

Appendix 3

Results of Return Gas and Water Monitoring

Gas & Groundwater Monitoring Record

Site: Hillingdon Hospital

Report Ref: C14947

Date	No.	Methane (% v/v)		Carbon Dioxide (% v/v)			Oxygen (% v/v)	Flow Rate (l/hr)	VOCs (ppm)	Atmosph. Pressure (mb)	Depth of Well (ml)	LNAPL/ DNAPL	Dissolved Oxygen %	Conduc-tivity SPC $\mu\text{S}/\text{cm}$	PH	Temp $^{\circ}\text{C}$	Depth to Ground-water (mbgl)	Comments
		Peak	Steady	Peak	Steady	Min.	Max.											
17/12/19	BH1	<0.1	<0.1	0.3	0.3	19.3	19.3	<0.1	<0.1	994	1.5	None	-	-	-	-	Dry	No visual/olfactory evidence of contamination
17/12/19	WS1	<0.1	<0.1	0.1	0.1	21.0	21.0	<0.1	1.6	994	2.5	None	28.6	431	9.9	10.6	0.81*	No visual/olfactory evidence of contamination
17/12/19	WS2	<0.1	<0.1	0.2	0.2	21.3	21.3	<0.1	<0.1	994	2.7	None	16.8	1712	7.3	11.6	1.35*	No visual/olfactory evidence of contamination
17/12/19	WS3	0.3	0.3	1.1	1.1	19.3	19.3	<0.1	<0.1	994	1.7	None	15.8	1673	7.5	8.4	0.56*	No visual/olfactory evidence of contamination
17/12/19	WS4	0.2	0.2	1.9	1.9	20.4	20.4	1.4	<0.1	993	3.1	None	12.4	7338	7.6	9.4	0.43*	No visual/olfactory evidence of contamination
17/12/19	WS6	<0.1	<0.1	2.9	2.9	18.7	18.7	<0.1	<0.1	994	2.2	None	-	-	-	-	Dry	No visual/olfactory evidence of contamination
17/12/19	WS9	<0.1	<0.1	0.2	0.2	21.0	21.0	<0.1	<0.1	994	2.4	None	40.1	1595	7.3	11.4	1.31*	No visual/olfactory evidence of contamination
17/12/19	SW1	Surface Water Sample																
17/12/19	SW2	Surface Water Sample																
												None	83.3	868	8.0	8.6	-*	No visual/olfactory evidence of contamination
												None	94.2	783	7.9	8.7	-*	No visual/olfactory evidence of contamination

Notes - *Water sample taken in 1lite glass bottle, litre plastic bottle and 15ml glass vial

- Air temperature = 9 $^{\circ}\text{C}$
- Weather = Dry but cloudy
- Barometric pressures on 14/12/19= 991
- 15/12/19= 993
- 16/12/19= 994

Instrumentation= Gas Data GFM 436 Monitor, MiniRAE 3000 PID, Interface Dip Meter and YSI Pro Quatro Water Quality Meter.

Gas & Groundwater Monitoring Record

Site: Hillingdon Hospital

Report Ref: C14947

Date	No.	Methane (% v/v)		Carbon Dioxide (% v/v)			Oxygen (% v/v)		Flow Rate (l/hr)	VOCs (ppm)	Atmosph. Pressure (mb)	Depth of Well (m)	LNAPL/DNAPL	Dissolved Oxygen %	Conduc-tivity SPC $\mu\text{S}/\text{cm}$	PH	Temp $^{\circ}\text{C}$	Depth to Ground-water (mbgl)	Comments
		Peak	Steady	Peak	Steady		Min.	Max.											
10/01/20	BH1	<0.1	<0.1	0.4	0.4		19.2	19.2	<0.1	<0.1	1021	1.5	None	-	-	-	-	Dry	
10/01/20	WS1	<0.1	<0.1	0.1	0.1		18.9	18.9	<0.1	1.6	1021	2.5	None	73.3	438	9.8	9.3	0.95*	No visual/olfactory evidence of contamination
10/01/20	WS2	<0.1	<0.1	3.6	3.6		17.8	17.8	<0.1	<0.1	1021	2.7	None	25.0	1998	7.4	15.2	1.47*	No visual/olfactory evidence of contamination
10/01/20	WS3	0.7	0.7	2.1	2.1		18.1	18.1	<0.1	<0.1	1020	1.7	None	6.5	9000	7.5	9.7	1.23*	No visual/olfactory evidence of contamination
10/01/20	WS4	0.1	0.1	0.4	0.4		21.7	21.7	1.8	<0.1	1021	3.1	None	41.2	1278	8.5	8.6	0.25*	No visual/olfactory evidence of contamination
10/01/20	WS6	<0.1	<0.1	4.3	4.3		17.7	17.7	0.1	<0.1	1021	2.2	None	-	-	-	-	Dry	
10/01/20	WS9	<0.1	<0.1	1.8	1.8		19.8	19.8	<0.1	<0.1	1021	2.4	None	51.8	1195	7.8	11.6	1.69*	No visual/olfactory evidence of contamination
10/01/20	SW1	Surface Water Sample											None	102.6	1456	8.4	8.4	-*	No visual/olfactory evidence of contamination
10/01/20	SW2	Surface Water Sample											None	102.3	1541	8.7	8.9	-*	No visual/olfactory evidence of contamination

