

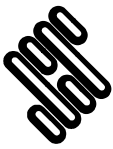
Contract: Grovefield Way, Cheltenham		Client: H N Bailey, J A Bailey and C H Harvey		Trialpit: SA2
Contract Ref: 722048	Date: 04.08.08	Ground Level (m): 34.64	National Grid Co-ordinate: E:390642.3 N:221388.9	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.25	1	D				Grass/weeds over MADE GROUND: Dark brown slightly sandy slightly gravelly friable CLAY. Gravel is fine to medium subangular to subrounded chert, brick, charcoal and ceramic with frequent rootlets.	(0.32)	
0.25	2	ES					0.32	
0.75	3	D	c _u =106/112/120			Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subangular brick, charcoal and limestone and occasional rootlets.	(0.65)	
0.75	4	ES						
0.75	V							
1.20	5	D	c _u =138/130			Firm to stiff light brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine subrounded limestone and occasional rootlets. (Superficial Deposits)	1.20	
1.20	V							
1.75	6	D				Stiff grey mottled brown slightly sandy closely fissured CLAY. (Superficial Deposits)	(0.50)	
1.75	V							
2.20	7	D				Stiff grey brown slightly sandy gravelly CLAY with orange staining. Gravel is fine angular to subangular mudstone/limestone. (Superficial Deposits)	(0.30)	
2.20	V							
2.58	8	B				Very stiff grey laminated slightly sandy CLAY with occasional decomposing (purple) rootlets and pockets of orange slightly silty slightly sandy fine mudstone gravel. (Superficial Deposits)	(0.50)	
2.58						Very stiff dark blue grey laminated slightly sandy CLAY. With occasional decomposing rootlets and rare shell fragments. (Charmouth Mudstone Formation) Pit terminated at 2.58m depth.	2.50 2.58	

STRUCTURAL_SOILS_GINT_LIBRARY_GLBTRIAL_PIT_LOG - STANDARD | 722048 - GROVEFIELD WAY, CHELTENHAM, G.P.J. - v8_02 | 14/07/14 - 12:19
Structural Soils Ltd, Head Office - Bristol: The Old School, Stillhouse Lane, Bedminster, Bristol, BS3 4EB. Fax: 0117-947-1000. Web: www.soils.co.uk. Email: admin@soils.co.uk.

Plan (Not to Scale) 	<h3>General Remarks</h3>	
	<ol style="list-style-type: none"> 1. Trial pit walls stable. 2. No groundwater encountered. 3. Soakaway test completed. 4. Backfilled on completion. 	
All dimensions in metres		Scale: 1:25
Method Used: Machine dug	Plant Used: JCB-3CX	Logged By: MBaker Checked By: SP





Contract: Grovefield Way, Cheltenham		Client: H N Bailey, J A Bailey and C H Harvey		Trialpit: SA3	
Contract Ref: 722048		Date: 04.08.08	Ground Level (m): 31.42	National Grid Co-ordinate: E:390442.3 N:221436.8	Sheet: 1 of 1

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES	c _u =110/120/130			Grass over MADE GROUND: Dark brown slightly sandy slightly gravelly friable CLAY. Gravel is fine to coarse angular to subangular brick, glass and charcoal with frequent rootlets.	0.26	
0.20	2	D		MADE GROUND: Firm brown slightly sandy CLAY with occasional fragments of charcoal and brick.		(0.34)		
0.40	5	D		0.60				
				Firm grey mottled brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subrounded mudstone. (Superficial Deposits)		(0.40)		
0.85	3	ES		1.00				
0.85	4	D						
0.85	V							
				Stiff dark grey mottled brown slightly laminated slightly sandy CLAY. (Charmouth Mudstone Formation)				
1.50	6	B						
1.80	7	D		... thinly laminated with fine 1-2mm gypsum crystals from 1.80m depth and occasional decomposing purple rootlets and becoming very stiff.		(1.60)		
2.15	8	D	... at 2.15m depth abundant gypsum crystals.					
2.40	9	D						
2.60	10	B		2.60				
					Pit terminated at 2.60m depth.			

STRUCTURAL_SOILS_GINT_LIBRARY_GLBTRIAL_PIT_LOG - STANDARD | 722048 - GROVEFIELD WAY, CHELTENHAM, G.P.J. - v8_02 | 14/07/14 - 12:19
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Plan (Not to Scale)		General Remarks						
		<ol style="list-style-type: none"> 1. Trial pit walls stable. 2. No groundwater encountered. 3. Soakaway test completed. 4. Backfilled on completion. 						
		All dimensions in metres		Scale: 1:25				
Method Used:	Machine dug	Plant Used:	JCB-3CX	Logged By:	MBaker	Checked By:	SP	

APPENDIX C

- (i) Californian Bearing Ratio Test Results
- (ii) Soakaway Test Results
- (iii) Laboratory Test Results

IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

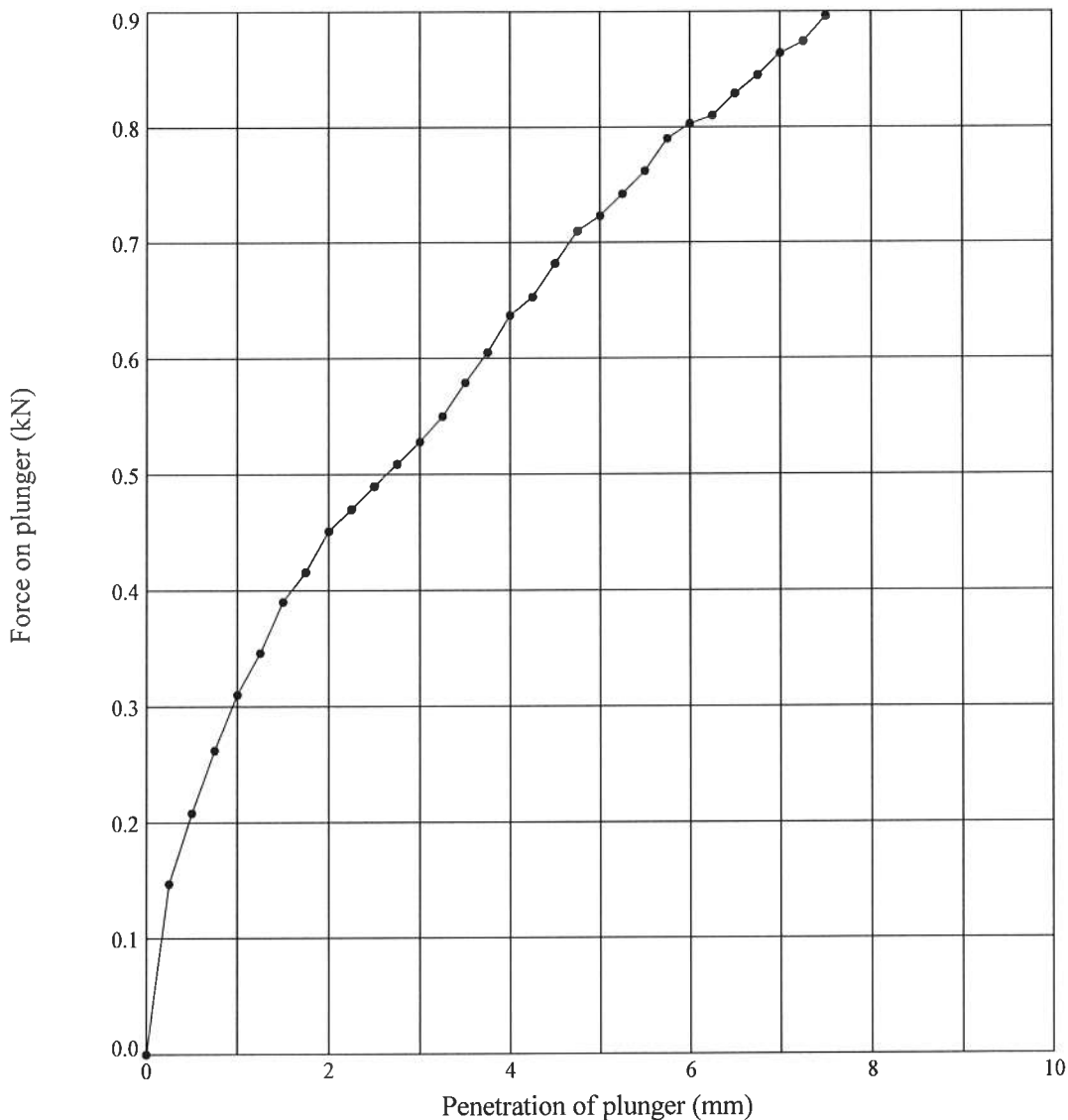
Position Ref : **CBR1**

Depth (m) : **0.50**

Date : **01/08/08**

Ground Level (m): **39.3**

National Grid Co-ordinates: **E:390792.4 N:221451.9**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 25	CBR Value (%) : 3.7
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Brown slightly gravelly slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

 STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A.S. Le</i>	01/09/08	<i>D. Trowbridge</i>	1/9/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	



IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

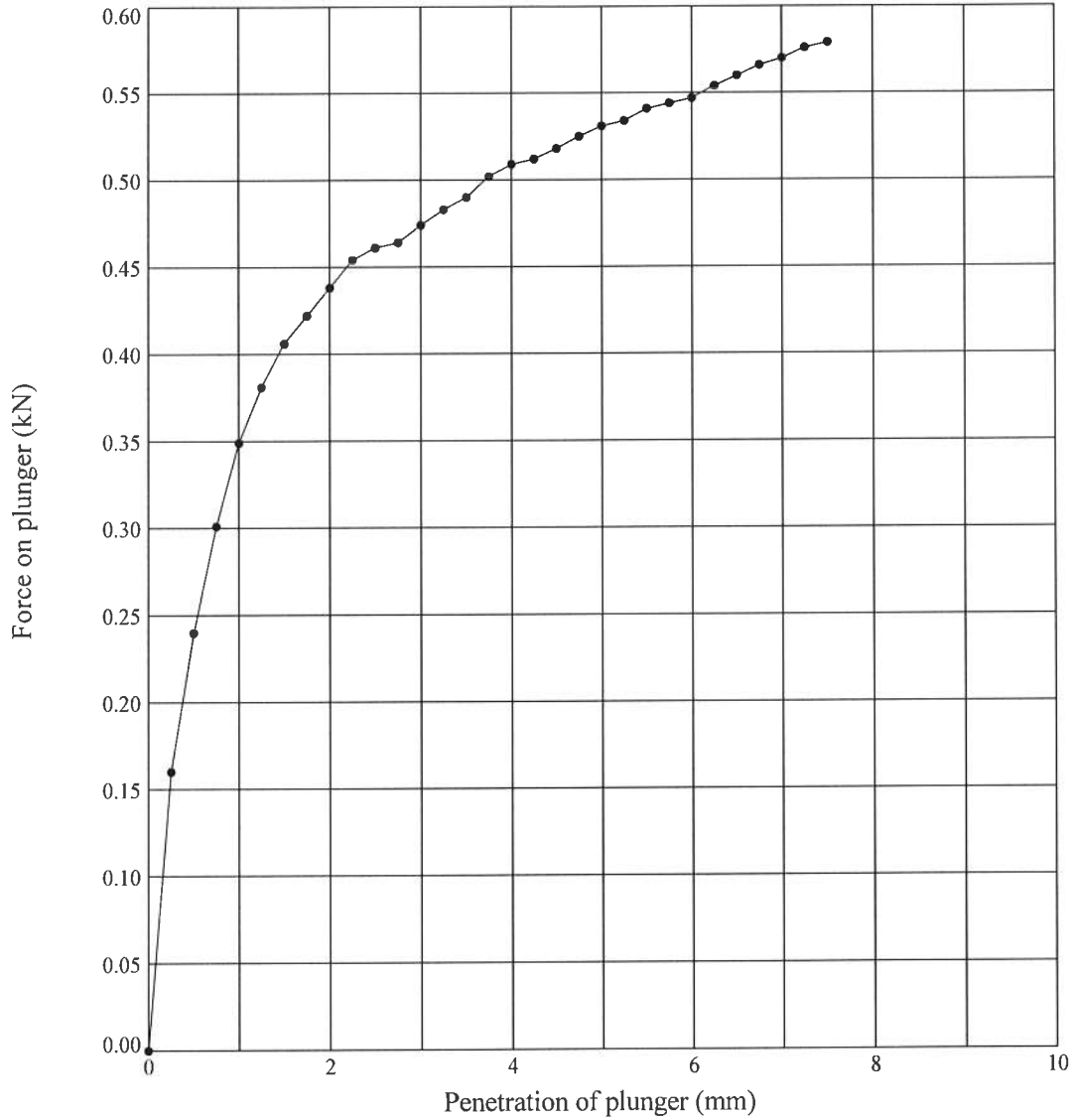
Position Ref : **CBR2**

Depth (m) : **0.50**

Date : **01/08/08**

Ground Level (m): **39.5**

National Grid Co-ordinates: **E:390789.4 N:221441.7**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 29	CBR Value (%) : 3.5
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Greenish brown slightly gravelly slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

 STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A. D. Te</i>	01/09/08	<i>W. Alder</i>	1/9/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	



IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

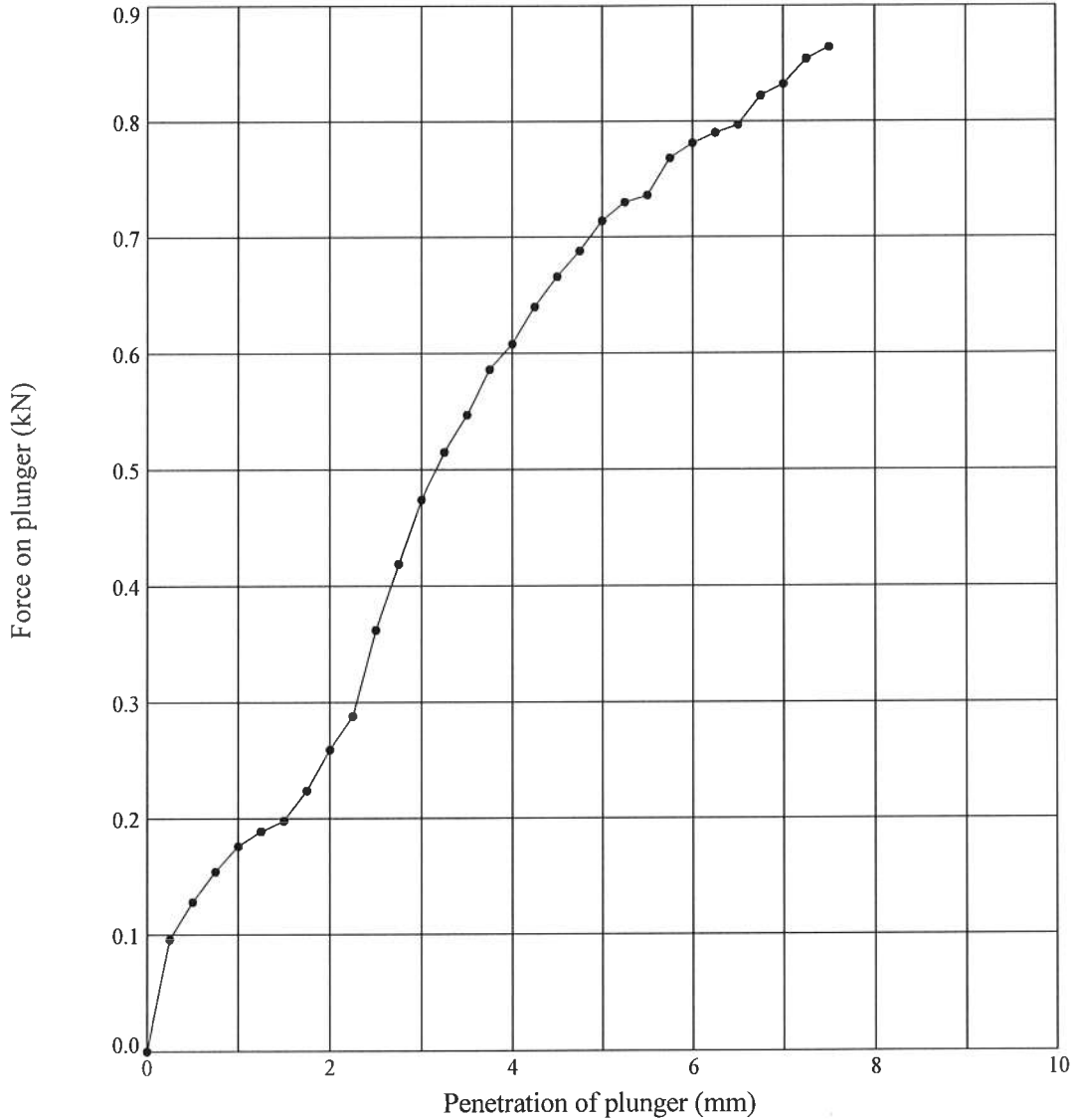
Position Ref : **CBR3**

Depth (m) : **0.50**

Date : **01/08/08**

Ground Level (m): **38.1**

National Grid Co-ordinates: **E:390758.9 N:221464.1**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 24	CBR Value (%) : 3.6
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Greenish brown mottled orange slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

 STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A.S.L.</i>	01/09/08	<i>D. Ward</i>	1/9/08
	Contract: Grövefield Way, Cheltenham		Job No: 722048	



IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

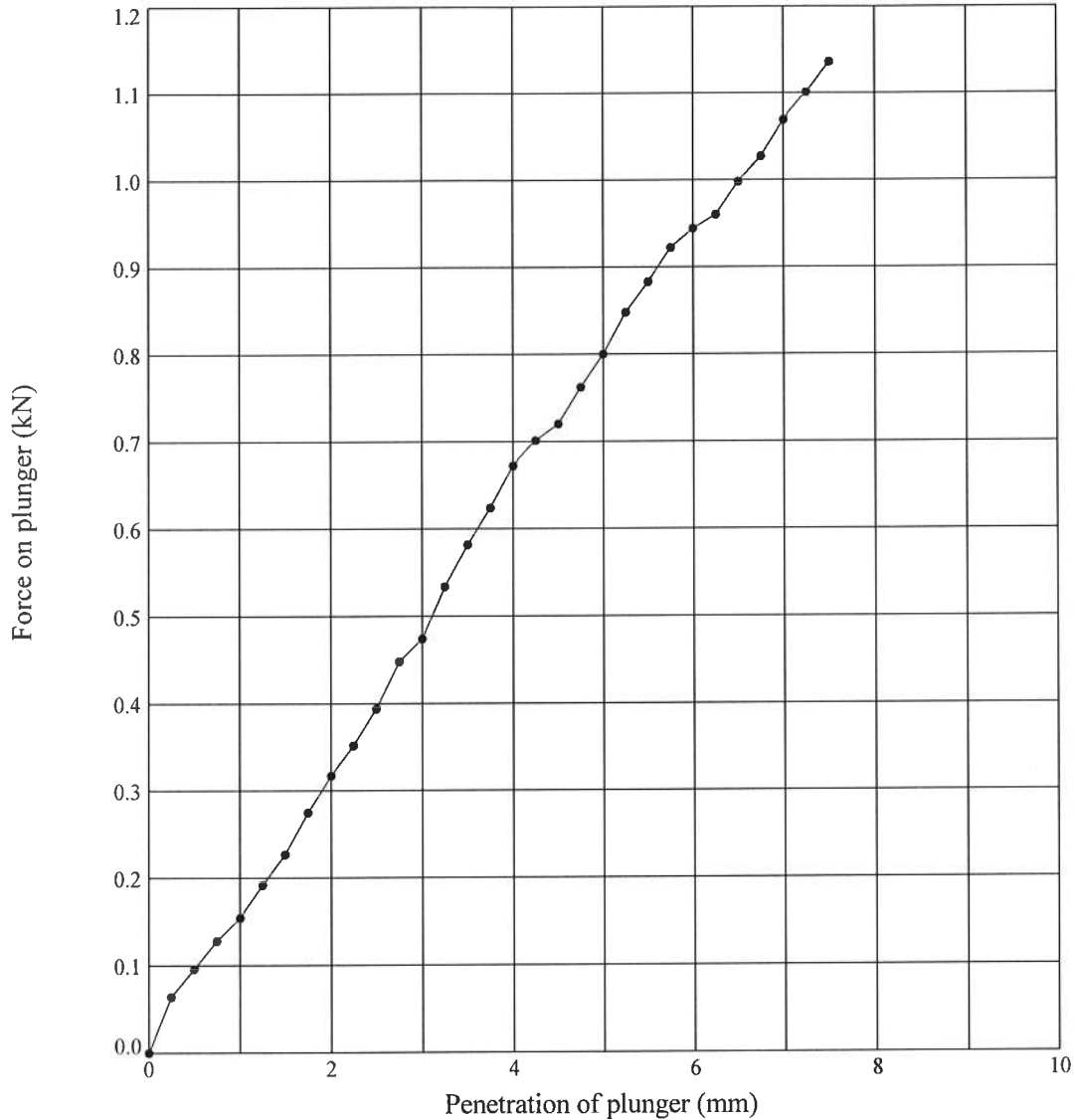
Position Ref : **CBR4**

Depth (m) : **0.50**

Date : **01/08/08**


Ground Level (m): **36.9**

National Grid Co-ordinates: **E:390711.5 N:221461.7**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 21	CBR Value (%) : 4.0
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Greenish brown slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

 STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A.D. Le</i>	01/09/08	<i>D. Trowbridge</i>	01/09/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	

IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

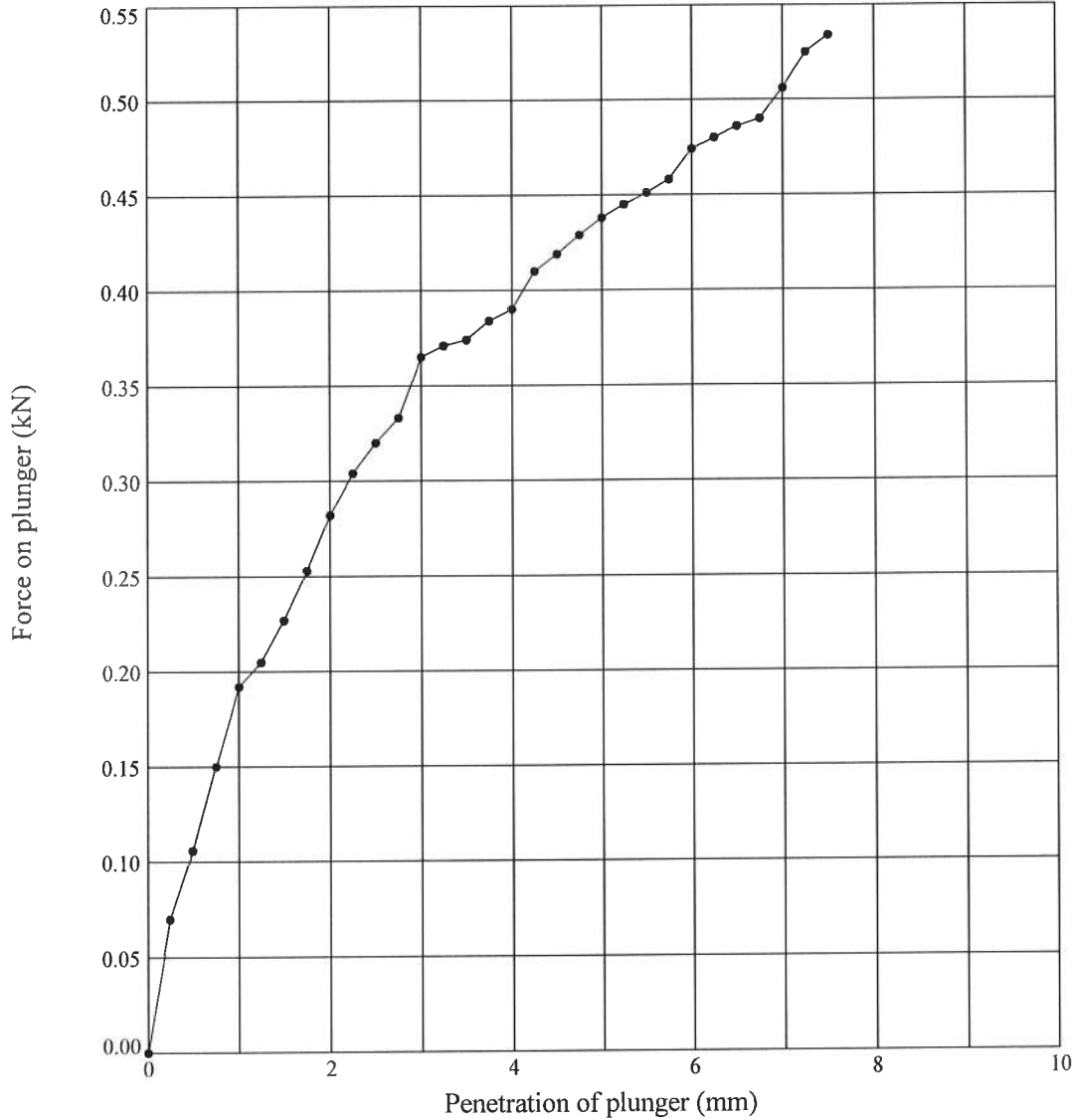
Position Ref : **CBR5**

Depth (m) : **0.60**

Date : **01/08/08**


Ground Level (m): **35.8**

National Grid Co-ordinates: **E:390660.8 N:221445.3**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 32	CBR Value (%) : 2.4
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Greenish brown slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

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	<i>A.D. [Signature]</i>	01/09/08	<i>[Signature]</i>	1/9/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	



STRUCTURAL_SOILS_GINT_LIBRARY_GLIBII - CBR - IN SITU | 722048_GROVEFIELD_WAY_CHELTHENHAM.GPJ - v8_01 | 01/09/08 - 07:25.

IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

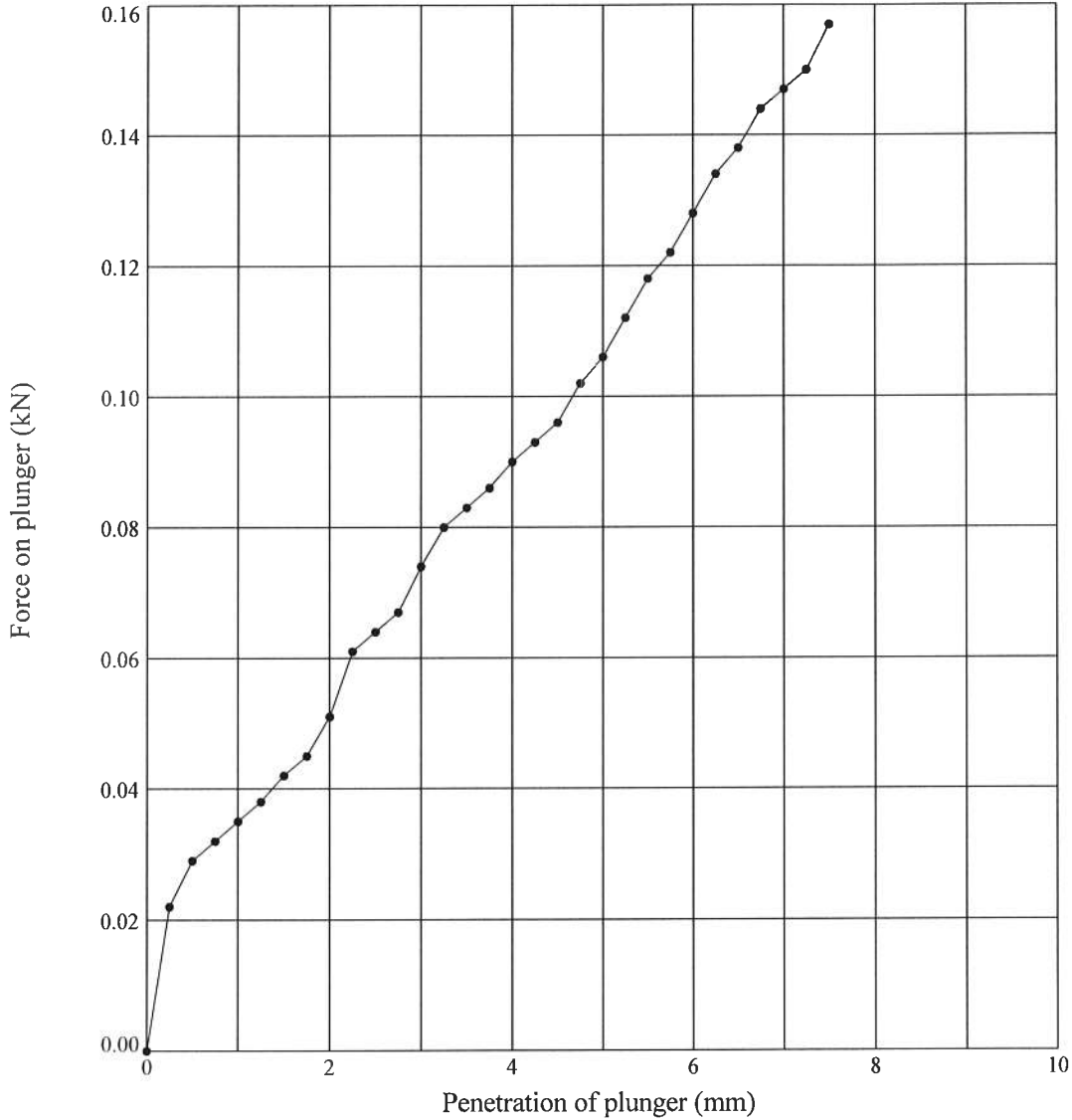
Position Ref : **CBR6**

Depth (m) : **0.70**

Date : **01/08/08**


Ground Level (m) : **35.0**

National Grid Co-ordinates : **E:390601.5 N:221433.1**



Test Details		Initial Ground Conditions		Test Results
Kentledge	: Landrover	Initial Moisture Content (%)	: 26	CBR Value (%) : 0.53
Surcharge (kg)	: 4.54	Percentage greater than 20 mm	: 0	
Sample Description			Remarks	
Brown slightly gravelly slightly sandy CLAY			Test operator: JPlooy Test recorded by: JPlooy	

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

 STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A.S.</i>	01/09/08	<i>JPlooy</i>	1/9/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	



