May Gurney

May Gurney Geotechnical

Laboratory Test Results

Contract No. SI0764

Sheet 1 of 4

Site : Boston

Client / Engineer : Wardell Armstrong

Date 16/07/04

SAMPLE DETAILS			INDEX TESTS					CHEMICAL				DENSITIES			STRENGTH						
BH /TP	DEPTH (m)	TYPE	W %	LL %	PL %	PI (x)	Code	TOTAL SO_3 % (%<2mm)	SOLUBLE SO_3 g/l (%<2mm)	pH	ORG %	Part Dens Mg/m^3	BULK Mg/m^3	DRY Mg/m^3	TYPE	DIA (mm)	σ_3	$\sigma_1-\sigma_3$	C_u KPa	$\varnothing_u$ (°)	REMARKS
BH1	0.50	D1	29																		
	1.00	U1		37	20	17(100)															HV = 32.1Kpa
	2.00	D3							0.47	7.57											
	3.00	U2	23										1.734	1.414	QS	102	60	10.21	5.10		
	3.00	D4	24																		Result outstanding
	5.50	D6	19																		
	7.00	D8							0.15	8.42											
	8.00	D9		39	20	19(98)															
	10.00	D11	16																		
BH2	0.50	D1	27																		
	1.00	U1		51	29	22(100)															HV = 33.2Kpa
	1.50	D2							0.14	7.67											
	2.50	D3		47	22	25(100)															
	3.00	U2	43																		Unable to test triaxial HV = 14.9Kpa
	3.50	D4	18																		
	4.50	B1																			Particle Size Distribution
	6.00	D7	16																		
	9.00	D10	15						0.40	7.84											
BH3	1.00	U1	31										1.972	1.501	QS	102	35	68.71	34.36		
	1.45	D2																			Result outstanding
	2.00	D3	32																		
	3.00	U2	45	50	25	25(100)															Unable to test triaxial HV = 9.2Kpa
	3.45	D4							0.35	7.57											
	5.30	U3																			Sample not found

U	Undisturbed	(x)	% passing B.S. 425μm sieve	Hv	Laboratory hand vane	$\sigma_1-\sigma_3$	Deviator Stress
D	Disturbed	ORG	Organic matter content	Q	Quick Undrained	σ_3	Cell pressure
B	Bulk	L.O.I.	Loss on ignition	S	Single Stage	$\varnothing_u$	Angle of shear resistance
W	Water	To convert SO_3 to SO_4 x by 1.2		M	Multi Stage	Tested By :	KL / JR / WB / AS

May Gurney

May Gurney Geotechnical

Laboratory Test Results

Contract No. SI0764 Sheet 2 of 4

Site : Boston

Client / Engineer : Wardell Armstrong

Date 16/07/04

SAMPLE DETAILS			INDEX TESTS					CHEMICAL				DENSITIES			STRENGTH						
BH /TP	DEPTH (m)	TYPE	W %	LL %	PL %	PI (x)	Code	TOTAL SO_3 % (%<2mm)	SOLUBLE SO_3 g/l (%<2mm)	pH	ORG %	Part Dens Mg/m^3	BULK Mg/m^3	DRY Mg/m^3	TYPE	DIA (mm)	σ_3	$\sigma_1-\sigma_3$	C_u KPa	$\varnothing_u$ (°)	REMARKS
BH3	5.75	D7	16																		
	7.10	D9							0.29	8.55											
	9.20	D11	17																		
BH4	1.00	U1	28	38	21	17(100)							1.876	1.471	QS	102	35	68.12	34.06		
	1.45	D2	32						0.07	7.73											
	3.00	U2																			HV = 91.5Kpa
	4.00	D4	22																		
	5.00	U3																			Sample not found
	6.20	D8		39	19	20(99)															
	9.30	D9	18						0.32	8.29											
BH5	1.00	U1	29	35	22	17(100)															Unable to test triaxial HV = 22.9Kpa
	1.50	D2	35																		
	2.00	D3							0.22	7.46											
	3.00	U2	34																		HV = 6.9Kpa
	3.50	D4	37																		Result outstanding
	4.00	D5																			Result outstanding
	5.00	U3	19	43	20	23(99)							2.132	1.793	QS	102	100	168.67	84.34		
	6.00	D7	23																		
	9.00	D10							0.13	8.31											
	10.00	D11		33	16	17(96)															
	12.00	D13	15																		

U Undisturbed
D Disturbed
B Bulk
W Water

(x) % passing B.S. 425μm sieve
ORG Organic matter content
L.O.I. Loss on ignition
To convert SO_3 to SO_4 x by 1.2

Hv Laboratory hand vane
Q Quick Undrained
S Single Stage
M Multi Stage

$\sigma_1-\sigma_3$ Deviator Stress
σ_3 Cell pressure
$\varnothing_u$ Angle of shear resistance
Tested By : KL / JR / WB / AS

May Gurney

May Gurney Geotechnical

Laboratory Test Results

Contract No. SI0764 Sheet 3 of 4

Site : Boston

Client / Engineer : Wardell Armstrong

Date 16/07/04

SAMPLE DETAILS			INDEX TESTS					CHEMICAL				DENSITIES			STRENGTH						
BH /TP	DEPTH (m)	TYPE	W %	LL %	PL %	PI (x)	Code	TOTAL SO_3 % (%<2mm)	SOLUBLE SO_3 g/l (%<2mm)	pH	ORG %	Part Dens Mg/m^3	BULK Mg/m^3	DRY Mg/m^3	TYPE	DIA (mm)	σ_3	$\sigma_1-\sigma_3$	C_u KPa	$\varnothing_u$ (°)	REMARKS
BH6	0.50	D1	25																		
	1.00	U1																			HV = 55.2Kpa
	1.50	D2							0.04	7.86											
	3.00	U2																			HV = 13.7Kpa
	3.0–3.8	B1	39																		
	4.80	B2																			Particle Size Distribution
	5.50	U3	17										2.128	1.814	QS	102	100	313.72	156.86		
	6.00	D7	19																		
	7.00	D8							0.20	8.34											
	9.00	D10	18																		
BH7	1.00	U1	29										1.812	1.410	QS	102	35	70.70	35.35		
	1.45	D2	34																		
	2.00	D3		52	29	23(100)															Result outstanding
	3.00	U2																			HV = 78.1Kpa
	3.80	D4							0.27	8.24											
	5.00	U3																			Sample not found
	5.45	D6	21																		
	7.00	D8							0.32	8.18											
	8.00	D9	20																		
	11.10	D12	14																		
BH8	1.00	U1	31	45	22	23(100)							1.888	1.442	QS	102	25	77.64	38.82		
	1.45	D2	31																		
	2.00	D3							0.11	7.69											
	4.00	D4	25																		

U Undisturbed
D Disturbed
B Bulk
W Water

(x) % passing B.S. 425μm sieve
ORG Organic matter content
L.O.I. Loss on ignition
To convert SO_3 to SO_4 x by 1.2

Hv Laboratory hand vane
Q Quick Undrained
S Single Stage
M Multi Stage

$\sigma_1-\sigma_3$ Deviator Stress
σ_3 Cell pressure
$\varnothing_u$ Angle of shear resistance
Tested By : KL / JR / WB / AS

May Gurney

May Gurney Geotechnical

Laboratory Test Results

Contract No. SI0764

Sheet 4 of 4

Site : Boston

Client / Engineer : Wardell Armstrong

Date 16/07/04

SAMPLE DETAILS			INDEX TESTS					CHEMICAL				DENSITIES			STRENGTH						
BH /TP	DEPTH (m)	TYPE	W %	LL %	PL %	PI (x)	Code	TOTAL SO_3 % (%<2mm)	SOLUBLE SO_3 g/l (%<2mm)	pH	ORG %	Part Dens Mg/m^3	BULK Mg/m^3	DRY Mg/m^3	TYPE	DIA (mm)	σ_3	$\sigma_1-\sigma_3$	C_u KPa	$\varnothing_u$ (°)	REMARKS
BH8	5.00	U3	20																		Unable to test triaxial HV = 24.0Kpa
	5.45	D5	20						0.51	8.84											
	6.30	D6		30	17	13(93)															
	7.30	D7	16																		
BH9	0.50	D1	30																		
	1.00	U1																			HV = 28.3Kpa
	2.00	D3							0.05	7.91											
	3.00	U2																			HV = 21.8Kpa
	3.50	D4		35	12	23(83)															Result outstanding
	4.00	B1	16																		Particle Size Distribution
	6.00	D7	14																		
	7.00	D8							0.32	8.49											
	10.00	D11	13																		
BH10	1.00	U1																			HV = 36.6Kpa
	1.50	D2	29	50	25	25(100)															
	2.00	D3																			Result outstanding
	3.50	D4	21																		
	4.50	B1																			Particle Size Distribution
	3.0-3.5	U2																			HV = 17.2Kpa
	8.00	D9	16																		
	9.00	D10																			Result outstanding
	11.00	D12	14																		

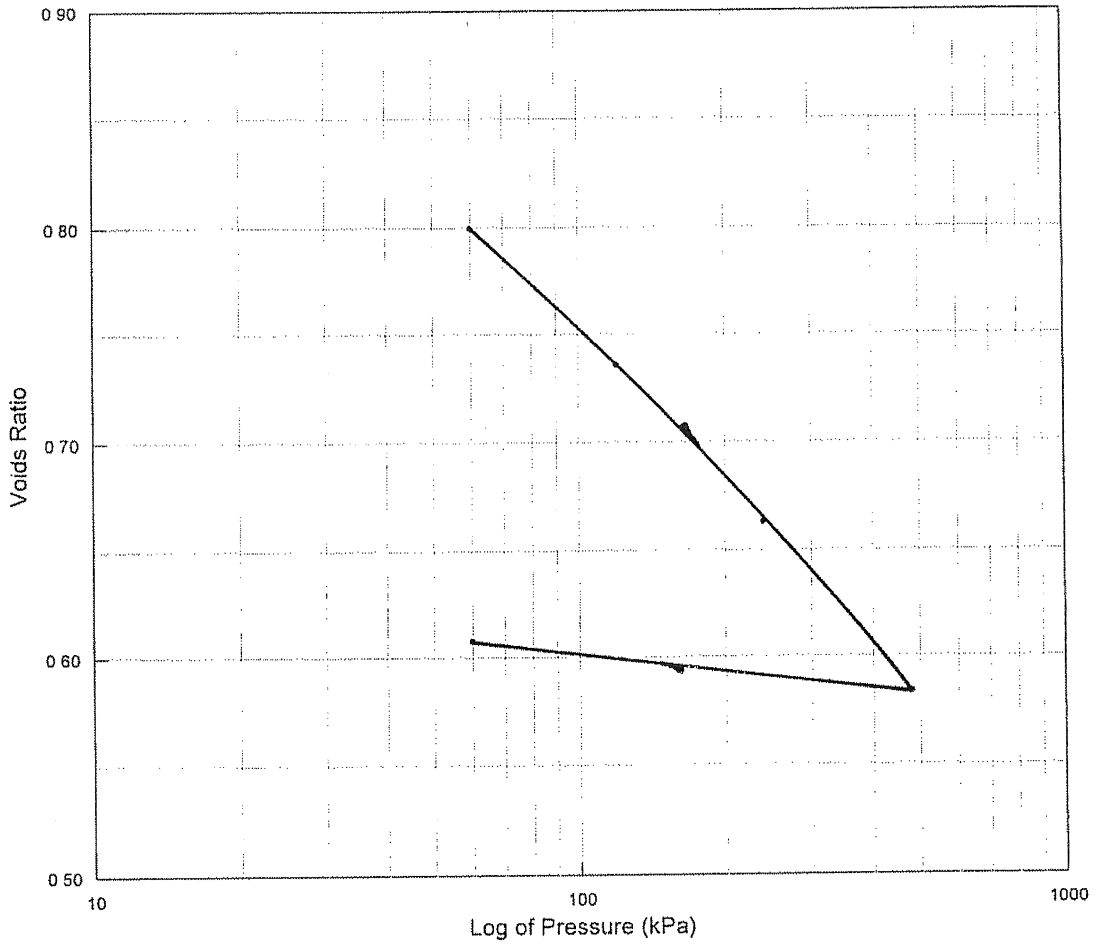
U	Undisturbed	(x)	% passing B.S. 425μm sieve	Hv	Laboratory hand vane	$\sigma_1-\sigma_3$	Deviator Stress
D	Disturbed	ORG	Organic matter content	Q	Quick Undrained	σ_3	Cell pressure
B	Bulk	L.O.I.	Loss on ignition	S	Single Stage	$\varnothing_u$	Angle of shear resistance
W	Water	To convert SO_3 to SO_4 x by 1.2		M	Multi Stage	Tested By :	KL / JR / WB / AS

BS1377 : Part 5 : Clause 3 : 1990

Determination of One Dimensional Consolidation Properties of Soil

Borehole No:	3
Sample No:	U2
Depth:	3.00m
Depth within original sample:	3.03m
Orientation:	Vertical
Specimen preparation:	Undisturbed

Description:
Soft dark brownish grey very sandy slightly organic CLAY with partings of fine to coarse sand



Initial Conditions:

Moisture Content (%)	41
Voids Ratio	1.064
Diameter (mm)	76.2
Height (mm)	18.6
Bulk Density (Mg/m³)	1.81
Dry Density (Mg/m³)	1.28

Final Conditions:

Moisture Content (%)	25	
Voids Ratio	0.608	
Particle Density (Mg/m³)	2.65	(Assumed)
Laboratory Temperature (°C)	22	

Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)	Time Fitting Method	Voids Ratio
0 - 60	2.135	0.767	t50	0.800
60 - 120	0.592	0.755	t50	0.736
120 - 240	0.349	0.714	t50	0.663
240 - 480	0.199	1.54	t50	0.584
480 - 60	-0.036	2.96 (Sv)	t50	0.608

Checked and Approved
Initials: GJC
Date: 10/8/04

Project Number: **GEO / 7324**

Project Name: **BOSTON**

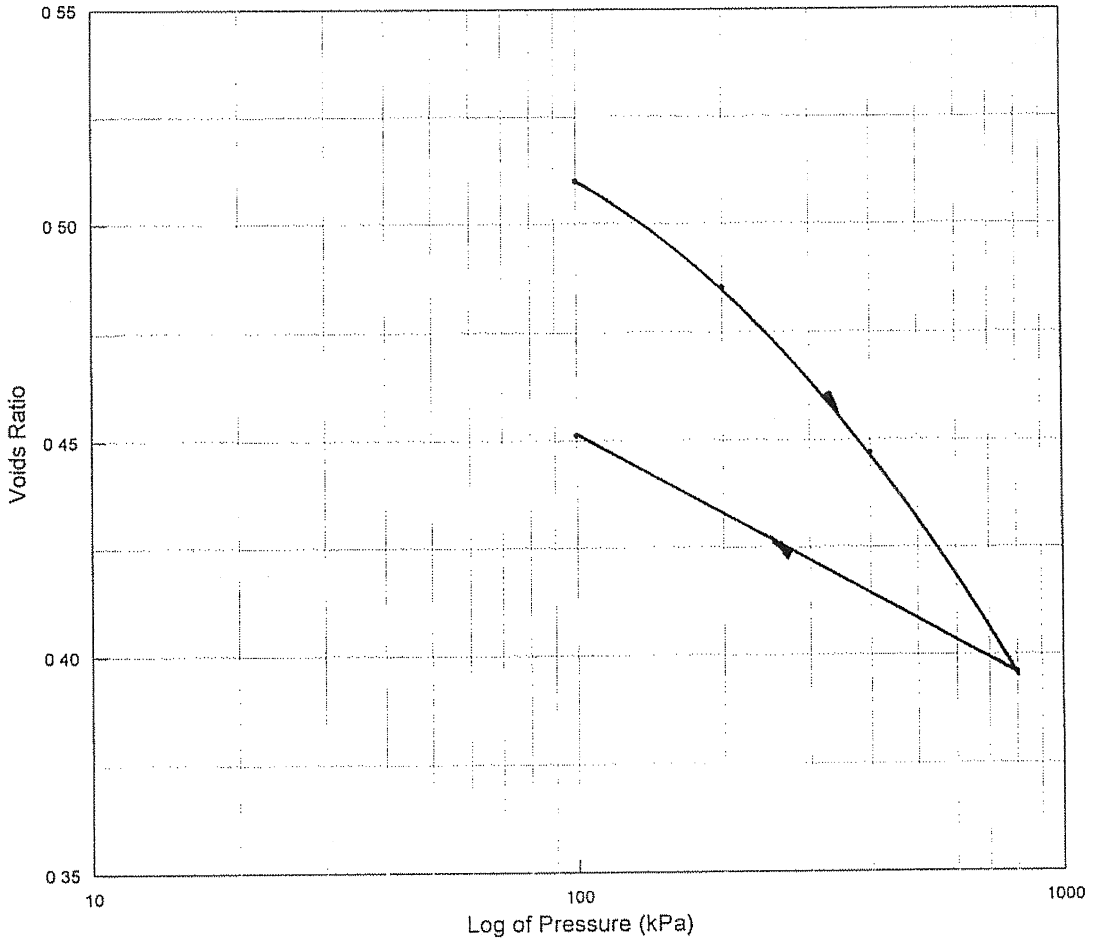
GEOLABS

BS1377 : Part 5 : Clause 3 : 1990

Determination of One Dimensional Consolidation Properties of Soil

Borehole No:	3
Sample No:	U3
Depth:	5.30m
Depth within original sample:	5.35m
Orientation:	Vertical
Specimen preparation:	Undisturbed

Description:
Stiff dark grey slightly sandy CLAY with fine to medium chalk gravel and occasionally siltstone



Initial Conditions:

Moisture Content (%)	21
Voids Ratio	0.552
Diameter (mm)	76 2
Height (mm)	18.8
Bulk Density (Mg/m³)	2 09
Dry Density (Mg/m³)	1 73

Final Conditions:

Moisture Content (%)	20
Voids Ratio	0 451
Particle Density (Mg/m³)	2 68 (Assumed)
Laboratory Temperature (°C)	22

Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)	Time Fitting Method	Voids Ratio
0 - 100	0.273	3.21*	t50	0.510
100 - 200	0.164	0.416	t50	0.485
200 - 400	0.129	0.598	t50	0.447
400 - 800	0.088	0.669	t50	0.396
800 - 100	-0.057	0.275 (Sv)	t50	0.451

* Guide only

Checked and Approved
Initials: SJC
Date: 10/8/04

Project Number: **GEO / 7324**

Project Name: **BOSTON**

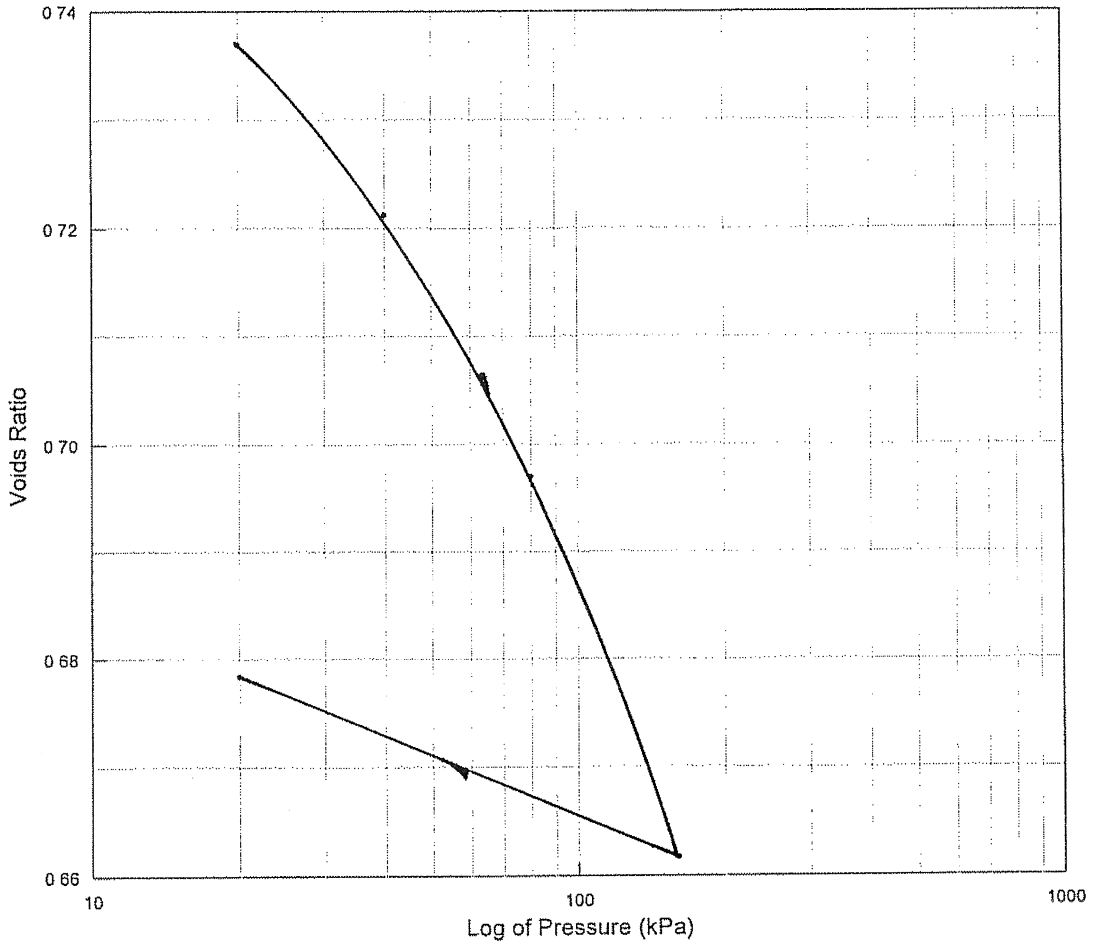
GEOLABS

BS1377 : Part 5 : Clause 3 : 1990

Determination of One Dimensional Consolidation Properties of Soil

Borehole No:	7
Sample No:	U1
Depth:	1.00m
Depth within original sample:	-
Orientation:	Vertical
Specimen preparation:	Undisturbed

Description:
Firm dark mauvey brown very sandy CLAY with pockets and partings of mid-brown sand



Initial Conditions:

Moisture Content (%)	28
Voids Ratio	0.762
Diameter (mm)	76 2
Height (mm)	18.7
Bulk Density (Mg/m³)	1 92
Dry Density (Mg/m³)	1 50

Final Conditions:

Moisture Content (%)	27
Voids Ratio	0 678
Particle Density (Mg/m³)	2 65 (Assumed)
Laboratory Temperature (°C)	22

Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)	Time Fitting Method	Voids Ratio
0 - 20	0.713	1.61	t50	0.737
20 - 40	0.450	2.06	t50	0.721
40 - 80	0.353	3.29	t50	0.697
80 - 160	0.260	4.08	t50	0.662
160 - 20	-0.072	6.39 (Sv)	t50	0.678

Checked and Approved
Initials: GJC
Date: 10/8/04

Project Number: GEO / 7324

Project Name: BOSTON

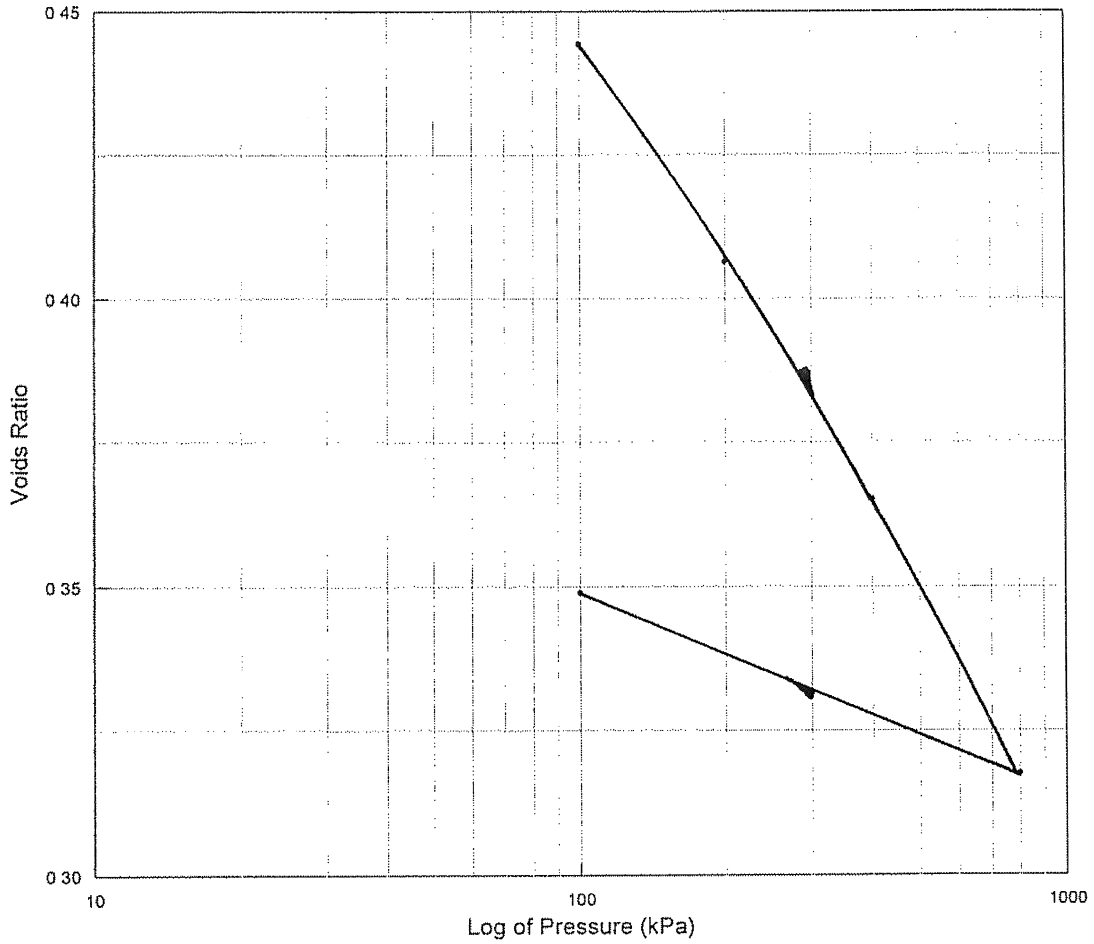
GEOLABS

BS1377 : Part 5 : Clause 3 : 1990

Determination of One Dimensional Consolidation Properties of Soil

Borehole No:	7
Sample No:	U3
Depth:	5.00m
Depth within original sample:	5.04m
Orientation:	Vertical
Specimen preparation:	Undisturbed

Description:
Firm grey sandy CLAY with softened pockets and some fine to medium chalk gravel



Initial Conditions:

Moisture Content (%)	17
Voids Ratio	0.521
Diameter (mm)	76 2
Height (mm)	18.8
Bulk Density (Mg/m³)	2 06
Dry Density (Mg/m³)	1 76

Final Conditions:

Moisture Content (%)	18	
Voids Ratio	0 349	
Particle Density (Mg/m³)	2 67	(Assumed)
Laboratory Temperature (°C)	22	

Pressure Range (kPa)	Mv (m²/MN)	Cv (m²/yr)	Time Fitting Method	Voids Ratio
0 - 100	0.506	0.346	t50	0.444
100 - 200	0.262	0.443	t50	0.406
200 - 400	0.147	0.630	t50	0.365
400 - 800	0.087	0.802	t50	0.318
800 - 100	-0.034	0.624 (Sv)	t50	0.349

Checked and Approved
Initials: CJL
Date: 10/8/04

Project Number: GEO / 7324

Project Name: BOSTON

GEOLABS

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 4041	Sample Identity BH8 U1	Depth 1m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 25

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	11	7.02	8212.34	8.55	0.04	8.51	4.26
2	1.0	18	11.49	8253.82	13.93	0.06	13.87	6.93
3	1.5	24	15.33	8295.72	18.48	0.10	18.38	9.19
4	2.0	30	19.16	8338.04	22.98	0.13	22.85	11.42
5	2.5	35	22.35	8380.80	26.67	0.16	26.51	13.25
6	3.0	41	26.18	8424.00	31.08	0.17	30.91	15.46
7	3.5	47	30.01	8467.65	35.45	0.20	35.25	17.62
8	4.0	54	34.48	8511.75	40.51	0.22	40.29	20.15
9	4.5	59	37.68	8556.31	44.03	0.24	43.79	21.90
10	5.0	64	40.87	8601.35	47.52	0.27	47.25	23.62
11	5.5	69	44.06	8646.86	50.96	0.29	50.67	25.33
12	6.0	74	47.26	8692.85	54.36	0.32	54.04	27.02
13	6.5	76	48.53	8739.34	55.53	0.33	55.20	27.60
14	7.0	79	50.45	8786.32	57.42	0.35	57.07	28.53
15	7.5	85	54.28	8833.82	61.45	0.37	61.08	30.54
16	8.0	87	55.56	8881.83	62.55	0.38	62.17	31.09
17	8.5	91	58.11	8930.36	65.07	0.41	64.66	32.33
18	9.0	95	60.67	8979.43	67.56	0.42	67.14	33.57
19	9.5	98	62.58	9029.04	69.31	0.45	68.86	34.43
20	10.0	100	63.86	9079.20	70.34	0.46	69.88	34.94
21	10.5	103	65.78	9129.92	72.04	0.48	71.56	35.78
22	11.0	105	67.05	9181.21	73.03	0.49	72.54	36.27
23	11.5	108	68.97	9233.08	74.70	0.51	74.19	37.09
24	12.0	111	70.88	9285.55	76.34	0.53	75.81	37.90
25	12.5	113	72.16	9338.61	77.27	0.54	76.73	38.37
26	13.0	115	73.44	9392.28	78.19	0.55	77.64	38.82
27	13.5	115	73.44	9446.57	77.74	0.57	77.17	38.59
28	14.0	115	73.44	9501.49	77.29	0.58	76.71	38.36
29	14.5			9557.05		0.60		
30	15.0			9613.27		0.62		
31	15.5			9670.15		0.63		
32	16.0			9727.71		0.64		
33	16.5			9785.96		0.65		
34	17.0			9844.92		0.67		
35	17.5			9904.58		0.68		
36	18.0			9964.98		0.70		
37	18.5			10026.11		0.72		
38	19.0			10088.00		0.73		
39	19.5			10150.66		0.75		
40	20.0			10214.10		0.76		

W%	30.9
Bulk Density (Mg/m³)	1.888
Dry Density (Mg/m³)	1.442

Max. Shear Strength =	38.82
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 4031	Sample Identity BH7 U1	Depth 1m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 35