Notes - *Water sample taken in 1litre glass bottle, litre plastic bottle and 15ml glass vial

- Air temperature = 8 $^{\circ}\text{C}$
- Weather = Dry
- Barometric pressures on 07/01/20= 1021
- 08/01/20= 1016
- 09/01/20= 1007

Instrumentation= Gas Data GFM 436 Monitor, MiniRAE 3000 PID, Interface Dip Meter and YSI Pro Quatro Water Quality Meter.

GROUND ENGINEERING LIMITED, NEWARK ROAD, PETERBOROUGH, PE1 5UA

Gas & Groundwater Monitoring Record

Site: Hillingdon Hospital

Report Ref: C14947

Date	No.	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Flow Rate (l/hr)	VOCs (ppm)	Atmosph. Pressure (mb)	Depth of Well (m)	LNAPL/ DNAPL	Dissolved Oxygen %	Conduc- tivity SPC µS/cm	PH	Temp °C	Depth to Ground- water (mbgl)	Comments
		Peak	Steady	Peak	Steady	Min.	Max.											
14/01/20	BH1	<0.1	<0.1	0.4	0.4	20.5	20.5	<0.1	<0.1	995	1.5	None	-	-	-	-	Dry	
14/01/20	WS1	<0.1	<0.1	0.1	0.1	18.7	18.7	<0.1	<0.1	995	2.5	None	63.8	442	9.8	9.3	0.92*	No visual/olfactory evidence of contamination
14/01/20	WS2	<0.1	<0.1	3.3	3.3	18.3	18.3	<0.1	<0.1	995	2.7	None	50.3	1754	7.3	11.4	1.47*	No visual/olfactory evidence of contamination
14/01/20	WS3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Position covered by badly parked car
14/01/20	WS4	<0.1	<0.1	0.3	0.3	20.9	20.9	<0.1	<0.1	994	3.1	None	95.0	753	8.9	7.9	0.19*	No visual/olfactory evidence of contamination
14/01/20	WS6	<0.1	<0.1	4.4	4.3	18.3	18.3	<0.1	<0.1	995	2.2	None	-	-	-	-	Dry	
14/01/20	WS9	<0.1	<0.1	1.4	1.4	20.9	20.9	<0.1	<0.1	995	2.4	None	42.9	1359	7.4	11.6	1.95*	No visual/olfactory evidence of contamination
14/01/20	SW1	Surface Water Sample										None	170.2	1170	7.9	8.7	.*	No visual/olfactory evidence of contamination
14/01/20	SW2	Surface Water Sample										None	258.1	1158	7.8	8.9	.*	No visual/olfactory evidence of contamination

Notes - *Water sample taken in 1litre glass bottle, litre plastic bottle and 15ml glass vial

- Air temperature = 9°C
- Weather = Dry
- Barometric pressures on 07/01/20= 1025
- 08/01/20= 1020
- 09/01/20= 1012

Instrumentation= Gas Data GFM 436 Monitor, MiniRAE 3000 PID, Interface Dip Meter and YSI Pro Quatro Water Quality Meter.

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Appendix 4

Geotechnical Laboratory Test Results

LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water	pH	
														Total % Dry Wt.	Aqueous Extract mg/l			
BH1	U1	1.70 – 2.10				27	2.01	1.59	Q	171	50	86	0					SOIL CLASSIFICATION = CH 0% retained on 425µm sieve
	D2	2.20	67	23	44	24	2.01	1.55	Q	186	60	93	0					
	U2	3.70 – 4.10				30												
	D6	5.70	63	25	38	28												
	U3	6.20 – 6.60				27	1.91	1.51	Q	247	180	123	0					
	U4	9.20 – 9.60				27	1.98	1.56	Q	261	250	131	0					
	U5	12.20 – 12.60				28	1.99	1.56	Q	347	300	174	0					
BH2	U6	15.20 – 15.60				28	2.00	1.56	Q	285	400	143	0					SOIL CLASSIFICATION = CH 0% retained on 425µm sieve
	U7	18.20 – 18.60				29	1.99	1.55	Q	269	500	135	0					
	D1	0.10				15												

U – UNDISTURBED SAMPLE
D – DISTURBED SAMPLE
B – BULK SAMPLE
W – WATER SAMPLE

C.U. – CONSOLIDATED UNDRAINED
C.D. – CONSOLIDATED DRAINED
Q. – IMMEDIATE UNDRAINED
Q.M. – IMMEDIATE UNDRAINED MULTISTAGE

Aqueous Extract 2:1 Water:Soil

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LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks	
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water			pH
														Total % Dry Wt.	Aqueous Extract mg/l	mg/l	mg/l		
BH2	D2	0.20				22													SOIL CLASSIFICATION = CV 5% retained on 425µm sieve
	D3	1.70	71	25	46	41	1.93	1.49	Q	110	50	55	0						
	D4	2.25				37													
	U1	2.50 – 2.90				30													
	D5	3.00				31													
	D6	3.25				33													
	D7	4.25				32													
	U2	4.50 – 4.90				30	2.01	1.55	Q	162	60	81	0						
	D8	5.00				30													
	D9	5.50				31													
	D10	6.45				28													
	U3	7.50 – 7.80				29	2.01	1.56	Q	116	150	58	0						
	U4	10.50 – 10.90				29	2.00	1.55	Q	180	300	90	0						

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Q.M. – IMMEDIATE UNDRAINED MULTISTAGE

Aqueous Extract 2:1 Water:Soil

LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Total Dry Wt. %	Soil Aqueous Extract mg/l	Water mg/l	pH	
BH2	U5	13.50 – 13.90				29	2.02	1.57	Q	301	400	150	0					
	U6	16.50 – 16.90				29	1.97	1.53	Q	203	400	101	0					
	U7	19.50 – 19.90				27	1.97	1.54	Q	272	500	136	0					

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Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		pH		
														Total % Dry Wt.	Aqueous Extract mg/l		Water mg/l	
WS1	D6	3.50	66	26	40	36											SOIL CLASSIFICATION = CH 1% retained on 425µm sieve	
WS2	D3	0.90	47	18	29	25											SOIL CLASSIFICATION = CI 15% retained on 425µm sieve	
WS3	D6	1.50	54	19	35	30											SOIL CLASSIFICATION = CH 6% retained on 425µm sieve	
WS4	D5	1.20	44	20	24	13											SOIL CLASSIFICATION = CI 32% retained on 425µm sieve	
WS8	D8	2.50	73	24	49	33											SOIL CLASSIFICATION = CV 0% retained on 425µm sieve	
WS5	D1	0.20				30												
	D2	0.50				20												
	D3	0.90				22												
	D4	1.20				22												
	D5	1.50	59	24	35	25											SOIL CLASSIFICATION = CH 3% retained on 425µm sieve Organic Content = 5.9%	

U - UNDISTURBED SAMPLE Aqueous Extract 2:1 Water: Soil

D - DISTURBED SAMPLE

B - BULK SAMPLE

W - WATER SAMPLE

C.U. - CONSOLIDATED UNDRAINED

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LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water mg/l	pH	
														Total % Dry Wt.	Aqueous Extract mg/l			
WS5	D6	1.90				13												SOIL CLASSIFICATION = CH 0% retained on 425µm sieve
	D7	2.00				27												
	D8	2.90	68	25	43	28												
	D9	3.00				28												
	D10	3.50				28												
	D11	3.90				28												
	D12	4.00				28												
	D13	4.50				28												
	D14	4.90				30												
	D15	5.00				30												
WS6	D1	0.20				42												
	D2	0.45				12												
	D3	0.75				23												
	D4	0.90				19												
	D5	1.10				15												
Aqueous Extract 2:1 Water:Soil																		

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LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Total % Dry Wt.	Soil Aqueous Extract mg/l	Water mg/l	pH	
WS6	D6	1.20				12												SOIL CLASSIFICATION = CH 0% retained on 425µm sieve
	D7	2.20				21												
	D8	2.50				7.8												
	D9	2.80	59	21	38	20												
	D10	2.95				23												
	D11	3.00				25												
	D12	3.50				26												
	D13	3.90				29												
	D14	4.00				28												
WS7	D15	4.10				28												
	D16	4.50				28												
	D17	4.90				28												
	D1	0.05				40												
	D2	0.50				45												
	D3	0.90				34												
			C.U. - CONSOLIDATED UNDRAINED C.D. - CONSOLIDATED DRAINED Q. - IMMEDIATE UNDRAINED Q.M. - IMMEDIATE UNDRAINED MULTISTAGE						Aqueous Extract 2:1 Water:Soil									

U - UNDISTURBED SAMPLE
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Aqueous Extract 2:1 Water:Soil

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LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water mg/l	pH	
														Total % Dry Wt.	Aqueous Extract mg/l			
WS7	D4	1.20	67	23	44	25												SOIL CLASSIFICATION = CH 35% retained on 425µm sieve
	D5	1.50			26													
	D6	2.00			15													
	D7	2.50			26													
	D8	3.00			27													
	D9	3.50			28													
	D10	4.00			27													
	D11	4.50			28													
	D12	5.00			28													
	D1	0.20			31													
	D2	0.60			18													
	D3	0.90			18													
WS8	D4	1.20				37											SOIL CLASSIFICATION = CV 0% retained on 425µm sieve	
	D5	1.50	82	32	50	47												