IN SITU CALIFORNIA BEARING RATIO TEST

In accordance with BS1377:Part 9:1990

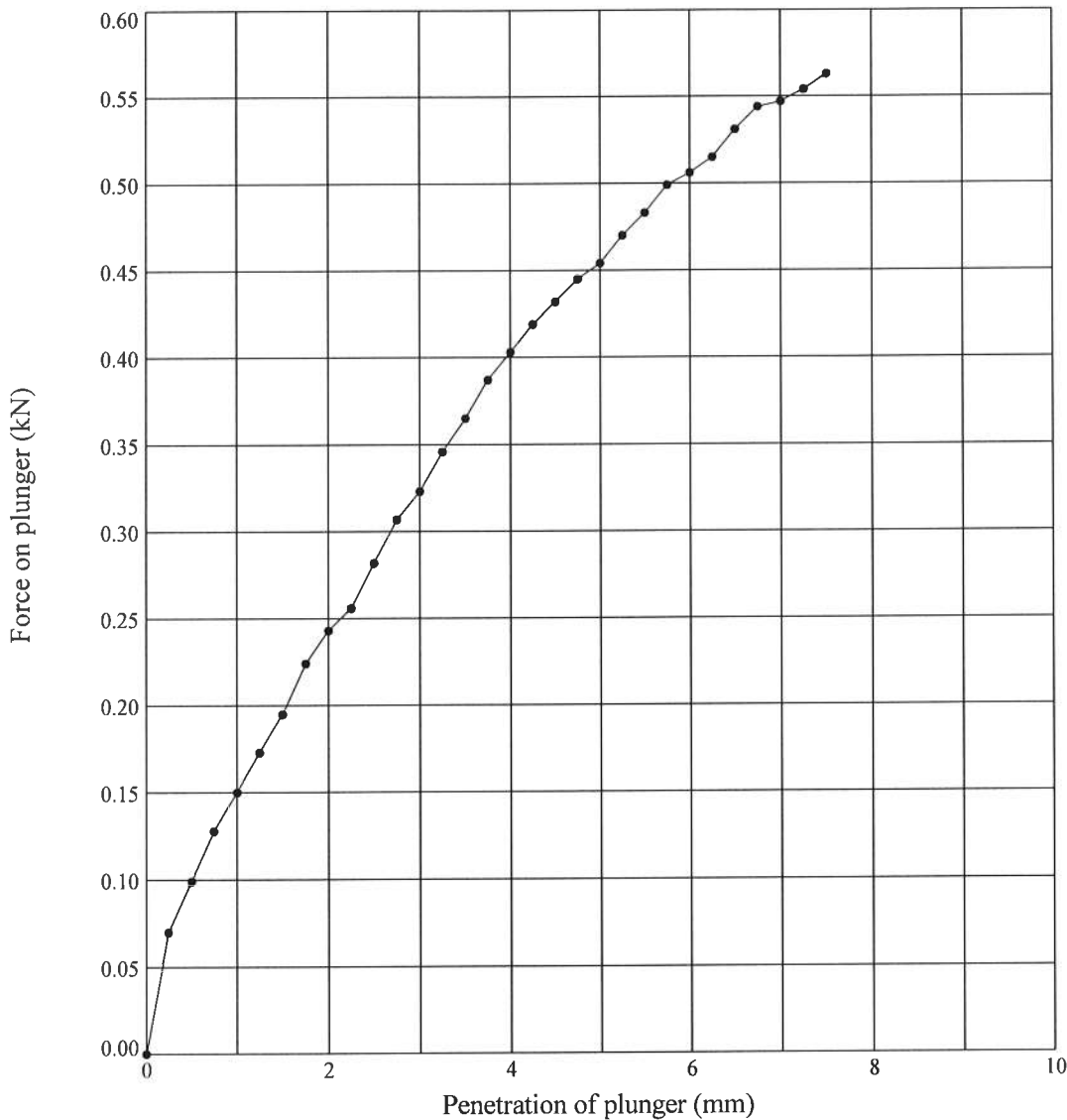
Position Ref : **CBR7**

Depth (m) : **0.50**

Date : **01/08/08**

Ground Level (m): **34.4**

National Grid Co-ordinates: **E:390556.6 N:221436.1**



Test Details	Initial Ground Conditions	Test Results
Kentledge : Landrover	Initial Moisture Content (%) : 33	CBR Value (%) : 2.3
Surcharge (kg) : 4.54	Percentage greater than 20 mm : 0	
Sample Description		Remarks
Greenish brown slightly sandy CLAY		Test operator: JPlooy Test recorded by: JPlooy

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB	Compiled By	Date	Checked By	Date
	<i>A.S. Le</i>	01/09/08	<i>D. Wald</i>	1/9/08
	Contract: Grovefield Way, Cheltenham		Job No: 722048	

FULL SCALE SOAKAWAY TEST

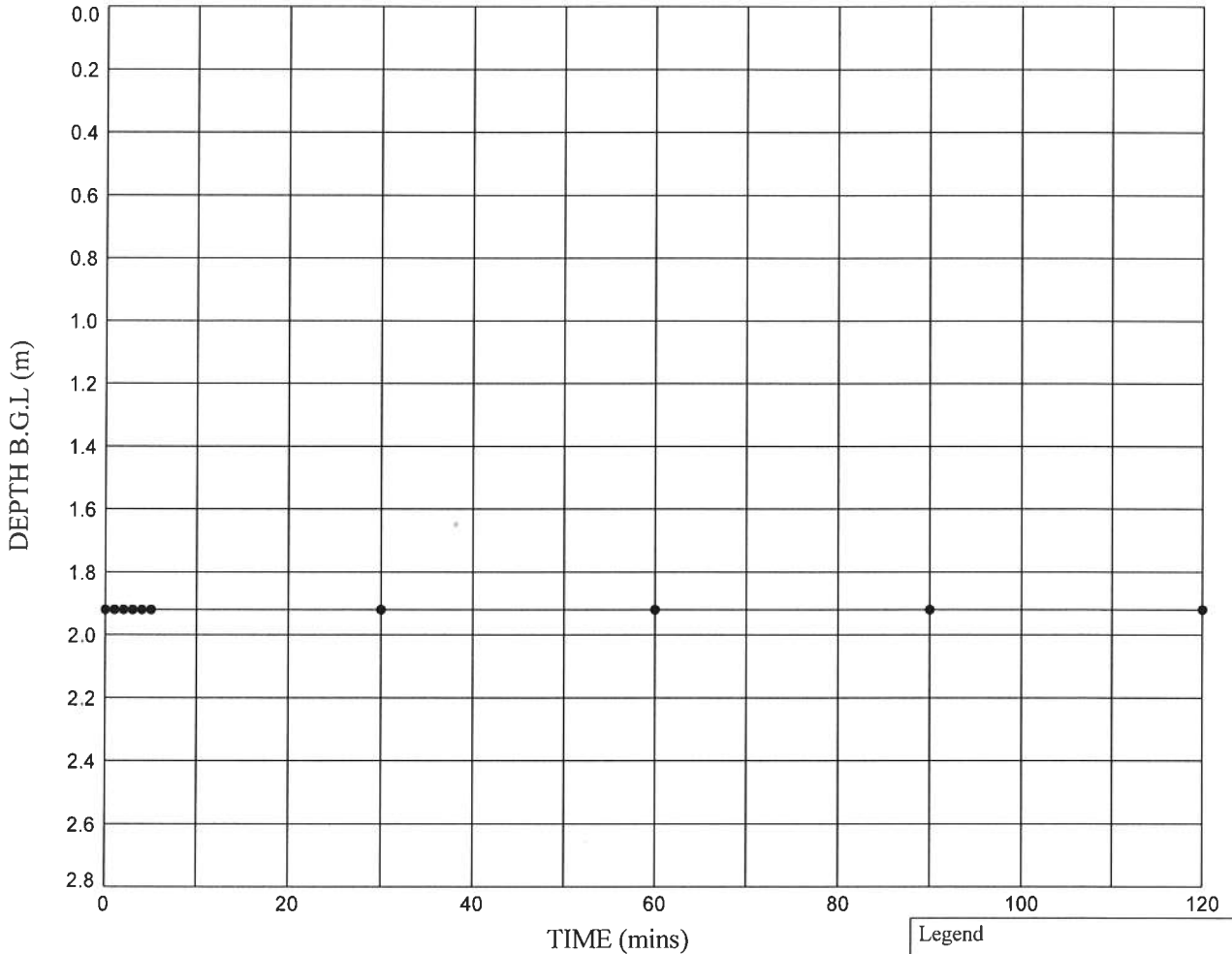
In accordance with BRE 365

Soakaway Test - Position ID : SA1

Ground Level (m): 34.4

National Grid Co-ordinates: E:390637.4 N:221522.7

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Effective depth, D_e = 0.75 m

Effective storage volume, V_{p75-25} = 0.6094 m³

Surface area, a_{p50} = 3.9875 m²

Time, t_{p75-25} = NA secs

Infiltration rate, f = NA m/s

Notes : No drop in water level. Unable to calculate infiltration rate.

Legend

● Test 1 (04.08.08)

Plan (Not to scale)

No Bearing Taken

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN



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Bristol BS3 4EB

Compiled By	Date	Checked By	Date
<i>A.D. [Signature]</i>	01/09/08	<i>[Signature]</i>	1/9/08
Contract: Grovefield Way, Cheltenham		Job No: 722048	

FULL SCALE SOAKAWAY TEST

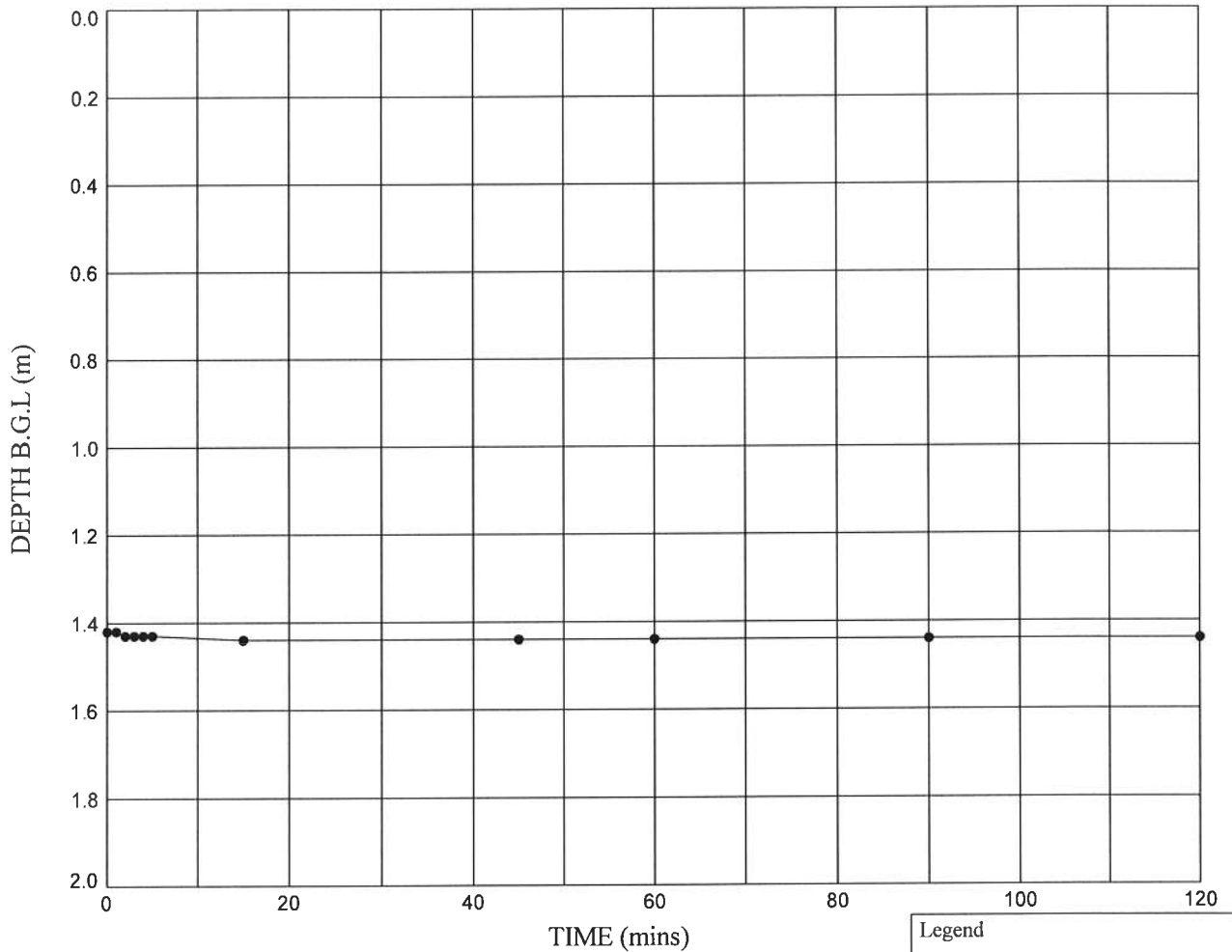
In accordance with BRE 365

Soakaway Test - Position ID : SA2

Ground Level (m): 35.6

National Grid Co-ordinates: E:390642.6 N:221388.9

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Effective depth, D_e = 0.54 m

Effective storage volume, V_{p75-25} = 0.2916 m³

Surface area, a_{p50} = 2.3760 m²

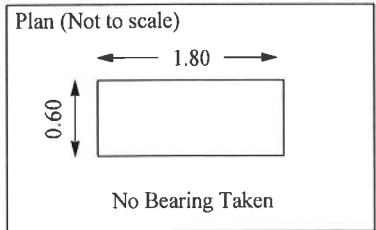
Time, t_{p75-25} = NA secs

Infiltration rate, f = NA m/s


Notes : Insufficient drop in water level to calculate infiltration rate

Legend

- Test 1 (04.08.08)



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 <p>STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB</p>	Compiled By	Date	Checked By	Date
	A. D. Le		1/9/08	
	Contract: Grovefield Way, Cheltenham		Job No: 722048	

STRUCTURAL_SOILS_GINT_LIBRARY.GIBII - TP SOAKAWAY BY EXTRAPOLATION | 722048_GROVEFIELD_WAY_CHELTHENHAM.GPJ - v8_01 | 01/09/08 - 07:44

FULL SCALE SOAKAWAY TEST

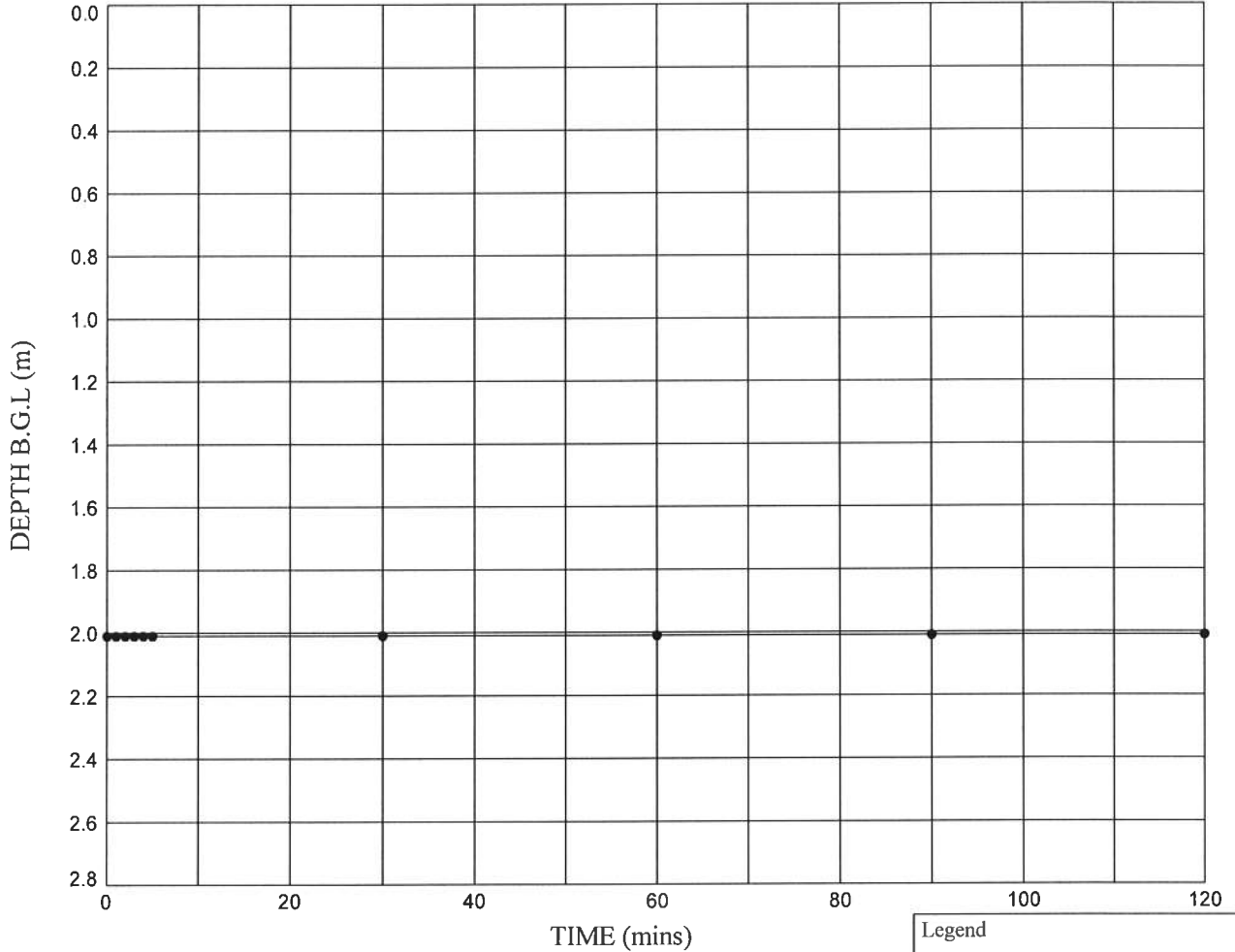
In accordance with BRE 365

Soakaway Test - Position ID : SA3

Ground Level (m): 32.3

National Grid Co-ordinates: E:390442.6 N:221436.8

PLOT OF DEPTH OF WATER BELOW GROUND LEVEL AGAINST TIME



Effective depth, D_e = 0.64 m

Effective storage volume, V_{p75-25} = 0.4160 m³

Surface area, a_{p50} = 2.9960 m²

Time, t_{p75-25} = NA secs

Infiltration rate, f = NA m/s

Notes : No drop in water level. Unable to calculate infiltration rate.

Legend

- Test 1 (04.08.08)

Plan (Not to scale)

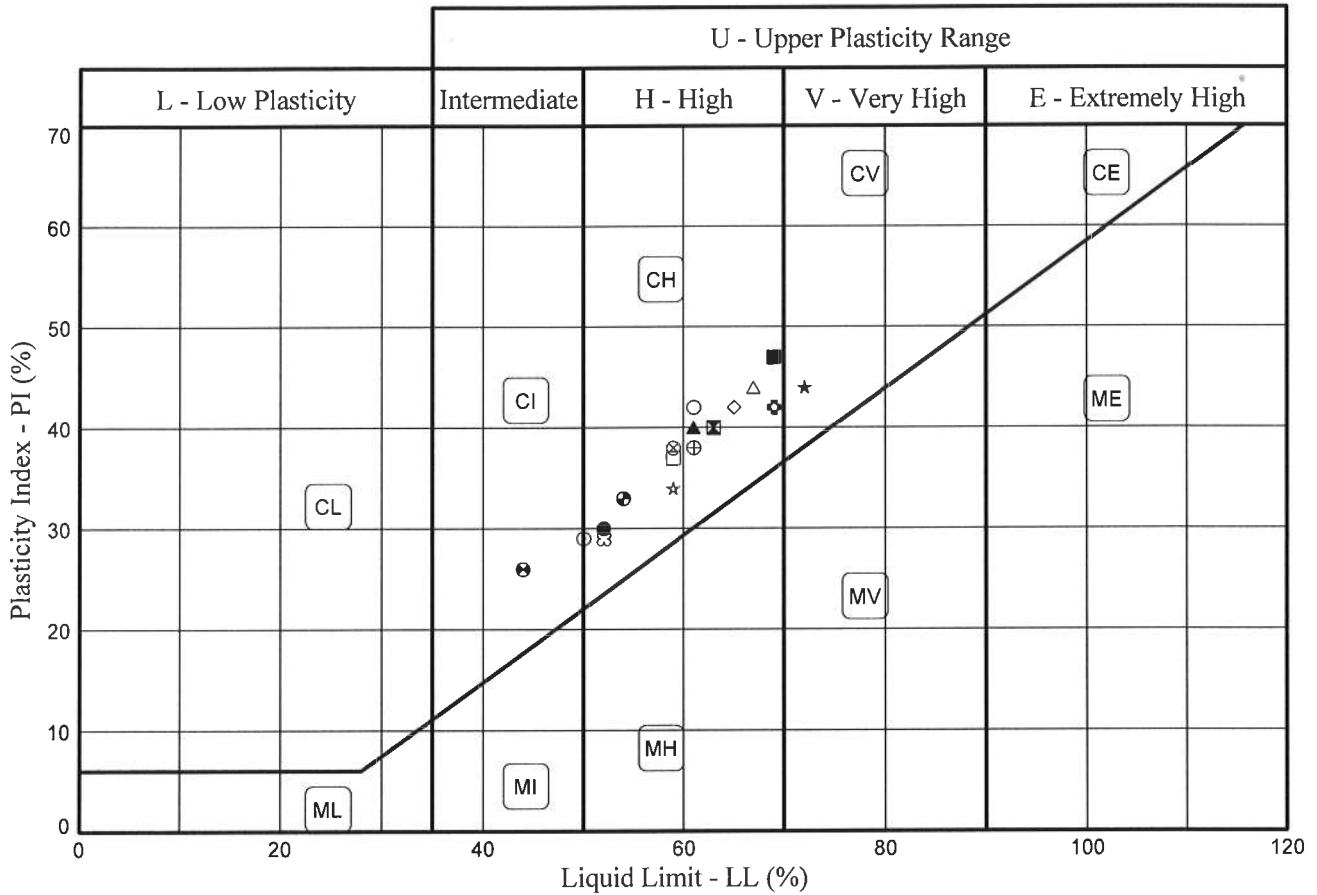
No Bearing Taken

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

<p>STRUCTURAL SOILS The Old School Stillhouse Lane Bedminster Bristol BS3 4EB</p>	Compiled By	Date	Checked By	Date
Contract: Grovefield Way, Cheltenham			Job No: 722048	

PLASTICITY CHART - PI Vs LL

In accordance with clause 42.3 of BS5930:1981
Testing in accordance with clauses 3.2,4.3,4.4,5.3,5.4 of BS1377:Part 2:1990



Sample Identification		MC	LL	PL	PI	<425um	Specimen Description	
HoleID	Sample Depth	%	%	%	%	%		
●	BH1 4D	1.90	26	52	22	30	99	Grey mottled yellowish brown slightly gravelly CLAY.
⊠	BH2 4B	0.80	29	63	23	40	100	Yellowish brown mottled grey CLAY.
▲	BH3 3D	1.10	25	61	21	40	93	Grey mottled brown slightly gravelly CLAY.
★	BH6 2D	0.50	26	72	28	44	90	Grey mottled orangish brown slightly gravelly CLAY.
⊙	BH7 3D	1.80	24	50	21	29	99	Light grey mottled yellowish brown slightly gravelly CLAY.
⊕	SA1 5D	1.10	31	69	27	42	99	Light grey mottled orangish brown slightly gravelly CLAY.
○	SA2 5D	1.20	26	61	19	42	98	Grey mottled orangish brown slightly gravelly CLAY.
△	SA3 4D	0.85	27	67	23	44	98	Grey mottled yellowish brown slightly gravelly CLAY.
⊗	TP2 5D	0.95	25	59	21	38	96	Grey mottled orangish brown slightly gravelly CLAY.
⊕	TP5 5D	1.20	27	61	23	38	98	Grey mottled orangish brown slightly gravelly CLAY.
□	TP6 6D	1.40	24	59	22	37	94	Grey mottled orangish brown and light grey slightly gravelly CLAY.
⊗	TP7 5B	1.20	23	44	18	26	90	Grey mottled yellowish brown slightly gravelly sandy CLAY.
⊕	TP7 6D	1.80	23	54	21	33	98	Grey mottled brown slightly gravelly CLAY.
★	TP7 7D	2.30	24	59	25	34	100	Grey mottled yellowish brown CLAY.
⊗	TP7 9B	3.25	21	52	23	29	98	Grey mottled orangish brown slightly gravelly CLAY.
■	TP8 5D	0.90	24	69	22	47	94	Grey mottled brown slightly gravelly CLAY.
◆	TP9 3D	0.60	20	52	22	30	94	Grey mottled orangish brown slightly gravelly CLAY.
◇	TP10 5D	0.60	32	65	23	42	96	Grey mottled yellowish brown slightly gravelly CLAY.

* Non-standard test Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN



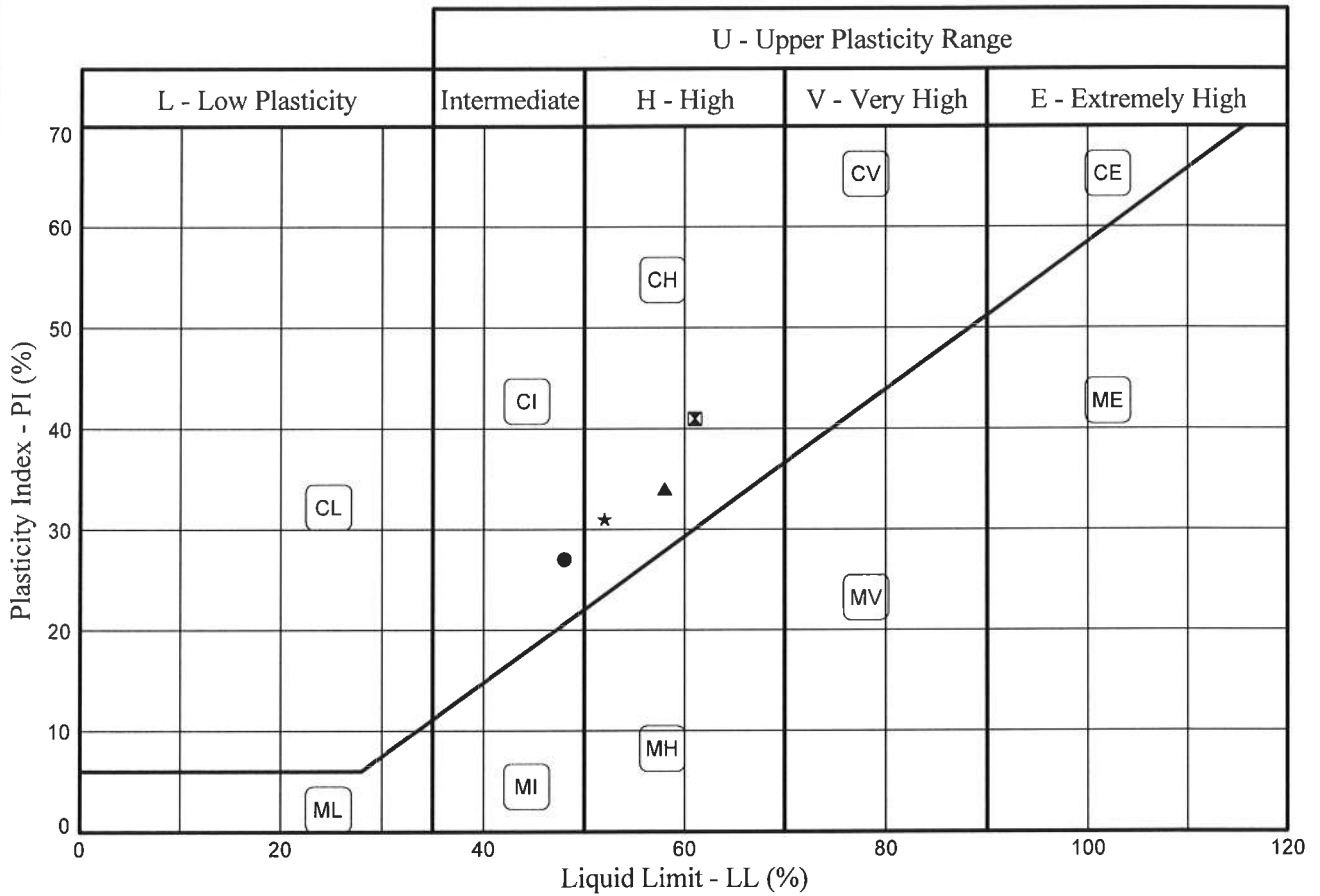
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The Old School
Stillhouse Lane
Bedminster
Bristol BS3 4EB

Compiled By		Date	Checked By	Date
A. D. [Signature]		03/09/08	[Signature]	3/9/08
Contract			Job No	
Grovefield Way, Cheltenham			722048	



PLASTICITY CHART - PI Vs LL

In accordance with clause 42.3 of BS5930:1981
Testing in accordance with clauses 3.2,4.3,4.4,5.3,5.4 of BS1377:Part 2:1990



Sample Identification		MC	LL	PL	PI	<425um	Specimen Description	
HoleID	Sample Depth	%	%	%	%	%		
● TP11	4D	0.75	23	48	21	27	95	Grey mottled yellowish brown and light grey slightly gravelly CLAY.
☒ TP12	5D	1.00	25	61	20	41	96	Grey mottled orangish brown slightly gravelly CLAY.
▲ TP13	6D	1.70	27	58	24	34	100	Grey mottled orangish brown CLAY.
★ TP14	4D	0.70	25	52	21	31	98	Grey mottled yellowish brown slightly gravelly CLAY.

* Non-standard test Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN



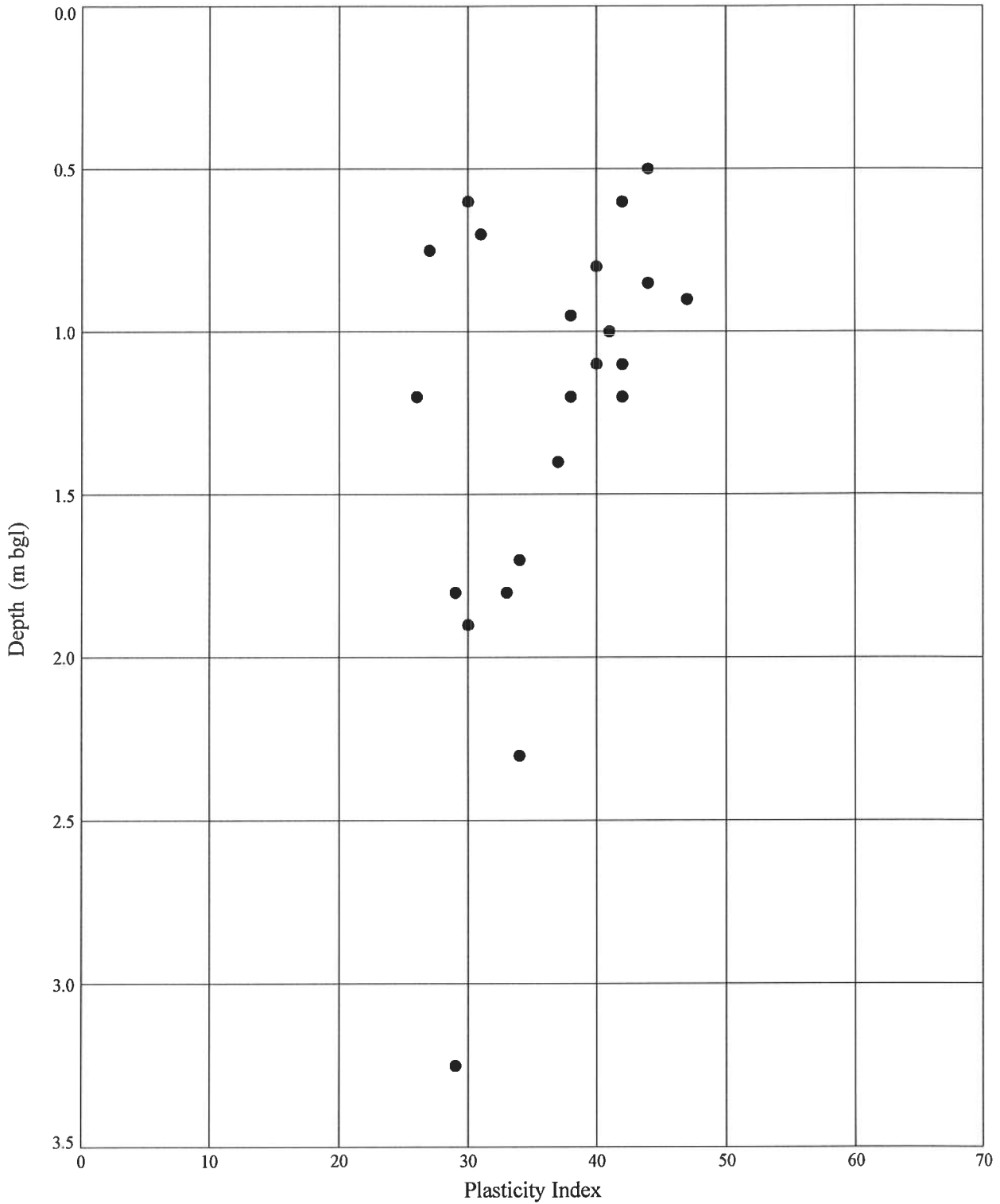
STRUCTURAL SOILS
The Old School
Stillhouse Lane
Bedminster
Bristol BS3 4EB

Compiled By <i>A.D. Le</i>		Date 03/09/08	Checked By <i>David</i>	Date 3/9/08
Contract Grovefield Way, Cheltenham			Job No 722048	



STRUCTURAL_SOILS_GINT_LIBRARY_GLBIL - ALINE STANDARD | 722048_GROVEFIELD_WAY_CHELTHENHAM.GPJ - v8_01 | 03/09/08 - 11:20

PLASTICITY INDEX vs DEPTH



Exploratory Holes : **BH1, BH2, BH3, BH4, BH5, BH6, BH7, BH8, SA1, SA2, SA3, TP1, TP10, TP11, TP12, TP13, TP14, TP2, TP3, TP4, TP5, TP6, TP7, TP8, TP9**

STRUCTURAL_SOILS_GINT_LIBRARY.GLBIG - SOIL - PLASTICITY INDEX V DEPTH - V2 | 722048 GROVEFIELD_WAY_CHELTHENHAM.GPJ - v8_01 | 12/09/08 - 11:17.



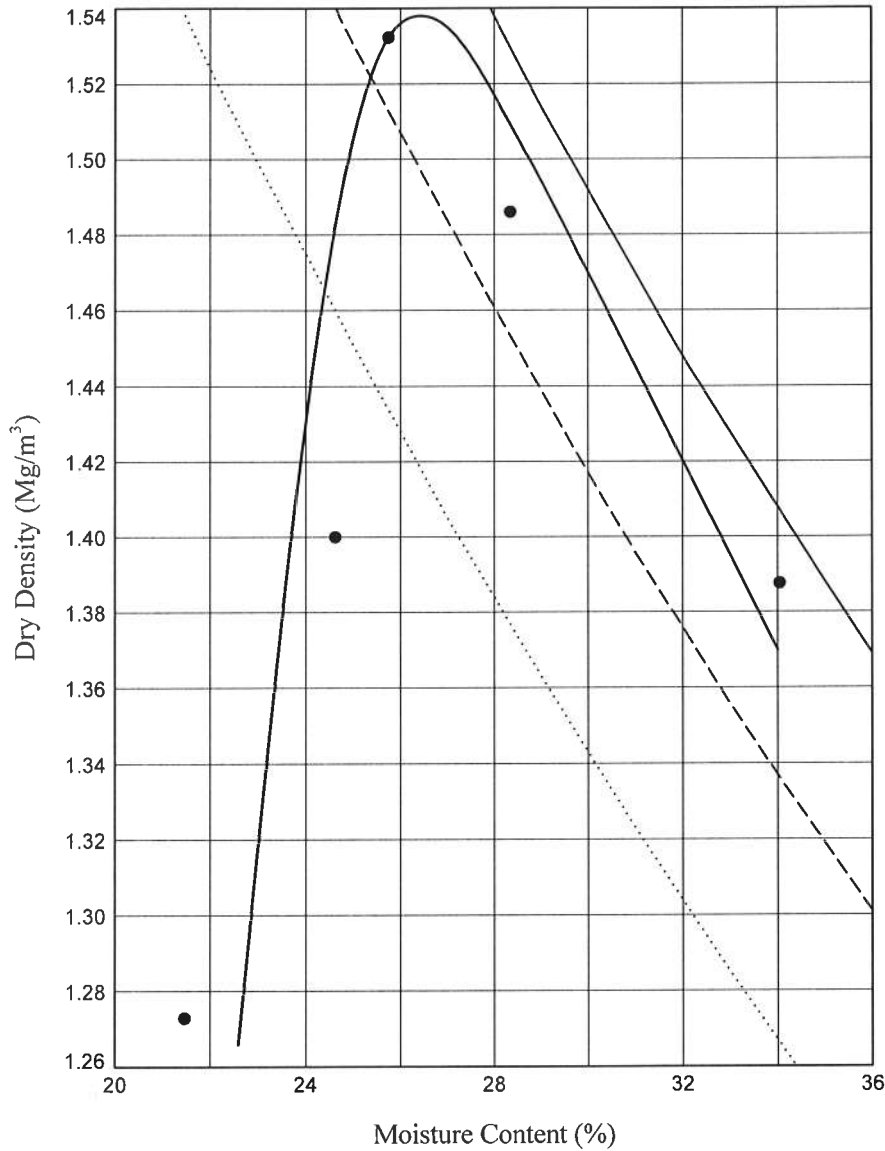
STRUCTURAL SOILS
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 Bristol BS3 4EB

Contract	Date	Checked By	Date
	Grovefield Way, Cheltenham		
Client	Job No		
	H Bailey		
		722048	

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP1** Sample Ref: **5** Sample Type: **B** Depth (m): **1.10**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 26	Compaction Type	: Light	Maximum Dry Density (Mg/m ³)	: 1.54
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg)	: 2.5	Optimum Moisture Content (%)	: 26
% Retained on 20.0mm BS Sieve	: 0	Type of Mould	: Proctor	Method Used:	Clause 3.3
Particle Density - assumed (Mg/m ³)	: 2.70			Remarks:	
Size of Soil Pieces	: <20mm	Separate samples were used.			
Sample Description				Key to Voids Ratio Lines	
Brown CLAY.				——— 0%	- - - - 5%
			 10%	

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN



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Bedminster
Bristol BS3 4EB

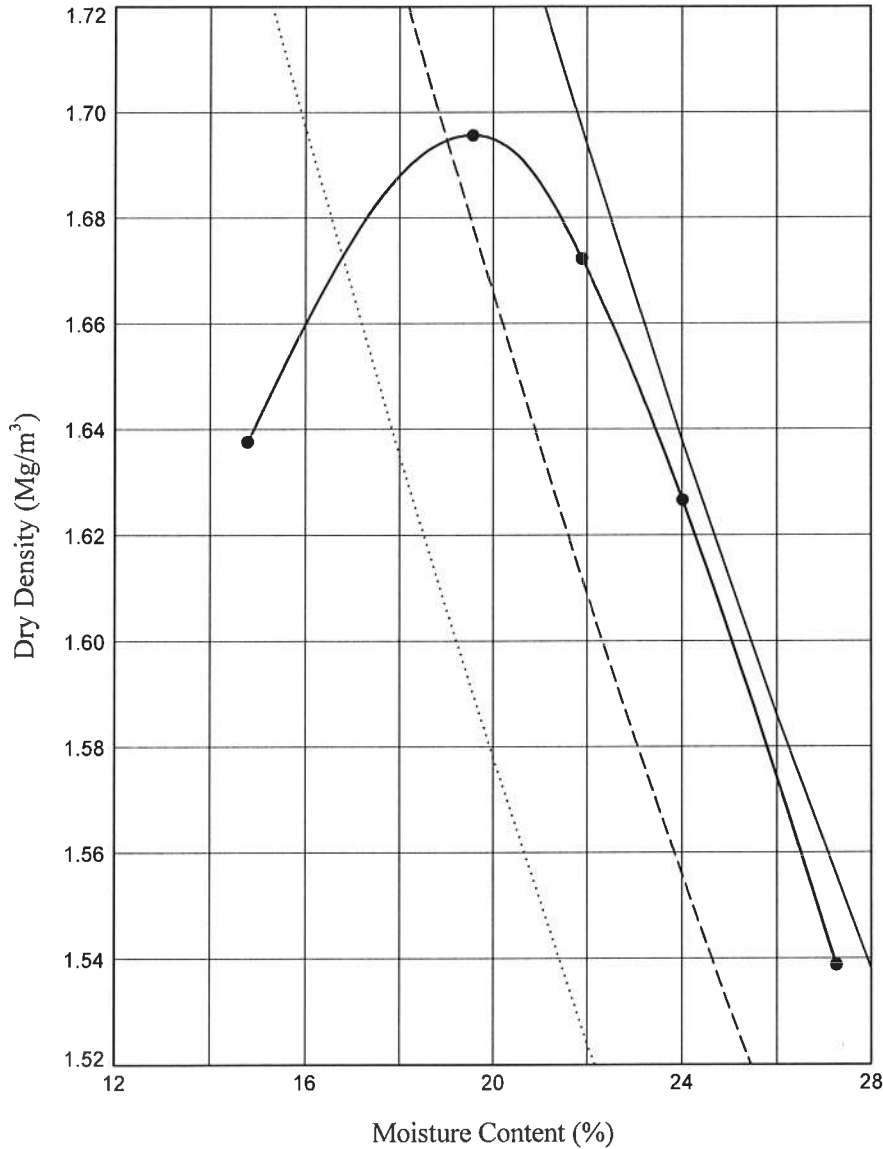
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<i>A. D. K.</i>	03/09/08	<i>David</i>	3/9/08
Contract		Job No	
Grovefield Way, Cheltenham		722048	