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	15	9.58	8212.34	11.66	0.04	11.62	5.81
2	1.0	24	15.33	8253.82	18.57	0.06	18.51	9.25
3	1.5	31	19.80	8295.72	23.86	0.10	23.76	11.88
4	2.0	37	23.63	8338.04	28.34	0.13	28.21	14.10
5	2.5	43	27.46	8380.80	32.77	0.16	32.61	16.30
6	3.0	46	29.38	8424.00	34.87	0.17	34.70	17.35
7	3.5	55	35.12	8467.65	41.48	0.20	41.28	20.64
8	4.0	62	39.59	8511.75	46.52	0.22	46.30	23.15
9	4.5	69	44.06	8556.31	51.50	0.24	51.26	25.63
10	5.0	75	47.90	8601.35	55.68	0.27	55.41	27.71
11	5.5	80	51.09	8646.86	59.08	0.29	58.79	29.40
12	6.0	83	53.00	8692.85	60.97	0.32	60.65	30.33
13	6.5	85	54.28	8739.34	62.11	0.33	61.78	30.89
14	7.0	90	57.47	8786.32	65.41	0.35	65.06	32.53
15	7.5	93	59.39	8833.82	67.23	0.37	66.86	33.43
16	8.0	96	61.31	8881.83	69.02	0.38	68.64	34.32
17	8.5	98	62.58	8930.36	70.08	0.41	69.67	34.83
18	9.0	100	63.86	8979.43	71.12	0.42	70.70	35.35
19	9.5	100	63.86	9029.04	70.73	0.45	70.28	35.14
20	10.0	100	63.86	9079.20	70.34	0.46	69.88	34.94
21	10.5			9129.92		0.48		
22	11.0			9181.21		0.49		
23	11.5			9233.08		0.51		
24	12.0			9285.55		0.53		
25	12.5			9338.61		0.54		
26	13.0			9392.28		0.55		
27	13.5			9446.57		0.57		
28	14.0			9501.49		0.58		
29	14.5			9557.05		0.60		
30	15.0			9613.27		0.62		
31	15.5			9670.15		0.63		
32	16.0			9727.71		0.64		
33	16.5			9785.96		0.65		
34	17.0			9844.92		0.67		
35	17.5			9904.58		0.68		
36	18.0			9964.98		0.70		
37	18.5			10026.11		0.72		
38	19.0			10088.00		0.73		
39	19.5			10150.66		0.75		
40	20.0			10214.10		0.76		

W%	28.5
Bulk Density (Mg/m³)	1.812
Dry Density (Mg/m³)	1.410

Max. Shear Strength =	35.35
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 4027	Sample Identity BH6 U3	Depth 5.5m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 100

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	40	25.54	8212.34	31.10	0.04	31.06	15.53
2	1.0	74	47.26	8253.82	57.25	0.06	57.19	28.60
3	1.5	108	68.97	8295.72	83.14	0.10	83.04	41.52
4	2.0	134	85.57	8338.04	102.63	0.13	102.50	51.25
5	2.5	157	100.26	8380.80	119.63	0.16	119.47	59.74
6	3.0	176	112.39	8424.00	133.42	0.17	133.25	66.63
7	3.5	195	124.53	8467.65	147.06	0.20	146.86	73.43
8	4.0	212	135.38	8511.75	159.05	0.22	158.83	79.42
9	4.5	227	144.96	8556.31	169.42	0.24	169.18	84.59
10	5.0	243	155.18	8601.35	180.41	0.27	180.14	90.07
11	5.5	258	164.76	8646.86	190.54	0.29	190.25	95.13
12	6.0	269	171.78	8692.85	197.61	0.32	197.29	98.65
13	6.5	282	180.09	8739.34	206.06	0.33	205.73	102.87
14	7.0	294	187.75	8786.32	213.68	0.35	213.33	106.67
15	7.5	307	196.05	8833.82	221.93	0.37	221.56	110.78
16	8.0	318	203.07	8881.83	228.64	0.38	228.26	114.13
17	8.5	326	208.18	8930.36	233.12	0.41	232.71	116.35
18	9.0	338	215.85	8979.43	240.38	0.42	239.96	119.98
19	9.5	348	222.23	9029.04	246.13	0.45	245.68	122.84
20	10.0	358	228.62	9079.20	251.81	0.46	251.35	125.67
21	10.5	367	234.37	9129.92	256.70	0.48	256.22	128.11
22	11.0	375	239.48	9181.21	260.83	0.49	260.34	130.17
23	11.5	383	244.58	9233.08	264.90	0.51	264.39	132.19
24	12.0	392	250.33	9285.55	269.59	0.53	269.06	134.53
25	12.5	400	255.44	9338.61	273.53	0.54	272.99	136.50
26	13.0	408	260.55	9392.28	277.41	0.55	276.86	138.43
27	13.5	415	265.02	9446.57	280.55	0.57	279.98	139.99
28	14.0	422	269.49	9501.49	283.63	0.58	283.05	141.52
29	14.5	429	273.96	9557.05	286.66	0.60	286.06	143.03
30	15.0	438	279.71	9613.27	290.96	0.62	290.34	145.17
31	15.5	445	284.18	9670.15	293.87	0.63	293.24	146.62
32	16.0	453	289.29	9727.71	297.38	0.64	296.74	148.37
33	16.5	460	293.76	9785.96	300.18	0.65	299.53	149.77
34	17.0	464	296.31	9844.92	300.98	0.67	300.31	150.15
35	17.5	472	301.42	9904.58	304.32	0.68	303.64	151.82
36	18.0	478	305.25	9964.98	306.32	0.70	305.62	152.81
37	18.5	484	309.08	10026.11	308.28	0.72	307.56	153.78
38	19.0	490	312.91	10088.00	310.18	0.73	309.45	154.73
39	19.5	497	317.38	10150.66	312.67	0.75	311.92	155.96
40	20.0	503	321.22	10214.10	314.48	0.76	313.72	156.86

W%	17.3
Bulk Density (Mg/m³)	2.128
Dry Density (Mg/m³)	1.814

Max. Shear Strength =	156.86
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 4016	Sample Identity BH5 U3	Depth 5m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 100

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	26	16.60	8212.34	20.22	0.04	20.18	10.09
2	1.0	40	25.54	8253.82	30.95	0.06	30.89	15.44
3	1.5	55	35.12	8295.72	42.34	0.10	42.24	21.12
4	2.0	68	43.42	8338.04	52.08	0.13	51.95	25.98
5	2.5	81	51.73	8380.80	61.72	0.16	61.56	30.78
6	3.0	90	57.47	8424.00	68.23	0.17	68.06	34.03
7	3.5	98	62.58	8467.65	73.91	0.20	73.71	36.85
8	4.0	106	67.69	8511.75	79.53	0.22	79.31	39.65
9	4.5	115	73.44	8556.31	85.83	0.24	85.59	42.80
10	5.0	124	79.19	8601.35	92.06	0.27	91.79	45.90
11	5.5	132	84.30	8646.86	97.49	0.29	97.20	48.60
12	6.0	140	89.40	8692.85	102.85	0.32	102.53	51.26
13	6.5	145	92.60	8739.34	105.95	0.33	105.62	52.81
14	7.0	150	95.79	8786.32	109.02	0.35	108.67	54.34
15	7.5	158	100.90	8833.82	114.22	0.37	113.85	56.92
16	8.0	165	105.37	8881.83	118.63	0.38	118.25	59.13
17	8.5	171	109.20	8930.36	122.28	0.41	121.87	60.94
18	9.0	177	113.03	8979.43	125.88	0.42	125.46	62.73
19	9.5	182	116.23	9029.04	128.72	0.45	128.27	64.14
20	10.0	185	118.14	9079.20	130.12	0.46	129.66	64.83
21	10.5	190	121.33	9129.92	132.90	0.48	132.42	66.21
22	11.0	198	126.44	9181.21	137.72	0.49	137.23	68.61
23	11.5	204	130.27	9233.08	141.10	0.51	140.59	70.29
24	12.0	208	132.83	9285.55	143.05	0.53	142.52	71.26
25	12.5	212	135.38	9338.61	144.97	0.54	144.43	72.22
26	13.0	216	137.94	9392.28	146.86	0.55	146.31	73.16
27	13.5	218	139.21	9446.57	147.37	0.57	146.80	73.40
28	14.0	224	143.05	9501.49	150.55	0.58	149.97	74.99
29	14.5	229	146.24	9557.05	153.02	0.60	152.42	76.21
30	15.0	233	148.79	9613.27	154.78	0.62	154.16	77.08
31	15.5	237	151.35	9670.15	156.51	0.63	155.88	77.94
32	16.0	241	153.90	9727.71	158.21	0.64	157.57	78.79
33	16.5	245	156.46	9785.96	159.88	0.65	159.23	79.61
34	17.0	250	159.65	9844.92	162.16	0.67	161.49	80.75
35	17.5	253	161.57	9904.58	163.12	0.68	162.44	81.22
36	18.0	256	163.48	9964.98	164.06	0.70	163.36	81.68
37	18.5	260	166.04	10026.11	165.60	0.72	164.88	82.44
38	19.0	264	168.59	10088.00	167.12	0.73	166.39	83.19
39	19.5	267	170.51	10150.66	167.98	0.75	167.23	83.61
40	20.0	271	173.06	10214.10	169.43	0.76	168.67	84.34

W%	18.9
Bulk Density (Mg/m³)	2.132
Dry Density (Mg/m³)	1.793

Max. Shear Strength =	84.34
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 4003	Sample Identity BH4 U1	Depth 1m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 35

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	10	6.39	8212.34	7.78	0.04	7.74	3.87
2	1.0	17	10.86	8253.82	13.15	0.06	13.09	6.55
3	1.5	24	15.33	8295.72	18.48	0.10	18.38	9.19
4	2.0	31	19.80	8338.04	23.74	0.13	23.61	11.81
5	2.5	37	23.63	8380.80	28.19	0.16	28.03	14.02
6	3.0	42	26.82	8424.00	31.84	0.17	31.67	15.83
7	3.5	47	30.01	8467.65	35.45	0.20	35.25	17.62
8	4.0	54	34.48	8511.75	40.51	0.22	40.29	20.15
9	4.5	60	38.32	8556.31	44.78	0.24	44.54	22.27
10	5.0	64	40.87	8601.35	47.52	0.27	47.25	23.62
11	5.5	69	44.06	8646.86	50.96	0.29	50.67	25.33
12	6.0	71	45.34	8692.85	52.16	0.32	51.84	25.92
13	6.5	73	46.62	8739.34	53.34	0.33	53.01	26.51
14	7.0	77	49.17	8786.32	55.96	0.35	55.61	27.81
15	7.5	80	51.09	8833.82	57.83	0.37	57.46	28.73
16	8.0	83	53.00	8881.83	59.68	0.38	59.30	29.65
17	8.5	85	54.28	8930.36	60.78	0.41	60.37	30.19
18	9.0	86	54.92	8979.43	61.16	0.42	60.74	30.37
19	9.5	89	56.84	9029.04	62.95	0.45	62.50	31.25
20	10.0	91	58.11	9079.20	64.01	0.46	63.55	31.77
21	10.5	94	60.03	9129.92	65.75	0.48	65.27	32.63
22	11.0	95	60.67	9181.21	66.08	0.49	65.59	32.79
23	11.5	97	61.94	9233.08	67.09	0.51	66.58	33.29
24	12.0	98	62.58	9285.55	67.40	0.53	66.87	33.43
25	12.5	100	63.86	9338.61	68.38	0.54	67.84	33.92
26	13.0	101	64.50	9392.28	68.67	0.55	68.12	34.06
27	13.5	101	64.50	9446.57	68.28	0.57	67.71	33.85
28	14.0	101	64.50	9501.49	67.88	0.58	67.30	33.65
29	14.5			9557.05		0.60		
30	15.0			9613.27		0.62		
31	15.5			9670.15		0.63		
32	16.0			9727.71		0.64		
33	16.5			9785.96		0.65		
34	17.0			9844.92		0.67		
35	17.5			9904.58		0.68		
36	18.0			9964.98		0.70		
37	18.5			10026.11		0.72		
38	19.0			10088.00		0.73		
39	19.5			10150.66		0.75		
40	20.0			10214.10		0.76		

W%	27.5
Bulk Density (Mg/m³)	1.876
Dry Density (Mg/m³)	1.471

Max. Shear Strength =	34.06
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 3994	Sample Identity BH3 U1	Depth 1m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 35

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	9	5.75	8212.34	7.00	0.04	6.96	3.48
2	1.0	15	9.58	8253.82	11.61	0.06	11.55	5.77
3	1.5	21	13.41	8295.72	16.17	0.10	16.07	8.03
4	2.0	27	17.24	8338.04	20.68	0.13	20.55	10.27
5	2.5	32	20.44	8380.80	24.38	0.16	24.22	12.11
6	3.0	37	23.63	8424.00	28.05	0.17	27.88	13.94
7	3.5	42	26.82	8467.65	31.67	0.20	31.47	15.74
8	4.0	45	28.74	8511.75	33.76	0.22	33.54	16.77
9	4.5	50	31.93	8556.31	37.32	0.24	37.08	18.54
10	5.0	55	35.12	8601.35	40.83	0.27	40.56	20.28
11	5.5	59	37.68	8646.86	43.57	0.29	43.28	21.64
12	6.0	62	39.59	8692.85	45.55	0.32	45.23	22.61
13	6.5	64	40.87	8739.34	46.77	0.33	46.44	23.22
14	7.0	67	42.79	8786.32	48.70	0.35	48.35	24.17
15	7.5	71	45.34	8833.82	51.33	0.37	50.96	25.48
16	8.0	74	47.26	8881.83	53.21	0.38	52.83	26.41
17	8.5	75	47.90	8930.36	53.63	0.41	53.22	26.61
18	9.0	80	51.09	8979.43	56.89	0.42	56.47	28.24
19	9.5	81	51.73	9029.04	57.29	0.45	56.84	28.42
20	10.0	83	53.00	9079.20	58.38	0.46	57.92	28.96
21	10.5	86	54.92	9129.92	60.15	0.48	59.67	29.84
22	11.0	89	56.84	9181.21	61.90	0.49	61.41	30.71
23	11.5	91	58.11	9233.08	62.94	0.51	62.43	31.21
24	12.0	94	60.03	9285.55	64.65	0.53	64.12	32.06
25	12.5	95	60.67	9338.61	64.96	0.54	64.42	32.21
26	13.0	95	60.67	9392.28	64.59	0.55	64.04	32.02
27	13.5	98	62.58	9446.57	66.25	0.57	65.68	32.84
28	14.0	100	63.86	9501.49	67.21	0.58	66.63	33.32
29	14.5	103	65.78	9557.05	68.82	0.60	68.22	34.11
30	15.0	104	66.41	9613.27	69.09	0.62	68.47	34.23
31	15.5	105	67.05	9670.15	69.34	0.63	68.71	34.36
32	16.0	105	67.05	9727.71	68.93	0.64	68.29	34.14
33	16.5	105	67.05	9785.96	68.52	0.65	67.87	33.93
34	17.0			9844.92		0.67		
35	17.5			9904.58		0.68		
36	18.0			9964.98		0.70		
37	18.5			10026.11		0.72		
38	19.0			10088.00		0.73		
39	19.5			10150.66		0.75		
40	20.0			10214.10		0.76		

W%	31.4
Bulk Density (Mg/m³)	1.972
Dry Density (Mg/m³)	1.501

Max. Shear Strength =	34.36
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : SINGLE STAGE TRIAXIAL TEST Test Method BS 1377:part 7/9:1990

Contract Boston		Contract No. SI 0764
Sample No. 3978	Sample Identity BH1 U2	Depth 3m

Proving Ring Capacity 10	Stress Factor (N/Div) 0.6386	Cell Pressure (kN/m²) 60

Strain Dial (mm)	Strain (%)	Proving Ring Values	Load (Pa)	Area Correction (mm²)	Max. Deviator Stress (s1-s3)	Membrane Correction	Corrected M.D.S. (s1-s3)	Shear Strength Cu (kPa)
0	0.0	0	0.00	8171.28	0.00	0.00	0.00	0.00
1	0.5	2	1.28	8212.34	1.56	0.04	1.52	0.76
2	1.0	5	3.19	8253.82	3.87	0.06	3.81	1.90
3	1.5	5	3.19	8295.72	3.85	0.10	3.75	1.87
4	2.0	5	3.19	8338.04	3.83	0.13	3.70	1.85
5	2.5	8	5.11	8380.80	6.10	0.16	5.94	2.97
6	3.0	10	6.39	8424.00	7.58	0.17	7.41	3.71
7	3.5	12	7.66	8467.65	9.05	0.20	8.85	4.42
8	4.0	13	8.30	8511.75	9.75	0.22	9.53	4.77
9	4.5	14	8.94	8556.31	10.45	0.24	10.21	5.10
10	5.0	14	8.94	8601.35	10.39	0.27	10.12	5.06
11	5.5	14	8.94	8646.86	10.34	0.29	10.05	5.02
12	6.0			8692.85		0.32		
13	6.5			8739.34		0.33		
14	7.0			8786.32		0.35		
15	7.5			8833.82		0.37		
16	8.0			8881.83		0.38		
17	8.5			8930.36		0.41		
18	9.0			8979.43		0.42		
19	9.5			9029.04		0.45		
20	10.0			9079.20		0.46		
21	10.5			9129.92		0.48		
22	11.0			9181.21		0.49		
23	11.5			9233.08		0.51		
24	12.0			9285.55		0.53		
25	12.5			9338.61		0.54		
26	13.0			9392.28		0.55		
27	13.5			9446.57		0.57		
28	14.0			9501.49		0.58		
29	14.5			9557.05		0.60		
30	15.0			9613.27		0.62		
31	15.5			9670.15		0.63		
32	16.0			9727.71		0.64		
33	16.5			9785.96		0.65		
34	17.0			9844.92		0.67		
35	17.5			9904.58		0.68		
36	18.0			9964.98		0.70		
37	18.5			10026.11		0.72		
38	19.0			10088.00		0.73		
39	19.5			10150.66		0.75		
40	20.0			10214.10		0.76		

W%	22.6
Bulk Density (Mg/m³)	1.734
Dry Density (Mg/m³)	1.414

Max. Shear Strength =	5.10
Angle of Shear :	
Tested by :	KL

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : PARTICLE SIZE DISTRIBUTION

Contract	Boston		Sample 4054	Contract No.	SI 0764
Mass of dry sample (g)	1642.9	Sample	BH9 B1	Depth	4m

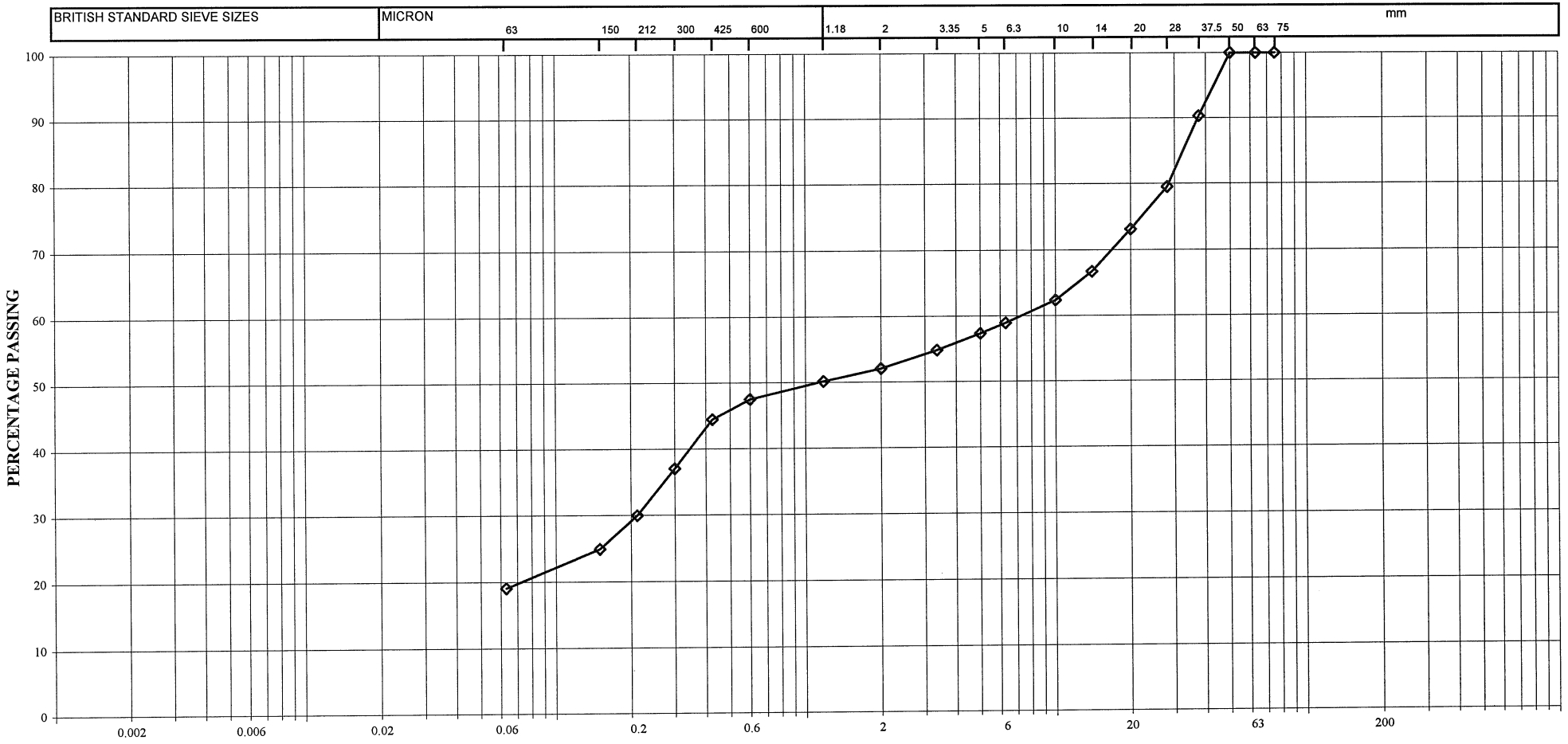
B.S. Test Sieve	Mass Retained g	Mass Retained g	Percentage Retained $\frac{\text{Mass}}{m_1} \times 100$	Total Percentage Passing	Percentage Specified
				100.0	
75.00 mm	0	0	0.0	100.0	
63.00 mm	0	0	0.0	100.0	
50.00 mm	0	0	0.0	100.0	
37.50 mm	159	159	9.7	90.3	
28.00 mm	177	177	10.8	79.5	
20.00 mm	105	105	6.4	73.1	
Passing 20mm (m_2)	0				
Riffled sample					
Passing 20mm (m_3)	0				
Riffling correction, C_1 $C_1 = \frac{m_2}{m_3} = 1$		Corrected values Mass × C_1 ret.			
14.00 mm	105	105	6.4	66.7	
10.00 mm	72	72	4.4	62.4	
6.30 mm	57	57	3.4	58.9	
Passing 6.3mm (m_4)	100				
Riffled sample					
Passing 6.3mm (m_5)	100				
Riffling correction, C_2 $C_2 = \frac{m_2}{m_3} \times \frac{m_4}{m_5} = 1.0$		Corrected values Mass × C_2 ret.			
5.00 mm	26	26	1.6	57.3	
3.35 mm	42	42	2.5	54.8	
2.00 mm	45	45	2.8	52.1	
1.18 mm	32	32	1.9	50.1	
600 µm	44	44	2.7	47.5	
425 µm	50	50	3.0	44.4	
300 µm	121	121	7.4	37.0	
212 µm	117	117	7.1	29.9	
150 µm	83	83	5.0	24.9	
63 µm	96	96	5.8	19.0	
Passing		313	19.0		

May Gurney

May Gurney Geotechnical

PARTICLE SIZE DISTRIBUTION : TEST METHOD BS 1377 : Part 2 : 1990 : 9.2 / 9.3 / 9.4

Contract	Boston		Sample BH9 B1
Date	16/07/04	Contract No. SI 0764	Depth 4m



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

TESTED BY : AS / WB

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : PARTICLE SIZE DISTRIBUTION

Contract	Boston		Sample 4026	Contract No.	SI 0764
Mass of dry sample (g)	810.8	Sample	BH6 B2	Depth	4.8m

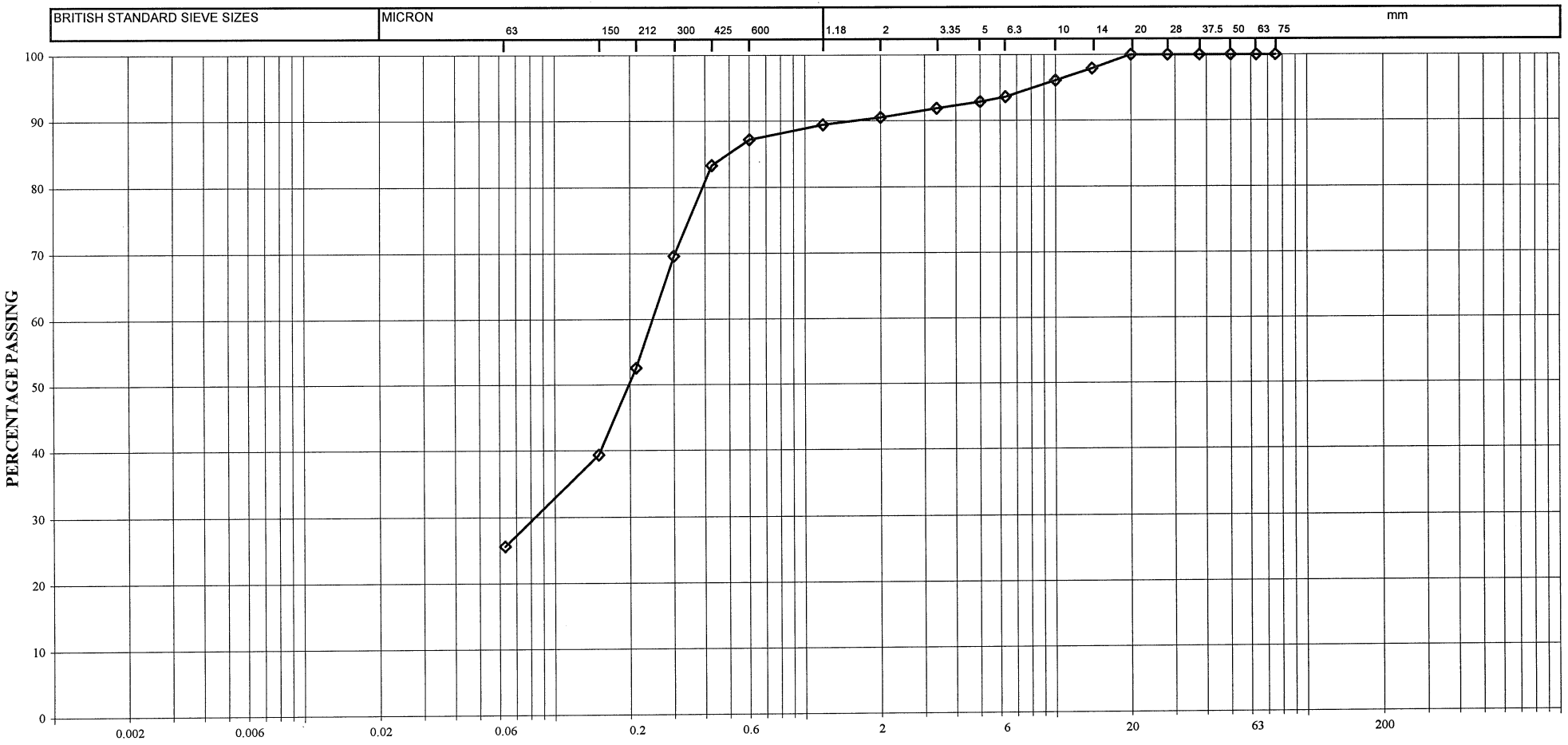
B.S. Test Sieve	Mass Retained g	Mass Retained g	Percentage Retained $\frac{\text{Mass}}{m_1} \times 100$	Total Percentage Passing	Percentage Specified
				100.0	
75.00 mm	0	0	0.0	100.0	
63.00 mm	0	0	0.0	100.0	
50.00 mm	0	0	0.0	100.0	
37.50 mm	0	0	0.0	100.0	
28.00 mm	0	0	0.0	100.0	
20.00 mm	0	0	0.0	100.0	
Passing 20mm (m_2)	0				
Riffled sample					
Passing 20mm (m_3)	0				
Riffling correction, C_1 $C_1 = \frac{m_2}{m_3} = 1$		Corrected values Mass × C_1 ret.			
14.00 mm	17	17	2.1	97.9	
10.00 mm	15	15	1.9	96.1	
6.30 mm	20	20	2.5	93.6	
Passing 6.3mm (m_4)	100				
Riffled sample					
Passing 6.3mm (m_5)	100				
Riffling correction, C_2 $C_2 = \frac{m_2}{m_3} \times \frac{m_4}{m_5} = 1.0$		Corrected values Mass × C_2 ret.			
5.00 mm	6	6	0.7	92.8	
3.35 mm	8	8	1.0	91.9	
2.00 mm	11	11	1.3	90.5	
1.18 mm	9	9	1.1	89.4	
600 µm	18	18	2.2	87.2	
425 µm	31	31	3.9	83.3	
300 µm	111	111	13.7	69.6	
212 µm	139	139	17.1	52.5	
150 µm	107	107	13.2	39.3	
63 µm	111	111	13.7	25.6	
Passing		208	25.6		

May Gurney

May Gurney Geotechnical

PARTICLE SIZE DISTRIBUTION : TEST METHOD BS 1377 : Part 2 : 1990 : 9.2 / 9.3 / 9.4

Contract	Boston		Sample BH6 B2
Date	16/07/04	Contract No. SI 0764	Depth 4.8m



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

TESTED BY : AS / WB

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : PARTICLE SIZE DISTRIBUTION

Contract	Boston		Sample 3991	Contract No.	SI 0764
Mass of dry sample (g)	373.2	Sample	BH2 B1	Depth	4.5m

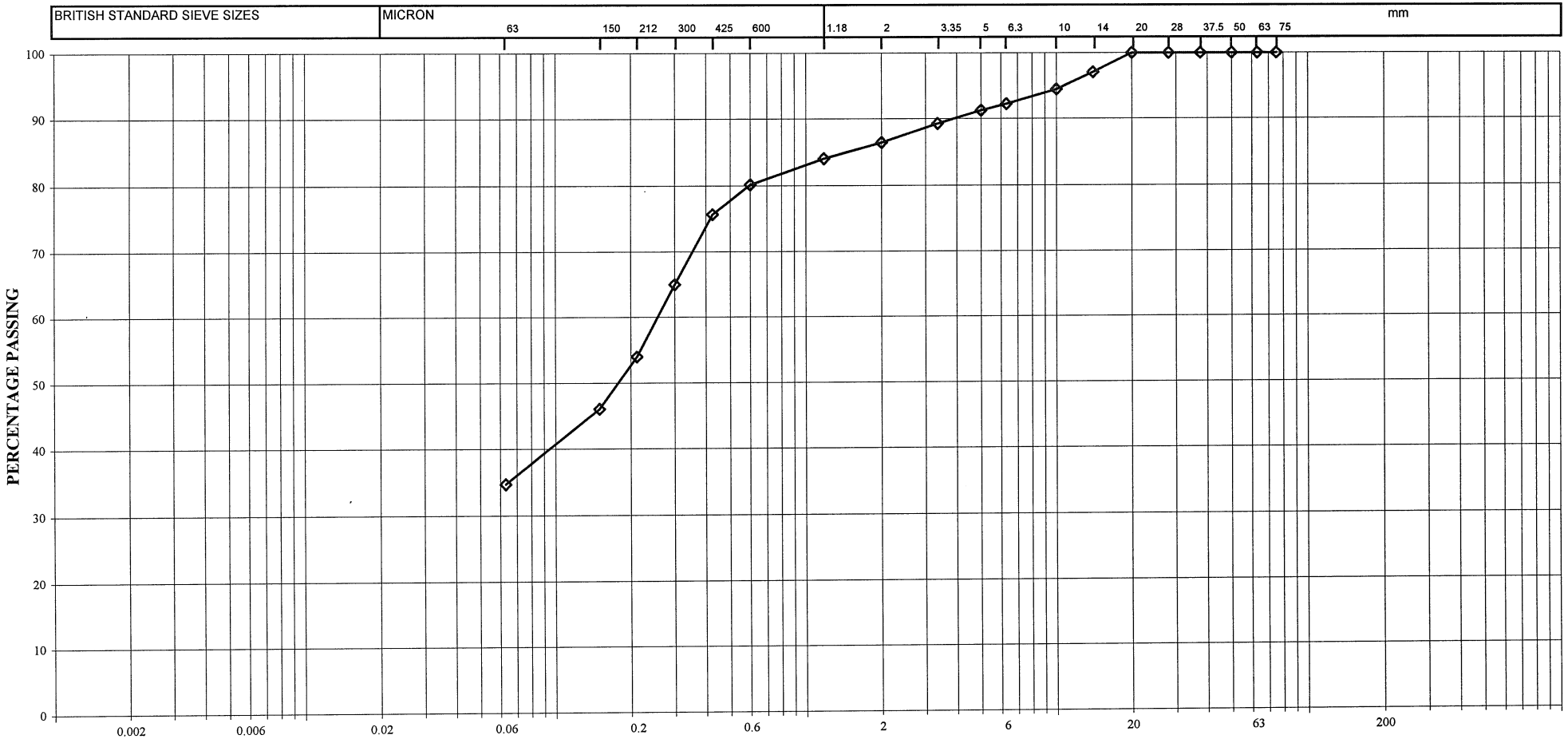
B.S. Test Sieve	Mass Retained g	Mass Retained g	Percentage Retained $\frac{\text{Mass}}{m_1} \times 100$	Total Percentage Passing	Percentage Specified
				100.0	
75.00 mm	0	0	0.0	100.0	
63.00 mm	0	0	0.0	100.0	
50.00 mm	0	0	0.0	100.0	
37.50 mm	0	0	0.0	100.0	
28.00 mm	0	0	0.0	100.0	
20.00 mm	0	0	0.0	100.0	
Passing 20mm (m_2)	0				
Riffled sample					
Passing 20mm (m_3)	0				
Riffling correction, C_1 $C_1 = \frac{m_2}{m_3} = 1$		Corrected values Mass × C_1 ret.			
14.00 mm	11	11	2.9	97.1	
10.00 mm	10	10	2.6	94.4	
6.30 mm	8	8	2.2	92.2	
Passing 6.3mm (m_4)	100				
Riffled sample					
Passing 6.3mm (m_5)	100				
Riffling correction, C_2 $C_2 = \frac{m_2}{m_3} \times \frac{m_4}{m_5} = 1.0$		Corrected values Mass × C_2 ret.			
5.00 mm	4	4	1.0	91.3	
3.35 mm	8	8	2.0	89.3	
2.00 mm	11	11	2.8	86.4	
1.18 mm	9	9	2.4	84.1	
600 µm	15	15	3.9	80.2	
425 µm	17	17	4.5	75.7	
300 µm	40	40	10.7	65.0	
212 µm	41	41	11.0	54.0	
150 µm	30	30	8.0	46.0	
63 µm	42	42	11.3	34.7	
Passing		130	34.7		

May Gurney

May Gurney Geotechnical

PARTICLE SIZE DISTRIBUTION : TEST METHOD BS 1377 : Part 2 : 1990 : 9.2 / 9.3 / 9.4

Contract	Boston		Sample BH2 B1
Date	16/07/04	Contract No. SI 0764	Depth 4.5m



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

TESTED BY : AS / WB

May Gurney

May Gurney Geotechnical

LABORATORY TEST RESULTS : PARTICLE SIZE DISTRIBUTION

Contract	Boston		Sample 4063	Contract No.	SI 0764
Mass of dry sample (g)	363	Sample	BH10 B1	Depth	4.5m

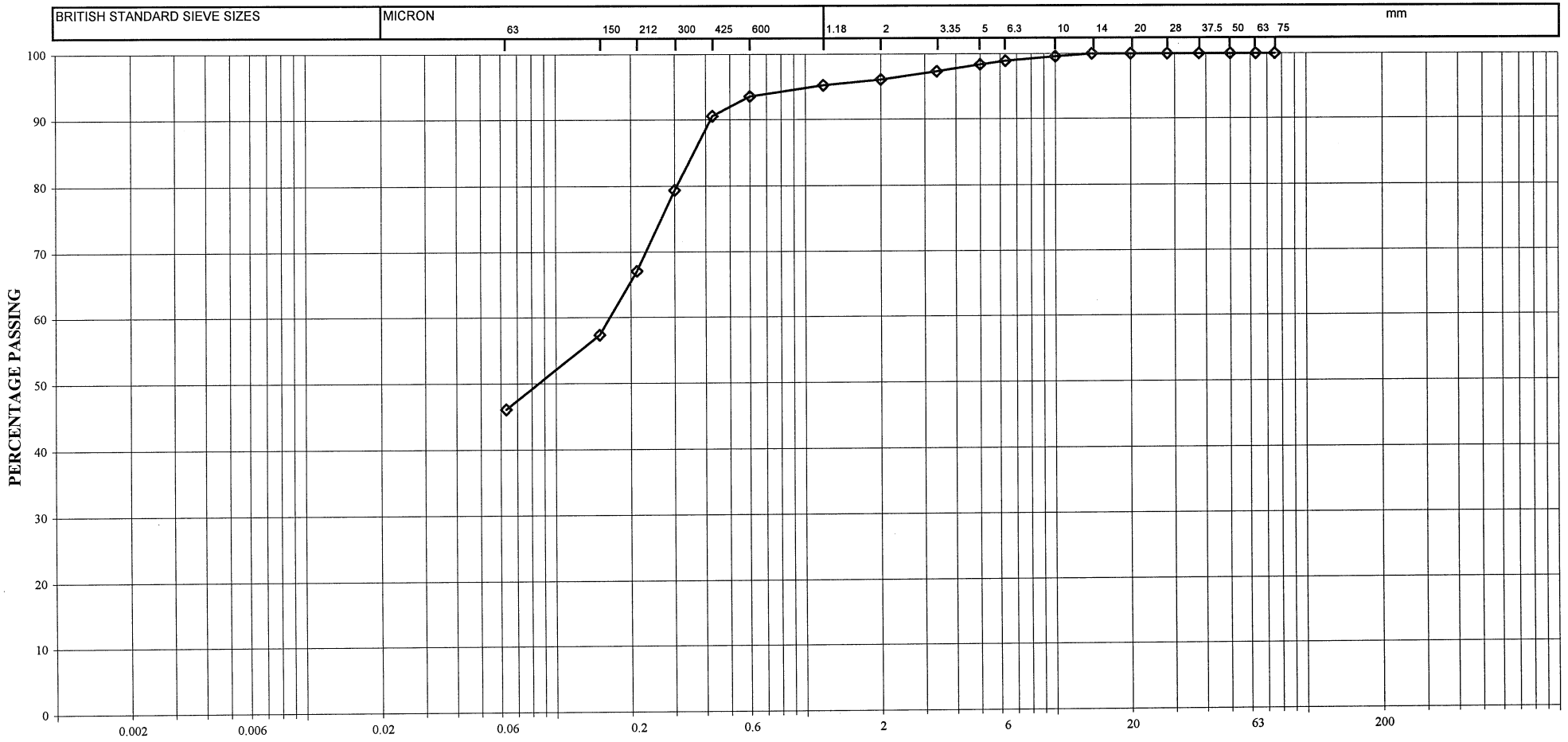
B.S. Test Sieve	Mass Retained g	Mass Retained g	Percentage Retained $\frac{\text{Mass}}{m_1} \times 100$	Total Percentage Passing	Percentage Specified
				100.0	
75.00 mm	0	0	0.0	100.0	
63.00 mm	0	0	0.0	100.0	
50.00 mm	0	0	0.0	100.0	
37.50 mm	0	0	0.0	100.0	
28.00 mm	0	0	0.0	100.0	
20.00 mm	0	0	0.0	100.0	
Passing 20mm (m_2)	0				
Riffled sample					
Passing 20mm (m_3)	0				
Riffling correction, C_1 $C_1 = \frac{m_2}{m_3} = 1$		Corrected values Mass × C_1 ret.			
14.00 mm	0	0	0.0	100.0	
10.00 mm	2	2	0.4	99.6	
6.30 mm	2	2	0.7	98.9	
Passing 6.3mm (m_4)	100				
Riffled sample					
Passing 6.3mm (m_5)	100				
Riffling correction, C_2 $C_2 = \frac{m_2}{m_3} \times \frac{m_4}{m_5} = 1.0$		Corrected values Mass × C_2 ret.			
5.00 mm	2	2	0.5	98.4	
3.35 mm	4	4	1.1	97.3	
2.00 mm	4	4	1.2	96.1	
1.18 mm	3	3	0.9	95.2	
600 µm	6	6	1.7	93.5	
425 µm	11	11	3.0	90.6	
300 µm	41	41	11.2	79.4	
212 µm	45	45	12.3	67.1	
150 µm	36	36	9.8	57.3	
63 µm	41	41	11.2	46.1	
Passing		167	46.1		

