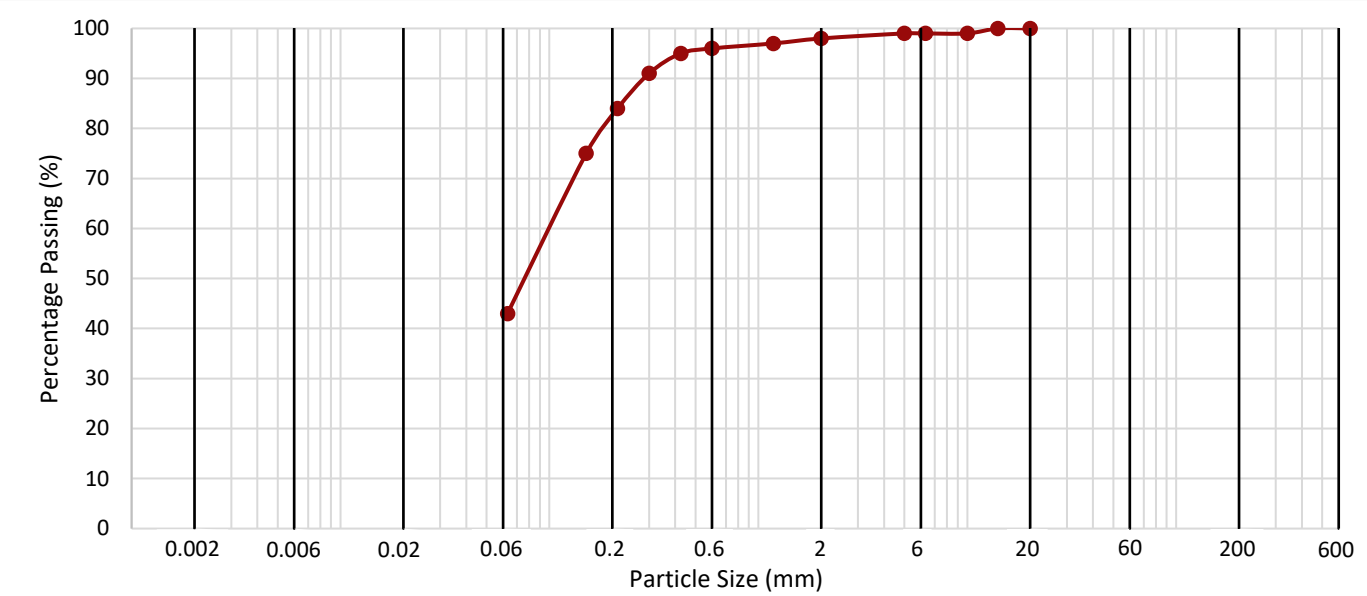
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Contract	**Cloot Drove, Crowland**
Serial No.	**46294_1**

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Borehole / Pit No.	Depth (m)	Sample Type	Sample Reference	Description	Remarks
TP13	1.00	B	1	Brown slightly gravelly sandy silty CLAY	

Method of Test:	Wet Sieve	Method of Pretreatment:	Not required



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Hydrometer	Particle Size (mm)	Passing (%)	Silt by Dry Mass (%)	Clay by Dry Mass (%)

Sieve Size (mm)	Passing (%)	Sand By Dry Mass (%)
2.00	98	55
1.18	97	
0.600	96	
0.425	95	
0.300	91	
0.212	84	
0.150	75	
0.063	43	

Fines By Dry Mass (%)	
<0.063mm	43

Sieve Size (mm)	Passing (%)	2mm+ By Dry Mass (%)
300		2
125		
90		
63		
50		
37.5		
28		
20	100	
14	100	
10	99	
6.3	99	
5	99	

Method of Preparation: BS1377: Part 1: 2016: 8.3 & 8.4.5
Method of test: BS1377: Part 2: 1990: 9.2
Type of Sample Key: U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter
Comments: