

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

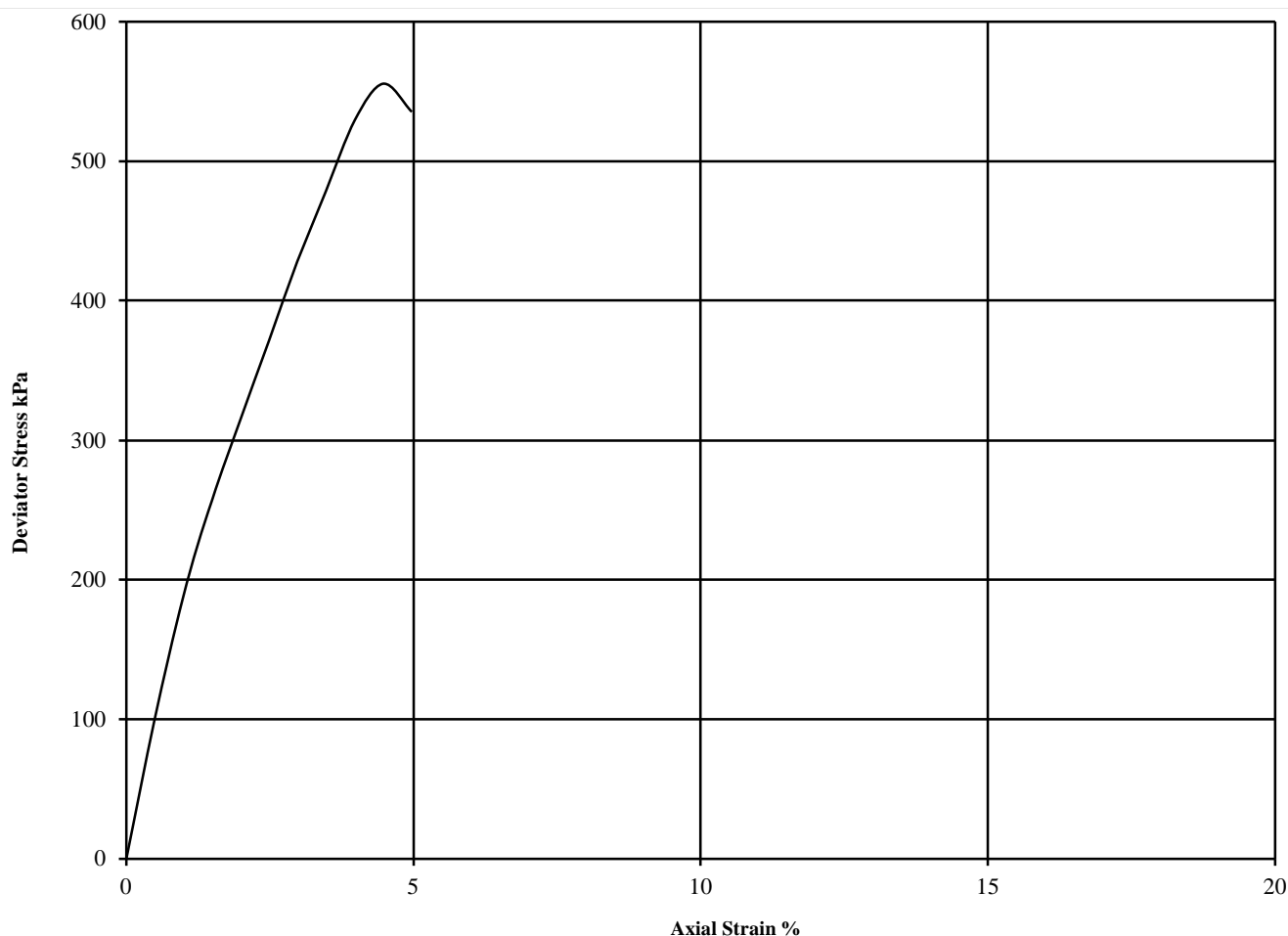
Hole Number: **WBH116**

Top Depth (m): **18.00**

Sample Number:

Base Depth (m):

Sample Type **U**



Diameter (mm):		103			Height (mm):		207		Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36 See summary of soil descriptions			
1	26	1.96	1.55	360	$\frac{1}{2}(\sigma_1 - \sigma_3)_f$ 555	$\frac{1}{2}(\sigma_1 - \sigma_3)_f$ 278	4.5	Brittle				



Project Otter

Contract No:

PSL22/7580

Client Ref:

WIE17469

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

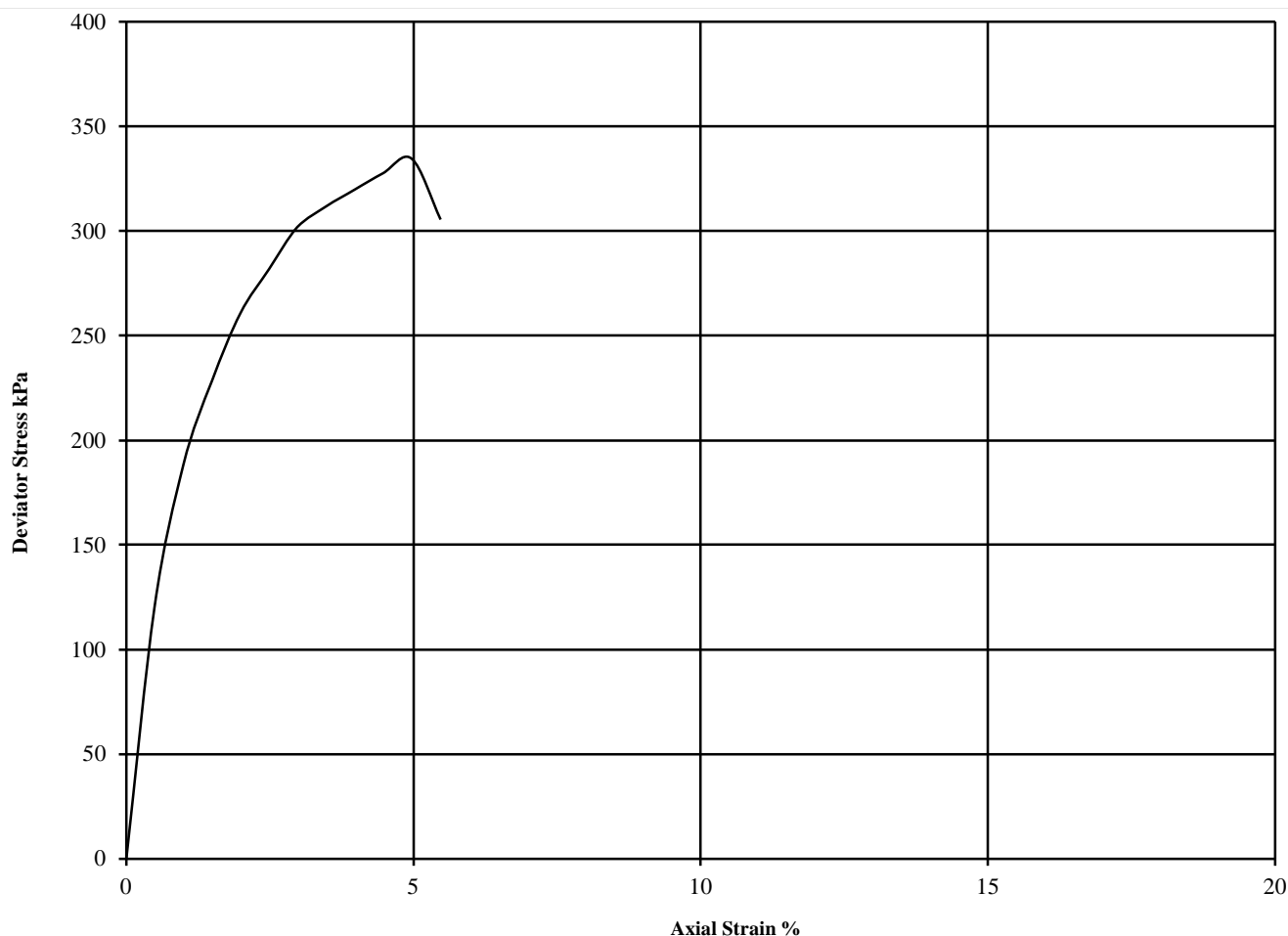
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: **WBH116** Top Depth (m): **30.00**