May Gurney

May Gurney Geotechnical

PARTICLE SIZE DISTRIBUTION : TEST METHOD BS 1377 : Part 2 : 1990 : 9.2 / 9.3 / 9.4

Contract	Boston		Sample BH10 B1
Date	16/07/04	Contract No. SI 0764	Depth 4.5m



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

TESTED BY : AS / WB

May Gurney Technical Services Limited
Trowse
Norwich
NR14 8SZ

FAO Wayne Bunn

LABORATORY TEST REPORT

Results of analysis of samples received
20/07/04 test report number **13089**
Your Project Reference **SI0764 - Boston**

Report date
29 July 2004

LIMS ID			AA36931	AA36932	AA36933	AA36934	AA36935	AA36936	AA36937	AA36938	AA36939
Sample ID			**BH5**	**BH3**	**BH9**	**BH1**	**BH10**	**BH7**	**BH5**	**BH10**	**BH5**
Sample no			**D5**	**D2**	**D4**	**D4**	**D10**	**D3**	**U1**	**D3**	**D4**
Depth			**4-4.5m**	**1.45-1.6**	**3.5m**	**3.5m**	**9.0m**	**2-2.45m**	**1.0m**	**2-2.5m**	**3.5m**
Sample matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Determinand	**SOP No.**	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Arsenic	2450	mg kg^{-1}	23	11	13	19	13	14	---	---	---
Cadmium	2450	mg kg^{-1}	<0.1	<0.1	<0.1	0.1	0.1	<0.1	---	---	---
Chromium	2450	mg kg^{-1}	13	29	16	19	12	24	---	---	---
Copper	2450	mg kg^{-1}	8.5	14	9.4	12	13	14	---	---	---
Lead	2450	mg kg^{-1}	8.7	15	8.4	10	9.4	15	---	---	---
Mercury	2450	mg kg^{-1}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	---	---	---
Nickel	2450	mg kg^{-1}	16	29	19	22	25	29	---	---	---
Selenium	2450	mg kg^{-1}	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	---	---	---
Zinc	2450	mg kg^{-1}	23	55	20	30	30	61	---	---	---
									---	---	---
Sulfate (total)	2430	%	0.50	0.05	0.19	0.30	1.6	0.30	---	---	---
Boron (hot water soluble)	2120	mg kg^{-1}	3.1	2.5	3.4	3.0	2.0	3.5	---	---	---
Cyanide (total)*	2300	mg kg^{-1}	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	---	---	---
Loss on ignition*	2610	%	---	---	---	---	---	---	1.48	1.08	0.73
PAH (total)	2700	mg kg^{-1}	<10	<10	<10	<10	<10	<10	---	---	---
pH	2010	-	8.2	8.4	8.4	8.4	8.1	7.8	---	---	---
Phenols (total)*	2920	mg kg^{-1}	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	---	---	---
Sulfur (elemental)*	2170	mg kg^{-1}	< 50	< 50	< 50	< 50	< 50	< 50	---	---	---
Sulfide*	2320	mg kg^{-1}	65.0	< 0.5	1.4	6.9	< 0.5	< 0.5	---	---	---
Thiocyanate*	2330	mg kg^{-1}	<1	<1	1.0	3.0	<1	19	---	---	---
Sulfate (2:1 extract)*	2210	g l^{-1}	---	---	---	---	---	0.47	---	---	---

UKAS TESTING
0013

YOUR PARTNER IN MATERIALS AND TECHNOLOGY **CERAM**

Queens Road Penkhull
Stoke-on-Trent ST4 7LQ
Tel: +44 (0) 1782 764444
Fax: +44 (0) 1782 412331
E-mail: enquiries@ceram.com
http://www.ceram.com

TEST REPORT

WARDELL ARMSTRONG LLP
LANCASTER BUILDINGS
NEWCASTLE-UNDER-LYME
STAFFORDSHIRE
ST5 1PQ
FAO : P SHELTON

REPORT OF TESTS ON GROUNDWATER PROJECT NL06842

Your Reference AS REPORTED
Ceram Sample(s) 604015156-604015159

Date Reported 28-Jul-04 Order/Job No NONE
Date Received 14-Jul-04 Date(s) of Test(s) 21&23-Jul-04

DETERMINATION OF ELECTRICAL CONDUCTIVITY AND CHEMICAL OXYGEN DEMAND

Electrical conductivity was carried out in accordance with the Measurement of Electrical Conductivity and the Laboratory Determination of Natural, Treated and Waste Waters 1978 HMSO.

Chemical oxygen demand was carried out in accordance with In House Method C77.

CERAM Sample No.	Customer Reference	Electrical Conductivity ($\mu S.cm^{-1}$)	Chemical Oxygen Demand (mg/l)
604015156	BH10	3780	<10
604015157	BH7	9370	<10
604015158	BH9	8490	77
604015159	BH5	4790	<10

End of Test Report

S Hall
Authorised Signatory

UKAS TESTING
0013

YOUR PARTNER IN MATERIALS AND TECHNOLOGY **CERAM**

Queens Road Penkhull
Stoke-on-Trent ST4 7LQ
Tel: +44 (0) 1782 764444
Fax: +44 (0) 1782 412331
E-mail: enquiries@ceram.com
http://www.ceram.com

TEST REPORT

WARDELL ARMSTRONG LLP
LANCASTER BUILDINGS
NEWCASTLE-UNDER-LYME
STAFFORDSHIRE
ST5 1PQ
FAO : P SHELTON

REPORT OF TESTS ON GROUNDWATER PROJECT NL06842

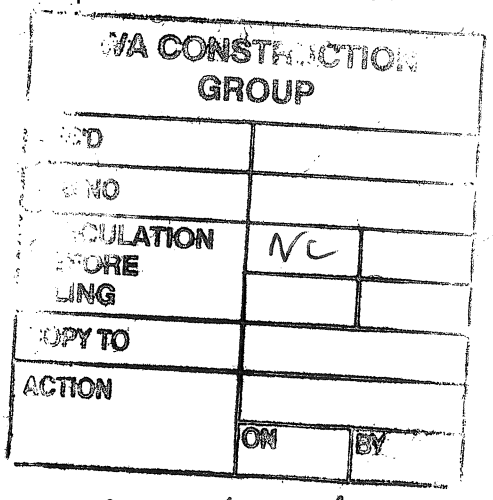
Your Reference	AS REPORTED		
Ceram Sample(s)	604015156-604015159		
Date Reported	05-Aug-04	Order/Job No	HS0351
Date Received	14-Jul-04	Date(s) of Test(s)	15/29-Jul-04

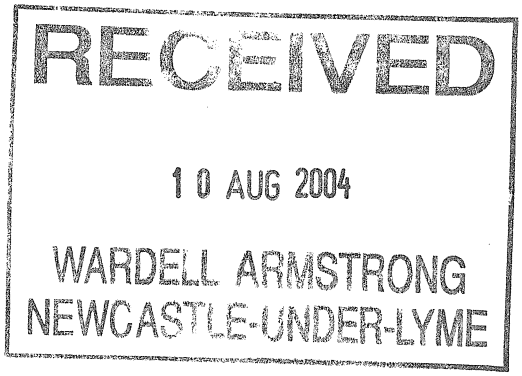
ANALYSIS

Please find attached the results for the samples recently submitted for analysis.

Tests marked with an asterisk are not UKAS Accredited. Tests marked not UKAS Accredited are not included in the UKAS Accreditation schedule for our laboratory.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation





D Wheawell
Authorised Signatory

		Sample Number	604015156	604015157	604015158	604015159
		Sample Reference	BH10	BH7	BH9	BH5
		Water Project NL06842				
Method (Ref)	**Units**	**Determinands**				
ICP (C24)	ppm	Arsenic (As)	<0.05	<0.05	<0.05	<0.05
ICP (C24)	ppm	Cadmium (Cd)	<0.01	<0.01	<0.01	<0.01
ICP (C24)	ppm	Copper (Cu)	0.13	0.08	0.12	0.10
ICP (C24)	ppm	Chromium (Cr)	0.06	0.03	0.05	0.07
ICP (C24)	ppm	Lead (Pb)	0.35	0.26	0.39	0.48
AFS (C54)	ppm	Mercury (Hg)	<0.001	<0.001	<0.001	<0.001
AFS (C54)	ppm	Selenium (Se)	<0.001	<0.001	<0.001	<0.001
ICP (C24)	ppm	Zinc (Zn)	0.4	0.36	0.57	0.27
ICP (C24)	ppm	Boron (B)	1.0	2.0	1.7	1.8
ICP (C24)	ppm	Nickel (Ni)	0.15	0.07	0.07	0.12
ICP (C24)	ppm	Total Sulphate	485	1035	520	1345
Gravi (C64)	ppm	Solvent Extractable Matter	1.2	1.4	1.4	2.1
Dist-FIA (C55)	ppm	Total Phenols (phenol index)	<0.05	<0.05	<0.05	<0.05
Dist-FIA (C55)	ppm	Total Cyanide	<0.1	<0.1	<0.1	<0.1
Dist-FIA (C55)	ppm	Sulphide	<0.1	<0.1	<0.1	<0.1
Meter (C27)		pH	6.7	6.7	6.7	6.8
ATU	ppm	BOD in unfiltered water*	2	7	2	1
	ppm	Ammonia*	0.3	0.8	1.3	0.3
GC (C73)	ppm	Total Petroleum Hydrocarbons	<0.5	<0.5	<0.5	0.7
		(C10-C40)				
GC-MS (C209)	ppm	VOCs	<0.05	<0.05	<0.05	<0.05

End of Test Report

D Wheawell
Authorised Signatory