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LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression					Sulphates (SO ₄)				Remarks
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water mg/l	pH	
														Total % Dry Wt.	Aqueous Extract mg/l			
WS8	D6	2.00				11												
	D7	2.50				29												
	D8	3.00				15												
	D9	3.50				26												
	D10	4.00				27												
	D11	4.50				31												
	D12	5.00				27												
	D1	0.30				24												
	D2	0.60				23												
	D3	0.90	41	18	23	11												
	D4	1.20				17												
	D5	1.50				23												
	D6	2.00				14												
	D7	2.50				6.8												
WS9																		SOIL CLASSIFICATION = CI 53% retained on 425µm sieve

U - UNDISTURBED SAMPLE C.U. - CONSOLIDATED UNDRAINED Aqueous Extract 2:1 Water:Soil

D - DISTURBED SAMPLE C.D. - CONSOLIDATED DRAINED

B - BULK SAMPLE Q. - IMMEDIATE UNDRAINED

W - WATER SAMPLE Q.M. - IMMEDIATE UNDRAINED MULTISTAGE

LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Bore-hole	Sample	Depth m	Classification				Density		Triaxial Compression				Sulphates (SO ₄)				Remarks	
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water mg/l		pH
														Total % Dry Wt.	Aqueous Extract mg/l			
WS9	D8	3.00	69	25	44	14												SOIL CLASSIFICATION = CH 8% retained on 425µm sieve
	D9	3.50				27												
	D10	4.00				29												
	D11	4.50				36												
	D12	5.00				30												

LABORATORY TEST RESULTS

CONTRACT MODULAR WARDS, HILLINGDON HOSPITAL

Trial-pit	Sample	Depth m	Classification				Density		Triaxial Compression				Sulphates (SO ₄)				Remarks	
			Liquid Limit %	Plastic Limit %	Plasticity Index %	Moisture Content %	Bulk Mg/m ³	Dry Mg/m ³	Type	Principal Stress Difference kPa	Cell Pressure kPa	Shear Strength kPa	Angle of Shear Resistance degrees	Soil		Water mg/l		pH
														Total % Dry Wt.	Aqueous Extract mg/l			
FIP1	D5	1.20	75	27	48	40												SOIL CLASSIFICATION = CV 4% retained on 425µm sieve Organic Content = 6.6%
FIP2	D6	1.50	69	25	44	46												SOIL CLASSIFICATION = CH 3% retained on 425µm sieve Organic Content = 6.6%

U - UNDISTURBED SAMPLE
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Q. - IMMEDIATE UNDRAINED
Q.M. - IMMEDIATE UNDRAINED MULTISTAGE

Aqueous Extract 2:1 Water:Soil

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TEST CERTIFICATE**GROUND ENGINEERING**Newark Road Peterborough
t: 01733 566566

e: admin@groundengineering.co.uk

Determination of Particle Size DistributionTested in Accordance with BS 1377-2: 1990: Clause 9.2
Sieved GradingClient: Ground Engineering Ltd
Client Address: Newark Road
Peterborough
PE1 5UA

Certificate Number: PL6930-1/34/710-2

Client Reference: C14947

Lab Job Number: PL6930-1

Date Sampled: Unknown

Date Received: 19.12.2019

Date Tested: 09.01.2020

Certificate of Sampling: N/A

Sampling Certificate No.: N/A

Sampled By: Client

Contact: James Davies

Site Name: Modular Wards
Site Address: Hillingdon Hospital**TEST RESULTS**

Laboratory Reference: PL6930-1/34

Pre-treatment for
organic material:

N/A

Client Reference: U1

Sample Description: Grey brown slightly clayey sandy GRAVEL. Gravel consists of angular to sub-rounded flint and quartzite.

Material Specification: Not Required

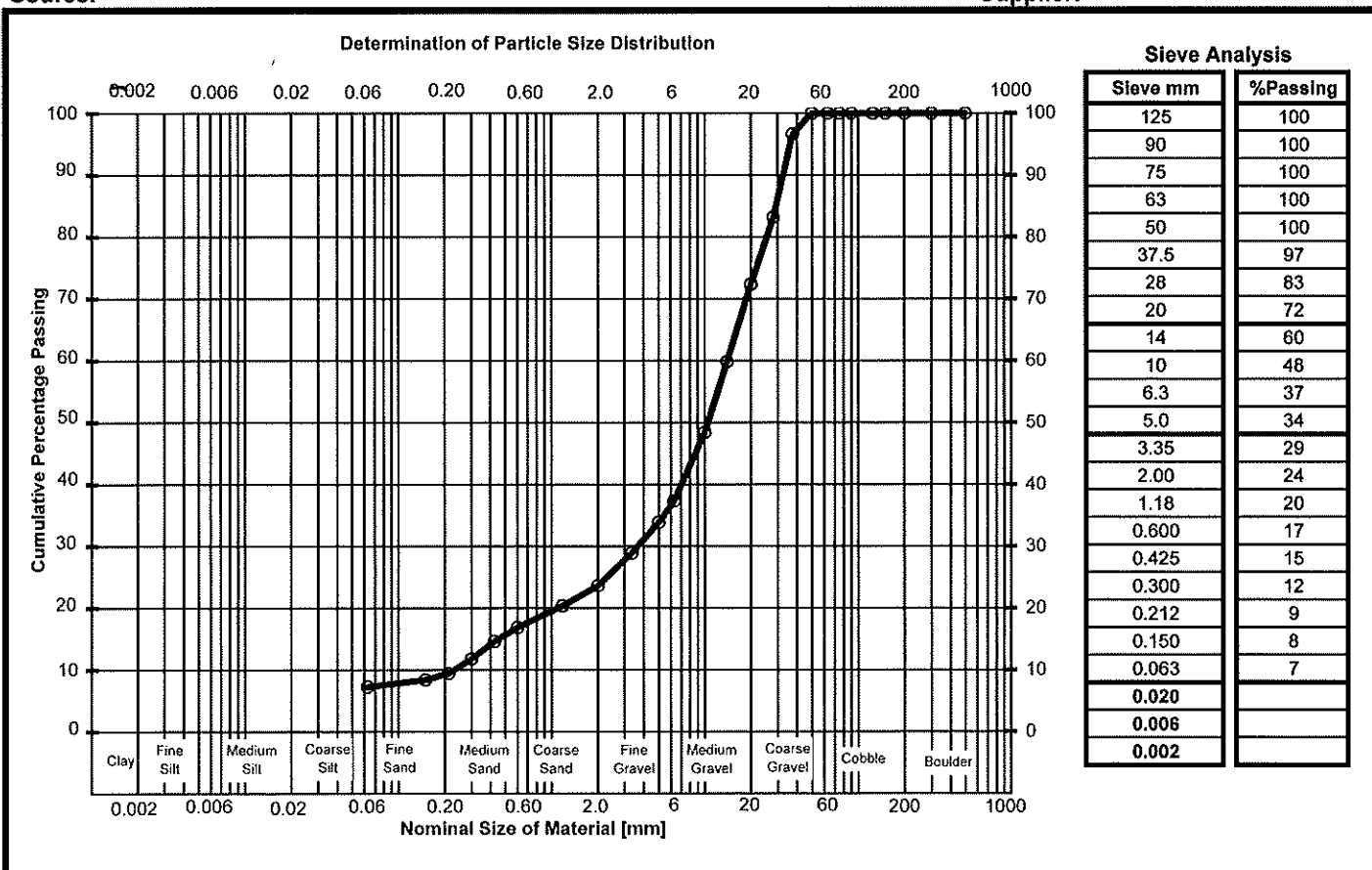
Depth Top: 1.20m

Location: WS1

Depth Base: 2.00m

Source:

Supplier:



Comments:

Approved Signatory: M. Hartnup - Laboratory Manager

Signed:

for and on behalf of Ground Engineering Ltd

Date Reported: 13.01.2020 Page 1 of 1

Form Number: GELab/C/709-2 Version 52

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Registration Number: 6929574
Reg Office: Ground Engineering Ltd
Newark Rd, Peterborough PE1 5UA



8180

GROUND ENGINEERING

Newark Road Peterborough
t: 01733 566566
e: admin@groundengineering.co.uk

TEST CERTIFICATE**Determination of Particle Size Distribution**

Tested in Accordance with BS 1377-2: 1990: Clause 9.2
Sieved Grading

Client: Ground Engineering Ltd
Client Address: Newark Road
Peterborough
PE1 5UA

Certificate Number: PL6930-1/39/710-2
Client Reference: C14947
Lab Job Number: PL6930-1
Date Sampled: Unknown
Date Received: 19.12.2019
Date Tested: 09.01.2020

Contact: James Davies

Site Name: Modular Wards
Site Address: Hillingdon Hospital

Certificate of Sampling: N/A
Sampling Certificate No.: N/A
Sampled By: Client

TEST RESULTS

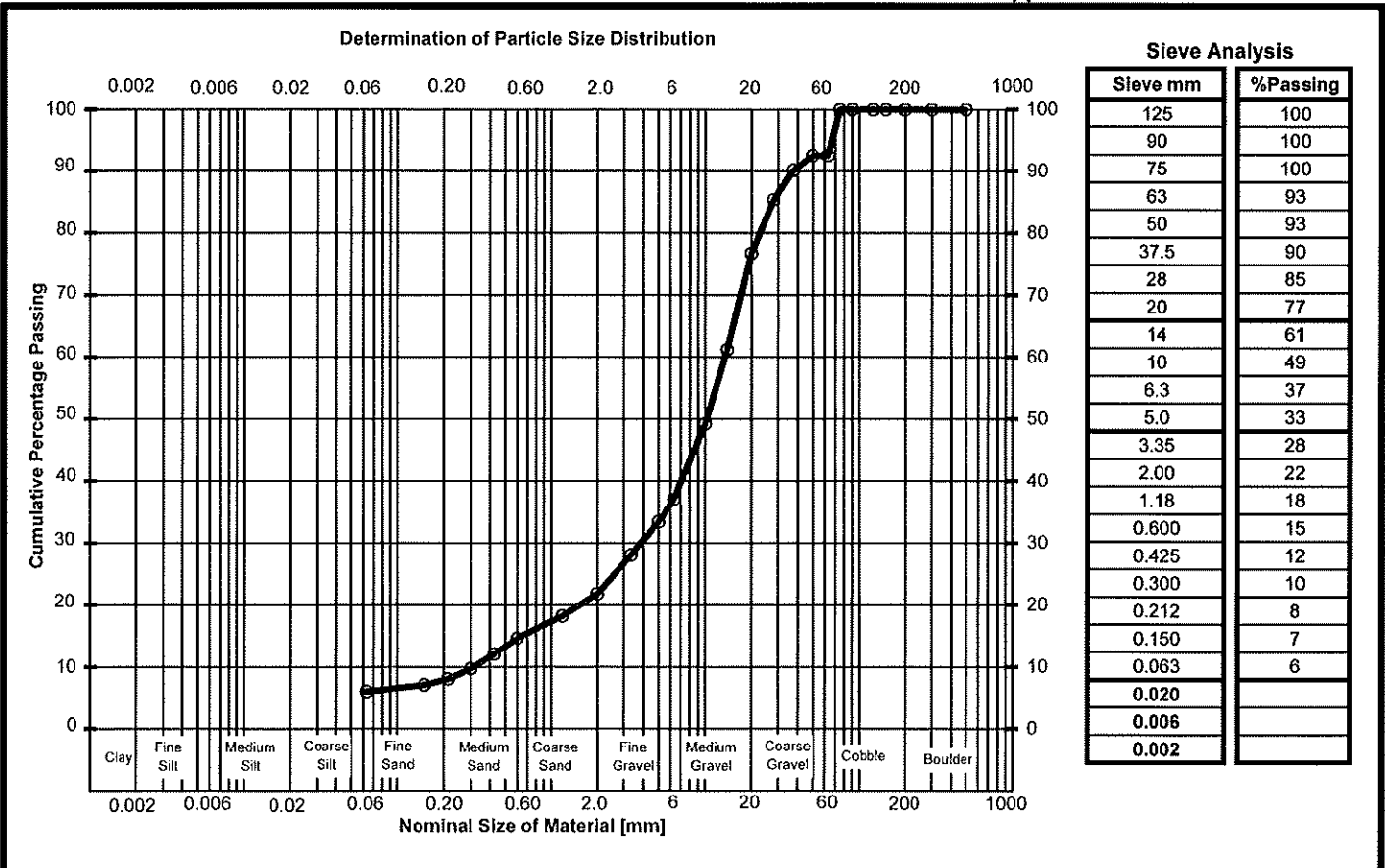
Laboratory Reference: PL6930-1/39
Client Reference: U1

Pre-treatment for organic material: N/A

Sample Description: Grey brown slightly clayey sandy GRAVEL. Gravel consists of angular to sub-rounded flint and quartzite.

Material Specification: Not Required
Location: WS2
Source:

Depth Top: 1.20m
Depth Base: 2.00m
Supplier:



Comments:

Approved Signatory: M. Hartnup - Laboratory Manager

Signed:

for and on behalf of Ground Engineering Ltd

Date Reported: 13.01.2020 Page 1 of 1
Form Number: GELab/C/709-2 Version 52

Registered in England & Wales
Registration Number: 6929574
Reg Office: Ground Engineering Ltd
Newark Rd, Peterborough PE1 5UA

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8180

TEST CERTIFICATE**GROUND ENGINEERING**

Newark Road Peterborough
t: 01733 566566
e: admin@groundengineering.co.uk

Determination of Particle Size Distribution

Tested in Accordance with BS 1377-2: 1990: Clause 9.2 & 9.4
Sieved Grading and Sedimentation by Pipette

Client: Ground Engineering Ltd
Client Address: Newark Road
Peterborough
PE1 5UA

Certificate Number: PL6930-1/43/710-2
Client Reference: C14947
Lab Job Number: PL6930-1
Date Sampled: Unknown
Date Received: 19.12.2019
Date Tested: 09.01.2020