Sample Number: Base Depth (m):

Sample Type **U**



Diameter (mm):		103			Height (mm):		207		Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36 See summary of soil descriptions			
1	29	1.90	1.47	600	$\frac{1}{2}(\sigma_1 - \sigma_3)_f$ 335	$\frac{1}{2}(\sigma_1 - \sigma_3)_f$ 167	5.0	Brittle				



Project Otter

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UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

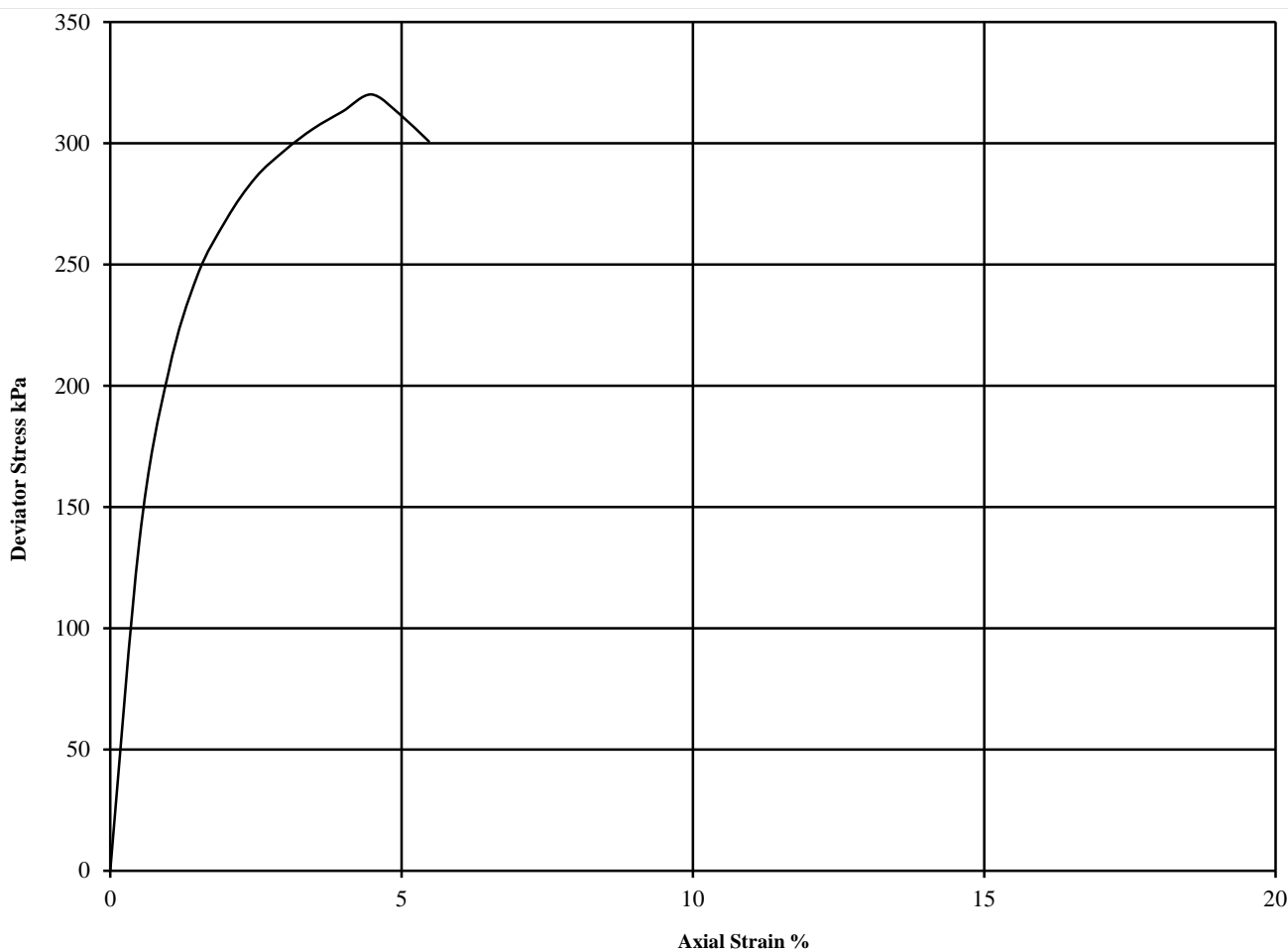
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

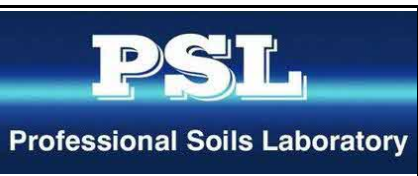
Hole Number: **WBH116** Top Depth (m): **36.00**

Sample Number: Base Depth (m):

Sample Type **U**



Diameter (mm):		103		Height (mm):		207		Test:	UU Single Stage	Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample	
1	27	1.91	1.51	720	320	160	4.5	Brittle	Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36 See summary of soil descriptions	



Project Otter

Contract No:

PSL22/7580

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ANALYTICAL TEST REPORT

Contract no: 116578

Contract name: WIE17469: Project Otter

Client reference: PSL22/7580

Clients name: Professional Soils Laboratory

Clients address: 5/7 Hexthorpe Road
Doncaster
DN4 0AR

Samples received: 06 December 2022

Analysis started: 06 December 2022

Analysis completed: 14 December 2022

Report issued: 14 December 2022

Key

- U UKAS accredited test
- M MCERTS & UKAS accredited test
- \$ Test carried out by an approved subcontractor
- I/S Insufficient sample to carry out test
- N/S Sample not suitable for testing

Approved by:



Abbie Neasham-Bourn
Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			116578-1	116578-2
Sample id			WBH116	WBH116
Depth (m)			3.00	11.00
Sample Type			B	B
Date sampled			-	-
Test	Method	Units		
pH	CE004 ^u	units	8.4	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	1.1	12
Chloride (2:1 water soluble)	CE049 ^u	mg/l Cl	21	5.8
Nitrate (2:1 water soluble)	CE049 ^u	mg/l NO ₃	<1	<1
Sulphate (2:1 water soluble)	CE061 ^u	mg/l SO ₄	48	300
Sulphate (acid extractable)	CE062 ^u	mg/kg SO ₄	545	1231
Sulphate (acid extractable)	CE062 ^u	% w/w SO ₄	0.05	0.12
Sulphur (total)	CE119	mg/kg S	377	3114
Sulphur (total)	CE119	% w/w S	0.04	0.31

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO ₃
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO ₄
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	0.01	% w/w SO ₄
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		100	mg/kg S
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		0.01	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
116578-1	WBH116	3.00	Y	All (NSD)
116578-2	WBH116	11.00	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

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

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.



APPENDIX 6 – Interim Gas & Groundwater Monitoring Results

PERMANENT GROUND GAS MONITORING FORM

SITE NAME:	PROJECT OTTER, CAMBRIDGE	ENGINEER:	William Sandiford Mitchell				
CLIENT:	WATERMAN I & E	DATE:	15/12/2022				
JOB NO:	GRO-22165						
Pressure Trend:	Steady	Weather:	CLEAR				
		Equipment:	GFM 436				
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)	
Start	20.8	0.0	0.0	0.0	0.0	0.0	
Finish	20.8	0.0	0.0	0.0	0.0	0.0	

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		O _{h3} CO ₂ (l/hr)	O _{h3} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
WBH101 (0 secs.)	-	0.0	0.0	0.0	0.0	-	0.2	0.0	19.2	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	1012.0	0.0	N	N	N	2.49
WBH101 (10 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.3	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH101 (20 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH101 (30 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.8	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH101 (45secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.8	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH101 (60secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.7	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH101 (120secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.5	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH101 (180secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.4	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH101 (240secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.3	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH101 (300secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.2	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (0 secs.)	-	0.0	0.0	0.0	0.0	-	0.2	0.0	15.2	20.3	0.0	0.0	0.0	0.0	0.0000	0.0000	1011.0	0.0	N	N	N	2.5
WBH102 (10 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.9	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH102 (20 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.5	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH102 (30 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH102 (45secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.9	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (60secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.5	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (120secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.4	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (180secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.3	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (240secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.3	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH102 (300secs.)	-	0.0	0.0	-	0.0	-	-	0.2	-	18.3	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N			
WBH103 (0 secs.)	-	0.0	0.0	0.1	0.0	-	0.2	0.0	19.3	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1009.0	0.0	N	N	N	NGW
WBH103 (10 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.3	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N			
WBH103 (20 secs.)	-	0.0	0.0	-	0.1	-	-	0.1	-	20.1	-	0.0	-	0.0	0.0001	0.0001	-	0.0	N			
WBH103 (30 secs.)	-	0.0	0.0	-	0.1	-	-	0.1	-	19.9	-	0.0	-	0.0	0.0001	0.0001	-	0.0	N			
WBH103 (45secs.)	-	0.0	0.0	-	0.1	-	-	0.2	-	19.7	-	0.0	-	0.0	0.0002	0.0001	-	0.0	N			
WBH103 (60secs.)	-	0.0	0.0	-	0.1	-	-	0.2	-	19.4	-	0.0	-	0.0	0.0002	0.0001	-	0.0	N			
WBH103 (120secs.)	-	0.0	0.0	-	0.1	-	-	0.2	-	19.3	-	0.0	-	0.0	0.0002	0.0001	-	0.0	N			
WBH103 (180secs.)	-	0.0	0.0	-	0.1	-	-	0.2	-	19.3	-	0.0	-	0.0	0.0002	0.0001	-	0.0	N			
WBH103 (240secs.)	-	0.0	0.0	-	0.1	-	-	2.0	-	19.3	-	0.0	-	0.0	0.0020	0.0001	-	0.0	N			
WBH103 (300secs.)	-	0.0	0.0	-	0.1	-	-	0.2	-	19.3	-	0.0	-	0.0	0.0002	0.0001	-	0.0	N			
WBH104S (0 secs.)	-	0.0	0.0	12.3	0.0	-	7.3	0.0	2.3	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1010.0	1.5	N	N	N	NGW
WBH104S (10 secs.)	-	0.0	0.0	-	2.0	-	-	1.5	-	20.2	-	0.0	-	0.0	0.0015	0.0020	-	1.5	N			
WBH104S (20 secs.)	-	0.0	0.0	-	3.3	-	-	2.3	-	20.0	-	0.0	-	0.0	0.0023	0.0033	-	1.5	N			
WBH104S (30 secs.)	-	0.0	0.0	-	3.6	-	-	4.8	-	19.6	-	0.0	-	0.0	0.0048	0.0036	-	1.5	N			
WBH104S (45secs.)	-	0.0	0.0	-	4.9	-	-	5.2	-	18.8	-	0.0	-	0.0	0.0052	0.0049	-	1.5	N			

WBH104S (60secs.)	-	0.0	0.0	-	6.8	-	6.7	-	14.5	-	0.0	-	0.0	0.0067	0.0068	-	1.5	N			
WBH104S (120secs.)	-	0.0	0.0	-	9.2	-	7.3	-	8.9	-	0.0	-	0.0	0.0073	0.0092	-	1.5	N			
WBH104S (180secs.)	-	0.0	0.0	-	11.3	-	7.3	-	5.6	-	0.0	-	0.0	0.0073	0.0113	-	1.5	N			
WBH104S (240secs.)	-	0.0	0.0	-	11.6	-	7.3	-	2.3	-	0.0	-	0.0	0.0073	0.0116	-	1.5	N			
WBH104S (300secs.)	-	0.0	0.0	-	12.3	-	7.3	-	2.3	-	0.0	-	0.0	0.0073	0.0123	-	1.5	N			
WBH104D (0 secs.)	-	0.0	0.0	9.8	0.0	-	6.6	0.0	5.7	20.4	0.0	0.0	0.0	0.0000	0.0000	1010.0	1.6	N	N	N	2.01
WBH104D (10 secs.)	-	0.0	0.0	-	3.2	-	0.5	-	19.2	-	0.0	-	0.0	0.0005	0.0032	-	1.6	N			
WBH104D (20 secs.)	-	0.0	0.0	-	4.8	-	1.4	-	17.8	-	0.0	-	0.0	0.0014	0.0048	-	1.6	N			
WBH104D (30 secs.)	-	0.0	0.0	-	5.7	-	3.4	-	16.5	-	0.0	-	0.0	0.0034	0.0057	-	1.6	N			
WBH104D (45secs.)	-	0.0	0.0	-	8.8	-	6.6	-	14.8	-	0.0	-	0.0	0.0066	0.0088	-	1.6	N			
WBH104D (60secs.)	-	0.0	0.0	-	9.8	-	6.6	-	11.5	-	0.0	-	0.0	0.0066	0.0098	-	1.6	N			
WBH104D (120secs.)	-	0.0	0.0	-	9.8	-	6.6	-	9.7	-	0.0	-	0.0	0.0066	0.0098	-	1.6	N			
WBH104D (180secs.)	-	0.0	0.0	-	9.8	-	6.6	-	7.7	-	0.0	-	0.0	0.0066	0.0098	-	1.6	N			
WBH104D (240secs.)	-	0.0	0.0	-	9.8	-	6.6	-	6.4	-	0.0	-	0.0	0.0066	0.0098	-	1.6	N			
WBH104D (300secs.)	-	0.0	0.0	-	9.8	-	6.6	-	5.7	-	0.0	-	0.0	0.0066	0.0098	-	1.6	N			
WBH105S (0 secs.)	0.7	0.7	0.08	45.7	0.0	-	14.7	0.0	5.2	20.4	0.0	0.0	0.0	0.0000	0.0000	1011.0	1.8	N	N	N	1.92
WBH105S (10 secs.)	-	0.7	0.08	-	8.7	-	1.0	-	19.0	-	0.0	-	0.0	0.0070	0.0609	-	1.8	N			
WBH105S (20 secs.)	-	0.7	0.08	-	14.6	-	1.6	-	17.6	-	0.0	-	0.0	0.0112	0.1022	-	1.8	N			
WBH105S (30 secs.)	-	0.7	0.08	-	20.4	-	2.3	-	15.4	-	0.0	-	0.0	0.0161	0.1428	-	1.8	N			
WBH105S (45secs.)	-	0.7	0.08	-	29.7	-	3.5	-	12.0	-	0.0	-	0.0	0.0245	0.2079	-	1.8	N			
WBH105S (60secs.)	-	0.7	0.08	-	35.2	-	7.4	-	10.3	-	0.0	-	0.0	0.0518	0.2464	-	1.8	N			
WBH105S (120secs.)	-	0.7	0.08	-	40.1	-	8.9	-	6.5	-	0.0	-	0.0	0.0623	0.2807	-	1.8	N			
WBH105S (180secs.)	-	0.7	0.08	-	45.7	-	12.3	-	5.4	-	0.0	-	0.0	0.0861	0.3199	-	1.8	N			
WBH105S (240secs.)	-	0.7	0.08	-	45.7	-	14.7	-	5.2	-	0.0	-	0.0	0.1029	0.3199	-	1.8	N			
WBH105S (300secs.)	-	0.7	0.08	-	45.7	-	14.7	-	5.2	-	0.0	-	0.0	0.1029	0.3199	-	1.8	N			
WBH105D (0 secs.)	1.1	1.1	0.09	52.6	0.0	-	19.6	0.0	4.8	20.5	0.0	0.0	0.0	0.0000	0.0000	1012.0	1.9	N	N	N	2.2
WBH105D (10 secs.)	-	1.1	0.09	-	7.8	-	5.0	-	18.7	-	0.0	-	0.0	0.0550	0.0858	-	1.9	N			
WBH105D (20 secs.)	-	1.1	0.09	-	16.2	-	8.7	-	15.2	-	0.0	-	0.0	0.0957	0.1782	-	1.9	N			
WBH105D (30 secs.)	-	1.1	0.09	-	26.4	-	8.9	-	13.2	-	0.0	-	0.0	0.0979	0.2904	-	1.9	N			
WBH105D (45secs.)	-	1.1	0.09	-	34.4	-	11.2	-	10.8	-	0.0	-	0.0	0.1232	0.3784	-	1.9	N			
WBH105D (60secs.)	-	1.1	0.09	-	40.1	-	14.5	-	8.7	-	0.0	-	0.0	0.1595	0.4411	-	1.9	N			
WBH105D (120secs.)	-	1.1	0.09	-	48.8	-	17.1	-	5.4	-	0.0	-	0.0	0.1881	0.5368	-	1.9	N			
WBH105D (180secs.)	-	1.1	0.09	-	52.1	-	19.6	-	4.8	-	0.0	-	0.0	0.2156	0.5731	-	1.9	N			
WBH105D (240secs.)	-	1.1	0.09	-	52.6	-	19.6	-	4.8	-	0.0	-	0.0	0.2156	0.5786	-	1.9	N			
WBH105D (300secs.)	-	1.1	0.09	-	52.6	-	19.6	-	4.8	-	0.0	-	0.0	0.2156	0.5786	-	1.9	N			
WBH106 (0 secs.)	0.0	0.0	0.0	0.0	0.0	-	0.7	0.0	13.9	20.4	0.0	0.0	0.0	0.0000	0.0000	1012.0	0.0	N	N	N	NGW
WBH106 (10 secs.)	-	0.0	0.0	-	0.0	-	0.3	-	18.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N			
WBH106 (20 secs.)	-	0.0	0.0	-	0.0	-	0.4	-	15.8	-	0.0	-	0.0	0.0004	0.0000	-	0.0	N			
WBH106 (30 secs.)	-	0.0	0.0	-	0.0	-	0.6	-	15.4	-	0.0	-	0.0	0.0006	0.0000	-	0.0	N			
WBH106 (45secs.)	-	0.0	0.0	-	0.0	-	0.7	-	14.2	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH106 (60secs.)	-	0.0	0.0	-	0.0	-	0.7	-	13.9	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH106 (120secs.)	-	0.0	0.0	-	0.0	-	0.7	-	13.9	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH106 (180secs.)	-	0.0	0.0	-	0.0	-	0.7	-	13.9	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH106 (240secs.)	-	0.0	0.0	-	0.0	-	0.7	-	13.9	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH106 (300secs.)	-	0.0	0.0	-	0.0	-	0.7	-	13.9	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N			
WBH107 (0 secs.)	0.0	0.0	0.0	0.0	0.0	-	0.5	0.0	18.9	20.6	0.0	0.0	0.0	0.0000	0.0000	1007.0	0.0	N	N	N	1.13
WBH107 (10 secs.)	-	0.0	0.0	-	0.0	-	0.2	-	20.2	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N	-	-	-
WBH107 (20 secs.)	-	0.0	0.0	-	0.0	-	0.3	-	19.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N	-	-	-
WBH107 (30 secs.)	-	0.0	0.0	-	0.0	-	0.5	-	19.1	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH107 (45secs.)	-	0.0	0.0	-	0.0	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH107 (60secs.)	-	0.0	0.0	-	0.0	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH107 (120secs.)	-	0.0	0.0	-	0.0	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-

WBH107 (180secs.)	-	0.0	0.0	-	0.0	-	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH107 (240secs.)	-	0.0	0.0	-	0.0	-	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH107 (300secs.)	-	0.0	0.0	-	0.0	-	-	0.5	-	18.9	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH108S (0 secs.)	0.0	0.0	0.0	1.6	0.0	-	3.1	0.0	16.9	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1010.0	1.1	N	N	N	NGW
WBH108S (10 secs.)	-	0.0	0.0	-	0.5	-	-	1.1	-	19.8	-	0.0	-	0.0	0.0011	0.0005	-	1.1	N	-	-	-
WBH108S (20 secs.)	-	0.0	0.0	-	0.9	-	-	1.4	-	19.1	-	0.0	-	0.0	0.0014	0.0009	-	1.1	N	-	-	-
WBH108S (30 secs.)	-	0.0	0.0	-	1.3	-	-	2.0	-	17.9	-	0.0	-	0.0	0.0020	0.0013	-	1.1	N	-	-	-
WBH108S (45secs.)	-	0.0	0.0	-	1.5	-	-	2.4	-	17.2	-	0.0	-	0.0	0.0024	0.0015	-	1.1	N	-	-	-
WBH108S (60secs.)	-	0.0	0.0	-	1.6	-	-	3.1	-	16.9	-	0.0	-	0.0	0.0031	0.0016	-	1.1	N	-	-	-
WBH108S (120secs.)	-	0.0	0.0	-	1.6	-	-	3.1	-	16.9	-	0.0	-	0.0	0.0031	0.0016	-	1.1	N	-	-	-
WBH108S (180secs.)	-	0.0	0.0	-	1.6	-	-	3.1	-	16.9	-	0.0	-	0.0	0.0031	0.0016	-	1.1	N	-	-	-
WBH108S (240secs.)	-	0.0	0.0	-	1.6	-	-	3.1	-	16.9	-	0.0	-	0.0	0.0031	0.0016	-	1.1	N	-	-	-
WBH108S (300secs.)	-	0.0	0.0	-	1.6	-	-	3.1	-	16.9	-	0.0	-	0.0	0.0031	0.0016	-	1.1	N	-	-	-
WBH108D (0 secs.)	0.0	0.0	0.0	1.1	0.0	-	2.0	0.0	18.6	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1011.0	0.9	N	N	N	1.51
WBH108D (10 secs.)	-	0.0	0.0	-	0.6	-	-	0.4	-	19.9	-	0.0	-	0.0	0.0004	0.0006	-	0.9	N	-	-	-
WBH108D (20 secs.)	-	0.0	0.0	-	0.9	-	-	0.8	-	19.4	-	0.0	-	0.0	0.0008	0.0009	-	0.9	N	-	-	-
WBH108D (30 secs.)	-	0.0	0.0	-	1.1	-	-	1.4	-	19.7	-	0.0	-	0.0	0.0014	0.0011	-	0.9	N	-	-	-
WBH108D (45secs.)	-	0.0	0.0	-	1.1	-	-	1.9	-	19.1	-	0.0	-	0.0	0.0019	0.0011	-	0.9	N	-	-	-
WBH108D (60secs.)	-	0.0	0.0	-	1.1	-	-	2.0	-	18.6	-	0.0	-	0.0	0.0020	0.0011	-	0.9	N	-	-	-
WBH108D (120secs.)	-	0.0	0.0	-	1.1	-	-	2.0	-	18.6	-	0.0	-	0.0	0.0020	0.0011	-	0.9	N	-	-	-
WBH108D (180secs.)	-	0.0	0.0	-	1.1	-	-	2.0	-	18.6	-	0.0	-	0.0	0.0020	0.0011	-	0.9	N	-	-	-
WBH108D (240secs.)	-	0.0	0.0	-	1.1	-	-	2.0	-	18.6	-	0.0	-	0.0	0.0020	0.0011	-	0.9	N	-	-	-
WBH108D (300secs.)	-	0.0	0.0	-	1.1	-	-	2.0	-	18.6	-	0.0	-	0.0	0.0020	0.0011	-	0.9	N	-	-	-
WBH109 (0 secs.)	0.0	0.0	0.0	0.0	0.0	-	3.4	0.0	15.6	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1011.0	0.0	N	N	N	2.49
WBH109 (10 secs.)	-	0.0	0.0	-	0.0	-	-	1.1	-	18.9	-	0.0	-	0.0	0.0011	0.0000	-	0.0	-	-	-	-
WBH109 (20 secs.)	-	0.0	0.0	-	0.0	-	-	1.9	-	19.3	-	0.0	-	0.0	0.0019	0.0000	-	0.0	-	-	-	-
WBH109 (30 secs.)	-	0.0	0.0	-	0.0	-	-	2.4	-	17.8	-	0.0	-	0.0	0.0024	0.0000	-	0.0	-	-	-	-
WBH109 (45secs.)	-	0.0	0.0	-	0.0	-	-	2.9	-	16.4	-	0.0	-	0.0	0.0029	0.0000	-	0.0	-	-	-	-
WBH109 (60secs.)	-	0.0	0.0	-	0.0	-	-	3.4	-	15.6	-	0.0	-	0.0	0.0034	0.0000	-	0.0	-	-	-	-
WBH109 (120secs.)	-	0.0	0.0	-	0.0	-	-	3.4	-	15.6	-	0.0	-	0.0	0.0034	0.0000	-	0.0	-	-	-	-
WBH109 (180secs.)	-	0.0	0.0	-	0.0	-	-	3.4	-	15.6	-	0.0	-	0.0	0.0034	0.0000	-	0.0	-	-	-	-
WBH109 (240secs.)	-	0.0	0.0	-	0.0	-	-	3.4	-	15.6	-	0.0	-	0.0	0.0034	0.0000	-	0.0	-	-	-	-
WBH109 (300secs.)	-	0.0	0.0	-	0.0	-	-	3.4	-	15.6	-	0.0	-	0.0	0.0034	0.0000	-	0.0	-	-	-	-
WBH110 (0 secs.)	0.0	0.0	0.0	0.0	0.0	-	5.1	0.0	8.4	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	1011.0	0.0	N	N	N	NGW
WBH110 (10 secs.)	-	0.0	0.0	-	0.0	-	-	1.5	-	18.7	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH110 (20 secs.)	-	0.0	0.0	-	0.0	-	-	2.4	-	15.9	-	0.0	-	0.0	0.0024	0.0000	-	0.0	N	-	-	-
WBH110 (30 secs.)	-	0.0	0.0	-	0.0	-	-	3.9	-	13.2	-	0.0	-	0.0	0.0039	0.0000	-	0.0	N	-	-	-
WBH110 (45secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	11.7	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH110 (60secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	10.1	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH110 (120secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	9.6	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH110 (180secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	8.4	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH110 (240secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	8.4	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH110 (300secs.)	-	0.0	0.0	-	0.0	-	-	5.1	-	8.4	-	0.0	-	0.0	0.0051	0.0000	-	0.0	N	-	-	-
WBH111 (0 secs.)	0.0	0.0	0.0	0.0	0.0	-	0.1	0.0	19.2	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	1005.0	0.0	N	N	N	0.39
WBH111 (10 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.8	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (20 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (30 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (45secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (60secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (120secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (180secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH111 (240secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-

WBH116 (10 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.0	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (20 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (30 secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (45secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (60secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (120secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (180secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (240secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-
WBH116 (300secs.)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.6	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N	-	-	-

PERMANENT GROUND GAS MONITORING FOF

SITE NAME:	PROJECT OTTER, CAMBRIDGE				ENGINEER:		William Sandford Mitchell			
CLIENT:	WATERMAN I & E				DATE:		12/01/2023			
JOB NO.:	GRO-22165									
Pressure Trend:	Steady	Weather:	Raining		Equipment:		GFM 436			
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)				
Start	20.8	0.0	0.0	0.0	0.0	0.0				
Finish	20.8	0.0	0.0	0.0	0.0	0.0				

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q ₁₀ CO ₂ (l/hr)	Q ₁₀ CH ₄ (l/hr)	Atmos Pres (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)	
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady									
WBH101 (0 secs)	-	0.0	0.0	0.0	0.0	-	0.1	0.0	20.2	20.5	0.0	0.0	0.0	0.0	0.0000	0.0000	998.0	0.0	N	N	N	3.20	
WBH101 (10 secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.4	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (20 secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.3	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (30 secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.3	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (45secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (60secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (120secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.2	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH101 (180secs)	-	0.0	0.0	-	0.0	-	-	0.0	-	20.2	-	0.0	-	0.0	0.0000	0.0000	-	0.0	N				
WBH101 (240secs)	-	0.0	0.0	-	0.0	-	-	0.0	-	20.2	-	0.0	-	0.0	0.0000	0.0000	-	0.0	N				
WBH101 (300secs)	-	0.0	0.0	-	0.0	-	-	0.0	-	20.2	-	0.0	-	0.0	0.0000	0.0000	-	0.0	N				
WBH102 (0 secs)	-	0.0	0.0	0.0	0.0	-	0.8	0.0	15.2	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	998.0	0.0	N	N	N	2.3	
WBH102 (10 secs)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.3	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N				
WBH102 (20 secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	18.8	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N				
WBH102 (30 secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	17.6	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N				
WBH102 (45secs)	-	0.0	0.0	-	0.0	-	-	0.7	-	17.2	-	0.0	-	0.0	0.0007	0.0000	-	0.0	N				
WBH102 (60secs)	-	0.0	0.0	-	0.0	-	-	0.8	-	16.5	-	0.0	-	0.0	0.0008	0.0000	-	0.0	N				
WBH102 (120secs)	-	0.0	0.0	-	0.0	-	-	0.8	-	15.8	-	0.0	-	0.0	0.0008	0.0000	-	0.0	N				
WBH102 (180secs)	-	0.0	0.0	-	0.0	-	-	0.8	-	15.3	-	0.0	-	0.0	0.0008	0.0000	-	0.0	N				
WBH102 (240secs)	-	0.0	0.0	-	0.0	-	-	0.8	-	14.9	-	0.0	-	0.0	0.0008	0.0000	-	0.0	N				
WBH102 (300secs)	-	0.0	0.0	-	0.0	-	-	0.8	-	14.6	-	0.0	-	0.0	0.0008	0.0000	-	0.0	N				
WBH103 (0 secs)	-	0.0	0.0	0.0	0.0	-	0.2	0.0	19.3	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	1000.0	0.0	N	N	N	NGW	
WBH103 (10 secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	20.1	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH103 (20 secs)	-	0.0	0.0	-	0.0	-	-	0.1	-	19.9	-	0.0	-	0.0	0.0001	0.0000	-	0.0	N				
WBH103 (30 secs)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.8	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N				
WBH103 (45secs)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.8	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N				
WBH103 (60secs)	-	0.0	0.0	-	0.0	-	-	0.2	-	19.7	-	0.0	-	0.0	0.0002	0.0000	-	0.0	N				
WBH103 (120secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	19.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N				
WBH103 (180secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	19.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N				
WBH103 (240secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	19.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N				
WBH103 (300secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	19.7	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N				
WBH104S(0 secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(10 secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(20 secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(30 secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(45secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(60secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(120secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(180secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(240secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104S(300secs)	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WBH104D (0 secs)	-	0.0	0.0	10.4	0.0	-	4.2	0.0	5.7	20.4	0.0	0.0	0.0	0.0	0.0000	0.0000	1000.0	1.2	N	N	N	1.89	
WBH104D (10 secs)	-	0.0	0.0	-	3.8	-	-	0.3	-	13.5	-	0.0	-	0.0	0.0003	0.0038	-	1.2	N				
WBH104D (20 secs)	-	0.0	0.0	-	5.2	-	-	0.8	-	9.7	-	0.0	-	0.0	0.0008	0.0052	-	1.2	N				
WBH104D (30 secs)	-	0.0	0.0	-	6.7	-	-	2.5	-	9.3	-	0.0	-	0.0	0.0025	0.0067	-	1.2	N				
WBH104D (45secs)	-	0.0	0.0	-	8.9	-	-	3.7	-	8.7	-	0.0	-	0.0	0.0037	0.0089	-	1.2	N				
WBH104D (60secs)	-	0.0	0.0	-	10.2	-	-	4.2	-	7.9	-	0.0	-	0.0	0.0042	0.0102	-	1.2	N				
WBH104D (120secs)	-	0.0	0.0	-	10.4	-	-	4.2	-	7.2	-	0.0	-	0.0	0.0042	0.0104	-	1.2	N				
WBH104D (180secs)	-	0.0	0.0	-	10.4	-	-	4.2	-	6.7	-	0.0	-	0.0	0.0042	0.0104	-	1.2	N				
WBH104D (240secs)	-	0.0	0.0	-	10.4	-	-	4.2	-	6.7	-	0.0	-	0.0	0.0042	0.0104	-	1.2	N				
WBH104D (300secs)	-	0.0	0.0	-	10.4	-	-	4.2	-	6.7	-	0.0	-	0.0	0.0042	0.0104	-	1.2	N				

WBH115 (45secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH115 (60secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH115 (120secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH115 (180secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH115 (240secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH115 (300secs)	-	0.0	0.0	-	0.0	-	-	1.5	-	19.5	-	0.0	-	0.0	0.0015	0.0000	-	0.0	N	-	-	-
WBH116 (0 secs)	0.0	0.0	0.0	0.0	0.0	-	0.5	0.0	19.7	20.5	0.0	0.0	0.0	0.0000	0.0000	1000.0	0.0	N	N	N	1.95	
WBH116 (10 secs)	-	0.0	0.0	-	0.0	-	-	0.3	-	20.1	-	0.0	-	0.0	0.0003	0.0000	-	0.0	N	-	-	-
WBH116 (20 secs)	-	0.0	0.0	-	0.0	-	-	0.4	-	19.9	-	0.0	-	0.0	0.0004	0.0000	-	0.0	N	-	-	-
WBH116 (30 secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.8	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (45secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (60secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (120secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (180secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (240secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-
WBH116 (300secs)	-	0.0	0.0	-	0.0	-	-	0.5	-	19.7	-	0.0	-	0.0	0.0005	0.0000	-	0.0	N	-	-	-



APPENDIX 7 – PID Results

SITE NAME:	PROJECT OTTER
CLIENT:	RMPI RAILPEN
JOB NO:	GRO-22165

BH Ref.	Depth (m)	Result (ppm)
WBH101	0.20	0.0000
WBH101	0.60	0.0000
WBH101	0.90	0.0000
WBH101	1.30	0.0000
WBH101	1.50	0.0000
WBH101	2.50	0.0000
WBH101	3.50	0.0000
WBH101	4.50	0.0000
WBH101	5.50	9.7000
WBH101	6.00	0.5000
WBH101	10.00	0.0000
WBH101	15.00	0.0000
WBH101	20.00	0.0000
WBH101	25.00	0.0000
WBH101	30.00	0.0000
WBH102	0.20	9.5000
WBH102	0.50	1.9000
WBH102	1.00	3.6000
WBH102	1.30	3.7000
WBH102	1.50	1.5000
WBH102	2.50	0.1000
WBH102	3.50	0.0000
WBH102	4.00	0.0000
WBH102	4.50	0.0000
WBH102	9.50	0.0000
WBH102	15.00	0.0000
WBH102	20.00	0.0000
WBH102	25.00	0.0000
WBH102	30.00	0.0000
WBH103	0.60	14.1000
WBH103	1.10	15.6000
WBH103	1.60	16.1000
WBH103	2.00	1.3000
WBH103	2.30	2.0000
WBH103	3.00	0.4000
WBH103	3.50	0.2000
WBH103	4.50	0.0000
WBH103	9.50	0.0000
WBH103	15.00	0.0000

BH Ref.	Depth (m)	Result (ppm)
WBH103	20.00	0.0000
WBH103	25.00	0.0000
WBH104	0.50	2.8000
WBH104	0.70	2.9000
WBH104	1.00	1.4000
WBH104	1.50	6.8000
WBH104	2.50	1.9000
WBH104	3.20	1.8000
WBH104	3.70	1.1000
WBH104	4.20	1.2000
WBH104	5.00	2.1000
WBH104	6.00	0.7000
WBH104	7.00	1.2000
WBH104	8.00	248.3000
WBH104	8.50	2.3000
WBH104	9.00	1.7000
WBH104	10.00	1.1000
WBH104	11.00	2.1000
WBH104	12.00	1.9000
WBH104	13.00	0.9000
WBH104	14.00	3.4000
WBH104	15.00	4.1000
WBH104	17.00	0.0000
WBH104	20.00	0.0000
WBH104	25.00	0.0000
WBH105	0.30	0.0000
WBH105	0.80	0.4000
WBH105	1.30	0.8000
WBH105	1.80	1.2000
WBH105	2.30	1.0000
WBH105	2.80	0.9000
WBH105	3.30	0.7000
WBH105	3.50	0.6000
WBH105	4.00	0.4000
WBH105	4.50	0.3000
WBH105	5.00	0.7000
WBH105	7.00	0.3000
WBH105	9.00	0.4000
WBH105	10.50	0.5000

BH Ref.	Depth (m)	Result (ppm)
WBH105	13.50	0.0000
WBH105	15.00	0.0000
WBH105	20.00	0.0000
WBH105	25.00	0.0000
WBH106	0.15	2.3000
WBH106	1.10	0.0000
WBH106	1.60	0.0000
WBH106	1.90	0.0000
WBH106	2.10	0.0000
WBH106	3.00	0.0000
WBH106	4.00	0.0000
WBH106	5.00	0.0000
WBH106	10.00	0.0000
WBH106	15.00	0.0000
WBH106	20.00	0.0000
WBH106	25.00	0.0000
WBH107	0.50	0.0000
WBH107	1.00	0.0000
WBH107	1.50	0.0000
WBH107	1.90	0.0000
WBH107	2.10	0.0000
WBH107	3.00	0.0000
WBH107	3.90	0.0000
WBH107	4.10	0.0000
WBH107	5.00	0.0000
WBH107	15.00	0.0000
WBH107	25.00	0.0000
WBH108	0.50	5.7000
WBH108	0.90	9.2000
WBH108	1.10	5.8000
WBH108	1.50	2.1000
WBH108	1.90	140.2000
WBH108	2.10	5.0000
WBH108	2.50	4.1000
WBH108	3.00	4.6000
WBH108	3.50	4.3000
WBH108	4.00	3.6000
WBH108	4.50	5.1000
WBH108	5.00	11.5000

BH Ref.	Depth (m)	Result (ppm)
WBH108	5.90	9.8000
WBH108	6.10	2.4000
WBH108	6.50	2.3000
WBH108	7.00	4.3000
WBH108	8.10	310.7000
WBH108	9.00	7.3000
WBH108	9.40	11.5000
WBH108	9.60	4.6000
WBH108	15.00	0.0000
WBH108	25.00	0.0000
WBH109	0.40	0.0000
WBH109	0.80	0.0000
WBH109	1.20	0.0000
WBH109	1.70	0.1000
WBH109	2.20	0.0000
WBH109	3.00	0.0000
WBH109	4.00	0.0000
WBH109	5.00	0.0000
WBH109	6.00	0.0000
WBH109	7.00	0.0000
WBH109	9.00	0.0000
WBH109	10.00	0.0000
WBH109	20.00	0.0000
WBH109	25.00	0.0000
WBH110	0.50	1.3000
WBH110	0.80	0.1000
WBH110	1.30	0.2000
WBH110	1.80	0.4000
WBH110	2.10	0.0000
WBH110	2.40	0.0000
WBH110	2.60	0.0000
WBH110	3.10	0.0000
WBH110	3.50	0.0000
WBH110	4.50	0.0000
WBH110	10.00	0.0000
WBH110	15.00	0.0000
WBH110	25.00	0.0000
WBH111	0.20	1.2000
WBH111	0.50	805.0000

BH Ref.	Depth (m)	Result (ppm)
WBH111	1.00	205.0000
WBH111	1.50	1165.0000
WBH111	2.50	162.0000
WBH111	3.50	26.0000
WBH111	4.50	4.5000
WBH111	9.00	0.0000
WBH111	14.00	0.0000
WBH111	18.00	0.0000
WBH111	22.00	0.0000
WBH111	27.00	0.0000
WBH111	30.00	0.0000
WBH111	35.00	0.0000
WBH111	40.00	0.0000
WBH112	0.50	1.0000
WBH112	1.00	0.0000
WBH112	2.00	0.0000
WBH112	3.00	0.0000
WBH112	4.00	0.0000
WBH112	5.00	0.0000
WBH112	6.00	0.0000
WBH112	10.00	0.0000
WBH112	15.00	0.0000
WBH112	20.00	0.0000
WBH112	25.00	0.0000
WBH112	30.00	0.0000
WBH112	35.00	0.0000
WBH112	40.00	0.0000
WBH113	0.15	0.0000
WBH113	0.30	0.0000
WBH113	0.80	0.0000
WBH113	0.90	0.0000
WBH113	1.90	0.0000
WBH113	2.50	0.0000
WBH113	2.70	0.0000
WBH113	3.70	1.6000
WBH113	4.70	1.9000
WBH113	5.40	0.2000
WBH113	5.70	0.0000
WBH113	6.00	0.0000

SITE NAME:	PROJECT OTTER
CLIENT:	RMPI RAILPEN
JOB NO:	GRO-22165

BH Ref.	Depth (m)	Result (ppm)
WBH113	10.00	0.0000
WBH113	15.00	0.0000
WBH113	20.00	0.0000
WBH113	25.00	0.0000
WBH113	30.00	0.0000
WBH113	35.00	0.0000
WBH113	40.00	0.0000
WBH114	0.50	0.0000
WBH114	1.00	0.0000
WBH114	1.50	0.0000
WBH114	1.80	0.0000
WBH114	2.30	0.0000
WBH114	2.60	1.0000
WBH114	3.60	0.0000
WBH114	4.60	0.6000
WBH114	5.70	0.0000
WBH114	6.00	0.0000
WBH114	10.00	0.0000
WBH114	15.00	0.0000
WBH114	20.00	0.0000
WBH114	25.00	0.0000
WBH114	30.00	0.0000
WBH114	35.00	0.0000
WBH114	40.00	0.0000
WBH115	0.40	0.0000
WBH115	0.80	0.0000
WBH115	0.90	0.0000
WBH115	1.30	0.3000
WBH115	1.50	0.0000
WBH115	2.00	0.0000
WBH115	3.00	0.0000
WBH115	4.00	0.0000
WBH115	4.30	0.0000
WBH115	5.00	0.0000
WBH115	10.00	0.0000
WBH115	15.00	0.0000
WBH115	20.00	0.0000
WBH115	25.00	0.0000
WBH115	30.00	0.0000

BH Ref.	Depth (m)	Result (ppm)
WBH115	35.00	0.0000
WBH115	40.00	0.0000
WBH116	0.50	0.8000
WBH116	1.00	0.7000
WBH116	1.30	0.2000
WBH116	1.60	0.9000
WBH116	2.10	0.4000
WBH116	3.00	0.0000
WBH116	4.00	0.0000
WBH116	4.80	0.0000
WBH116	5.10	0.0000
WBH116	10.00	0.0000
WBH116	15.00	0.0000
WBH116	20.00	0.0000
WBH116	25.00	0.0000
WBH116	30.00	0.0000
WBH116	35.00	0.0000
WBH116	40.00	0.0000



APPENDIX 8 - Limitations



Limitations

This report (Report) forms part of the Services and if applicable Additional Services undertaken by Groundtech Consulting Ltd pursuant to a written contract (Agreement) which contains detailed provisions including express limitations of the liability of Groundtech Consulting Ltd.

This Report was prepared using reasonable skill and care as stated in the Agreement for the purpose including intended end use stated by the Client (Purpose) and the liability of Groundtech Consulting Ltd in respect of the form and content of this Report is no greater than its liability under the Agreement. All records, measurements notes, or any other data (Data) obtained by or for the benefit of the Consultant were obtained at a specific point in time and it may not be assumed by the Client or any person relying on this Report that the Data will remain unaffected by the passage of time, the seasons, weather conditions, changes in the water table or the carrying out and completion of works at the Site.

Unless otherwise agreed this Report has been prepared exclusively for the use and reliance of the Client and may not be relied upon, by any other party except as provided for in the Agreement. A third party who relies on this Report, does so at their own and sole risk and Groundtech Consulting Ltd has no liability to such parties.

Groundtech Consulting Ltd that this Report is to be used for the Purpose. The Purpose was instrumental in determining the scope and of the Services provided. If the Purpose should change, the Client may not be able to rely on the Report without the separate agreement of Groundtech Consulting Ltd.

Since the Report was written, later changes in legislation, statutory requirements and industry best practices have not been considered and this should be allowed for. Ground conditions can also change (see below) and should be investigated if there is any significant delay in acting on the findings of this Report. The period of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions in this Report should not be relied upon in the future without written confirmation from Groundtech Consulting Ltd that it is safe to do so.

The observations and conclusions outlined in this Report are based exclusively on the services that were provided as set out in the agreement between the client and Groundtech Consulting Ltd.

Groundtech Consulting Ltd is not liable for the existence of any condition, the discovery of which would require additional investigation outside the agreed scope of works or core competency. The Report is based upon Groundtech Consulting Ltd's observations of existing physical conditions at the Site gained from site reconnaissance together with interpretation of information including documentation, obtained from third parties and from the Client on the history and usage of the Site. The findings and recommendations contained in this Report are based in part upon information provided by third parties, and Groundtech Consulting Ltd have relied upon such information assuming it to be correct.

Groundtech Consulting Ltd accepts no responsibility for errors or inaccuracies in third party information presented in this Report. Groundtech Consulting Ltd was not authorised to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services or Additional Services. Groundtech Consulting Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, which may inform the scope of investigation undertaken by Groundtech Consulting Ltd and forms the contract with the client.



Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions may also vary due to the ground's heterogeneous properties and because investigation exploratory locations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this Report, particularly between exploratory holes. The extent of the limited area depends on the soil and groundwater conditions, together with other constraints such as the position of any existing structures and underground utilities. If so stipulated in the Agreement, geo-environmental testing was carried out for a limited number of parameters based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

Any groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The groundwater level often has not had time to reach equilibrium and a monitoring period is required. Furthermore, groundwater levels are subject to seasonal variation or changes in local drainage conditions and groundwater levels may occur at other times of the year which are higher than were recorded during this investigation.

Any site drawings provided in this Report are preliminary and used to present the general relative locations of features on, and surrounding, the Site.



UK and Ireland Office Locations