Contact: James Davies

Site Name: Modular Wards
Site Address: Hillingdon Hospital

Certificate of Sampling: N/A
Sampling Certificate No.: N/A
Sampled By: Client

TEST RESULTS

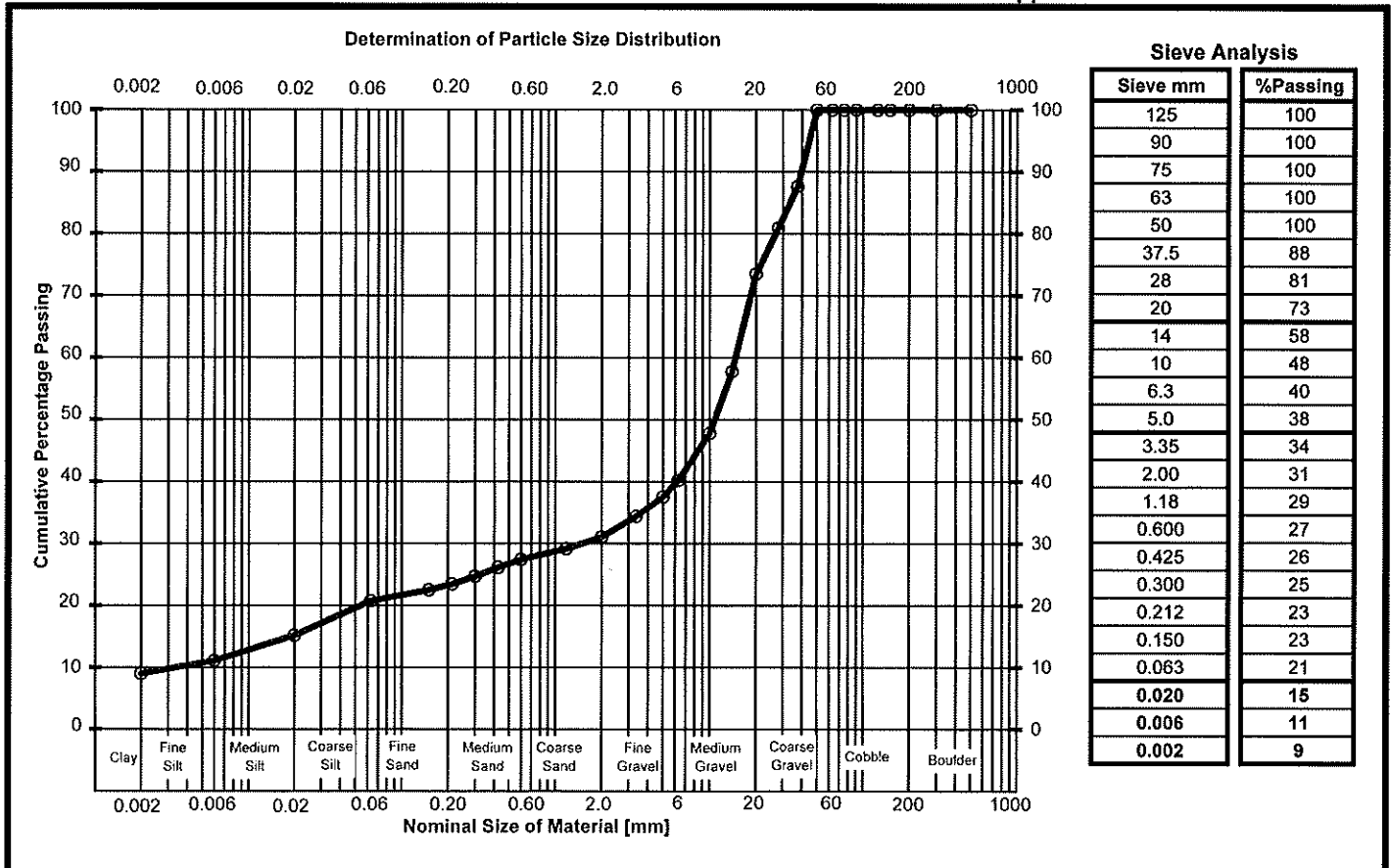
Laboratory Reference: PL6930-1/43
Client Reference: B1

Pre-treatment for organic material: No

Sample Description: Brown grey orange-brown clayey silty sandy GRAVEL. Gravel consists of angular flint.

Material Specification: Not Required
Location: WS3
Source:

Depth Top: 2.00m
Depth Base: 2.50m
Supplier:



Comments: Data relevant to material below 63 microns is outside the current scope of UKAS accreditation

Approved Signatory: M. Hartnup - Laboratory Manager

Signed:

for and on behalf of Ground Engineering Ltd

Date Reported: 13.01.2020 Page 1 of 1
Form Number: GELab/C/709-2 Version 52

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Registered in England & Wales
Registration Number: 6929574
Reg Office: Ground Engineering Ltd
Newark Rd, Peterborough PE1 5UA



Final Report

Report No.: 19-42719-1

Initial Date of Issue: 06-Jan-2020

Client Ground Engineering Limited

Client Address: Newark Road
Peterborough
Cambridgeshire
PE1 5UA

Contact(s): James Davies

Project C14947 Hillingdon Hospital

Quotation No.: **Date Received:** 24-Dec-2019

Order No.: C14947 **Date Instructed:** 24-Dec-2019

No. of Samples: 23

Turnaround (Wkdays): 5 **Results Due:** 07-Jan-2020

Date Approved: 06-Jan-2020

Approved By:


Details: Glynn Harvey, Laboratory Manager

Client: Ground Engineering Limited									
Quotation No.:	Chemtest Job No.:			19-42719	19-42719	19-42719	19-42719	19-42719	19-42719
	Chemtest Sample ID.:			947813	947814	947815	947816	947817	947818
	Client Sample ID.:			D4	D9	D16	D3	D4	D11
	Sample Location:			BH1	BH1	BH1	BH2	BH2	BH2
	Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):			4.20	8.15	13.20	1.70	2.25	7.00
	Date Sampled:			20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019
Determinand	Accred.	SOP	Units	LOD					
pH (2.5:1)	N	2010		4.0		8.2	6.8	7.2	8.4
Moisture	N	2030	%	0.020	19	20	27	26	20
Sulphate (Acid Soluble)	M	2430	%	0.010				0.057	
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	1.1	0.25	0.11	0.076	0.22
Soil Colour	N	2040		N/A	Brown,	Brown,	Brown,	Brown,	Brown,
Other Material	N	2040		N/A	None	None	None	None	None
Soil Texture	N	2040		N/A	Clay	Clay	Clay	Clay	Clay
Total Sulphur	M	2175	%	0.010				0.039	

Results - Soil

Client: Ground Engineering Limited		Chemtest Job No.:		19-42719	19-42719	19-42719	19-42719	19-42719	19-42719	19-42719	19-42719	19-42719
Quotation No.:		Chemtest Sample ID.:		947820	947821	947822	947823	947824	947825	947826	947827	
		Client Sample ID.:		D22	D6	D2	D7	D3	D8	D4	D5	
		Sample Location:		BH2	WS1	WS2	WS2	WS4	WS4	WS5	WS5	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		15.45	3.50	0.60	3.00	0.80	2.50	1.20	1.50	
		Date Sampled:		20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	
Determinand	Accred.	SOP		Units	LOD							
		2010	2030									
pH (2.5:1)	N			%	4.0	8.6	7.7	6.9	7.4	8.0	7.8	7.4
Moisture	N			%	0.020	19	22	22	22	16	14	18
Sulphate (Acid Soluble)	M			%	0.010				0.021			0.066
Sulphate (2:1 Water Soluble) as SO4	M			g/l	0.010	0.14	1.5	0.32	1.6	0.13	0.045	0.070
Soil Colour	N				N/A	Brown,	Brown,	Brown,	Brown,	Brown,	Brown,	Brown,
Other Material	N				N/A	None	None	Stones	None	Stones	Stones	None
Soil Texture	N				N/A	Clay	Clay	Loam	Clay	Loam	Clay	Clay
Total Sulphur	M			%	0.010					0.014		0.035

Results - Soil

Client: Ground Engineering Limited				Chemtest Job No.:		19-42719	19-42719	19-42719	19-42719	19-42719	19-42719	19-42719
Quotation No.:				Chemtest Sample ID.:		947828	947829	947830	947831	947832	947833	947834
				Client Sample ID.:		D8	D11	D15	D3	D7	D3	D8
				Sample Location:		WS5	WS6	WS6	WS8	WS8	WS9	WS9
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.90	3.00	4.10	0.90	2.50	0.90	3.00
				Date Sampled:		20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019	20-Dec-2019
Determinand	Accred.	SOP	Units	LOD								
pH (2.5:1)	N	2010		4.0	7.5	7.5	7.7	7.6	7.5	8.7	7.2	7.2
Moisture	N	2030	%	0.020	19	16	19	13	20	6.2	16	16
Sulphate (Acid Soluble)	M	2430	%	0.010	0.13	1.4					2.2	2.2
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.32	1.7	1.4	0.11	0.11	0.23	1.2	1.2
Soil Colour	N	2040		N/A	Brown,	Brown,	Brown,	Brown,	Brown,	Brown,	Brown,	Brown,
Other Material	N	2040		N/A	None	None	Stones	Stones	None	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Clay	Clay	Loam	Clay	Clay	Sand	Clay	Clay
Total Sulphur	M	2175	%	0.010	0.049	0.47						0.58

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com