DRY DENSITY / MOISTURE CONTENT RELATIONSHIP TEST

In accordance with clauses 3.3,3.4,3.5,3.6,3.7 of BS1377:Part 4:1990

Trial Pit : **TP1** Sample Ref: **5** Sample Type: **B** Depth (m): **1.10**



Initial Sample Conditions		Test Details		Test Results	
Initial Moisture Content (%)	: 27	Compaction Type	: Heavy	Maximum Dry Density (Mg/m³)	: 1.70
% Retained on 37.5mm BS Sieve	: 0	Mass of Rammer (kg)	: 4.5	Optimum Moisture Content (%)	: 20
% Retained on 20.0mm BS Sieve	: 0	Type of Mould	: Proctor	Method Used:	Clause 3.5
Particle Density - assumed (Mg/m³)	: 2.70	Remarks:			
Size of Soil Pieces	: <20mm	Separate samples were used.			
Sample Description				Key to Voids Ratio Lines	
Brown CLAY.				——— 0% - - - - 5% 10%	

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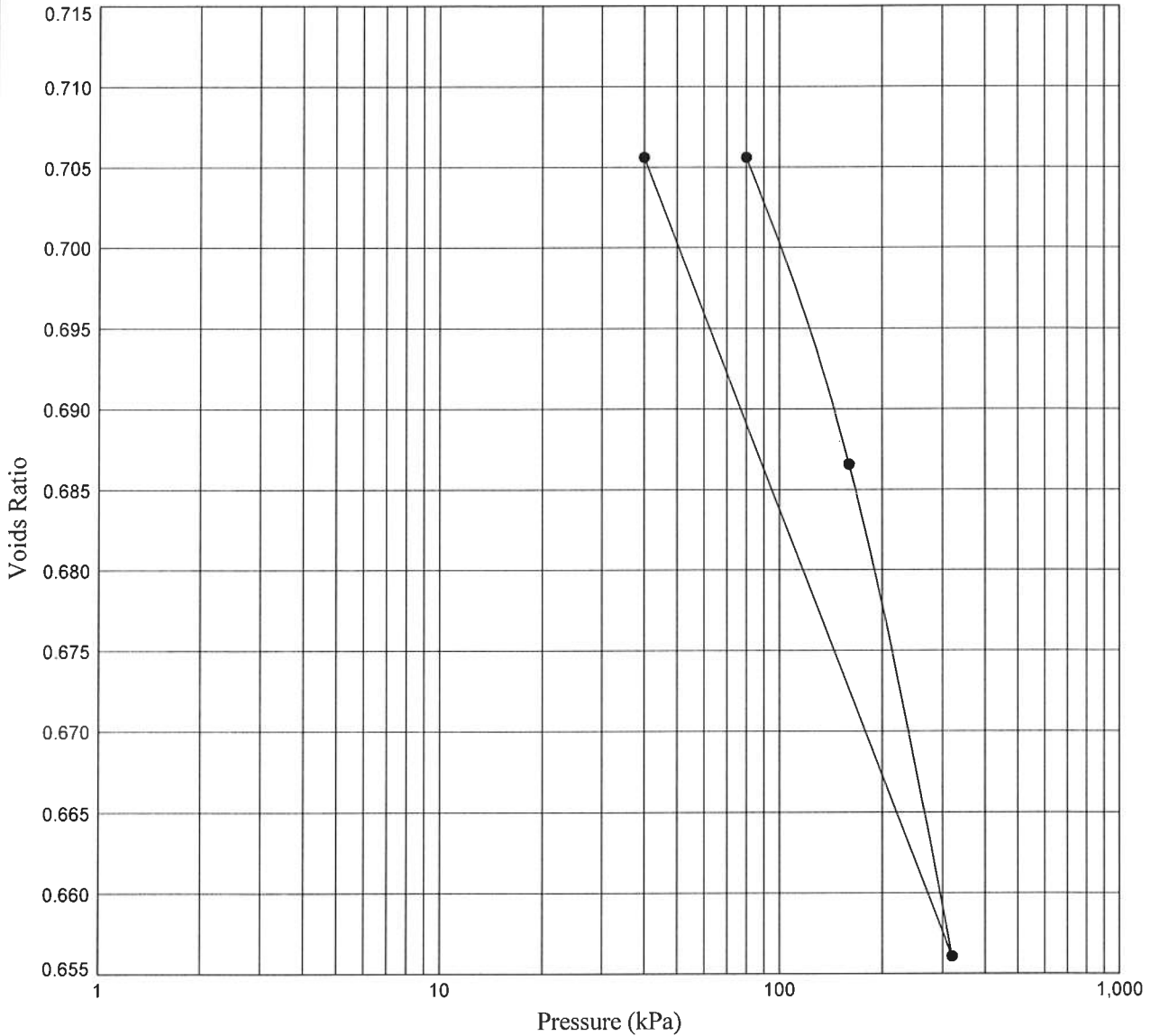
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ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377:Part 5:1990

Borehole : **BH3** Sample Ref: **5** Sample Type: **U** Depth (m): **2.32**



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	25	Moisture Content (%)	27	Pressure Range (kPa)	Mv (m ² /MN)	Cv (m ² /yr)
Bulk Density (Mg/m ³)	1.98	Bulk Density (Mg/m ³)	2.01	0 - 40	Sample	Swelling
Dry Density (Mg/m ³)	1.58	Dry Density (Mg/m ³)	1.58	40 - 80	0.084	19
Void Ratio	0.7117	Void Ratio	0.7056	80 - 160	0.14	10
Specimen Details				160 - 320	0.11	5.1
Description Brown mottled grey slightly gravelly slightly sandy CLAY.		Height (mm)	20.31	320 - 40	0.11	5.0
		Diameter (mm)	75.10			
		Particle Density (Mg/m ³) (assumed)	2.70			
		Swelling Pressure (kPa)	NA			

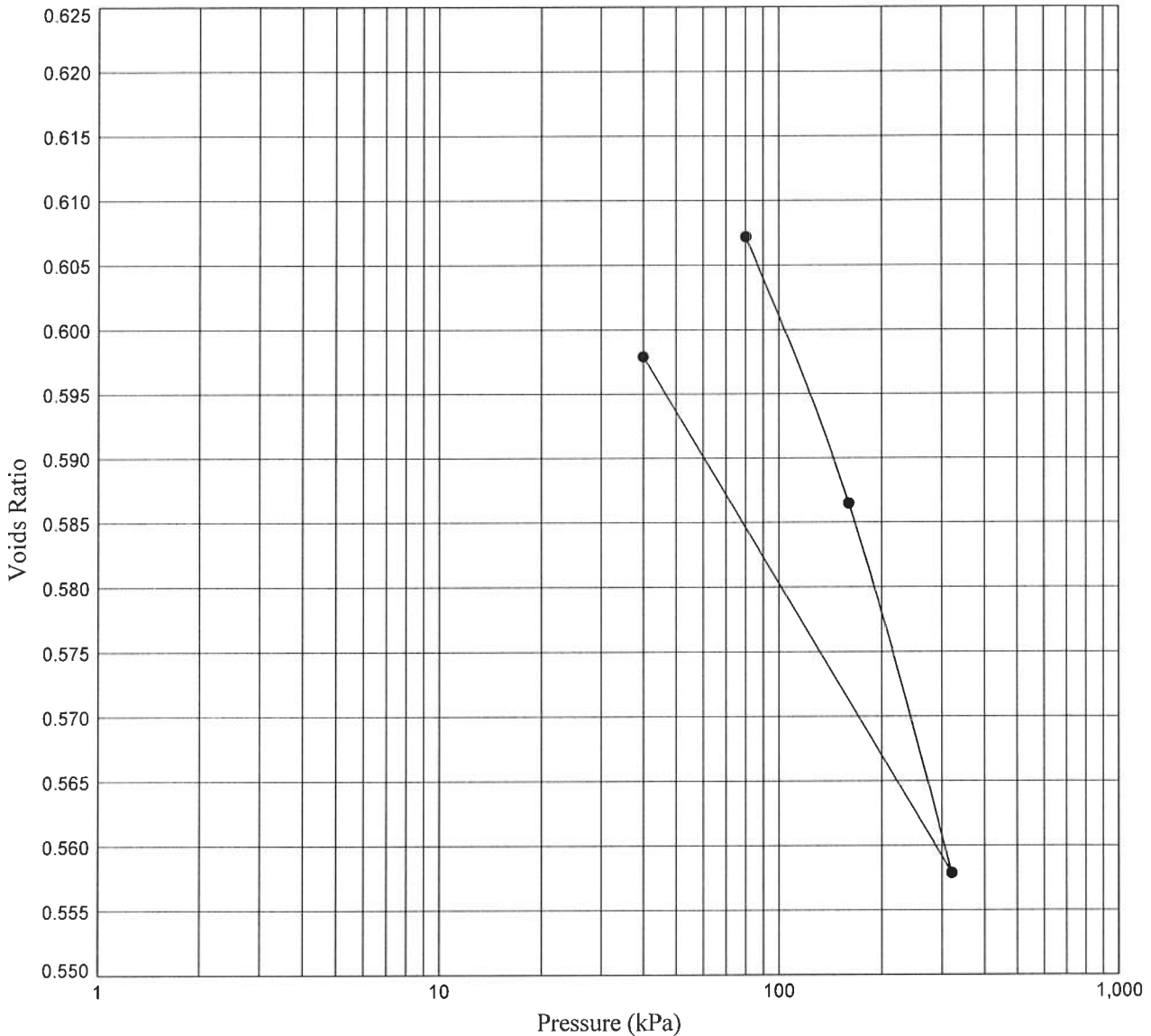
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ONE DIMENSIONAL CONSOLIDATION TEST


In accordance with BS1377:Part 5:1990

Borehole : **BH4** Sample Ref: **6** Sample Type: **U** Depth (m): **3.27**



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%)	: 23	Moisture Content (%)	: 24	Pressure Range (kPa)	Mv (m ² /MN)	Cv (m ² /yr)
Bulk Density (Mg/m ³)	: 2.03	Bulk Density (Mg/m ³)	: 2.09	0 - 40	Sample	Swelling
Dry Density (Mg/m ³)	: 1.65	Dry Density (Mg/m ³)	: 1.68	40 - 80	0.21	6.5
Void Ratio	: 0.6397	Void Ratio	: 0.5979	80 - 160	0.16	7.7
Specimen Details				160 - 320	0.11	4.4
Description Grey CLAY.	Height (mm)	:	19.63	320 - 40	0.092	3.1
	Diameter (mm)	:	75.02			
	Particle Density (Mg/m ³) (assumed)	:	2.70			
	Swelling Pressure (kPa)	:	NA			

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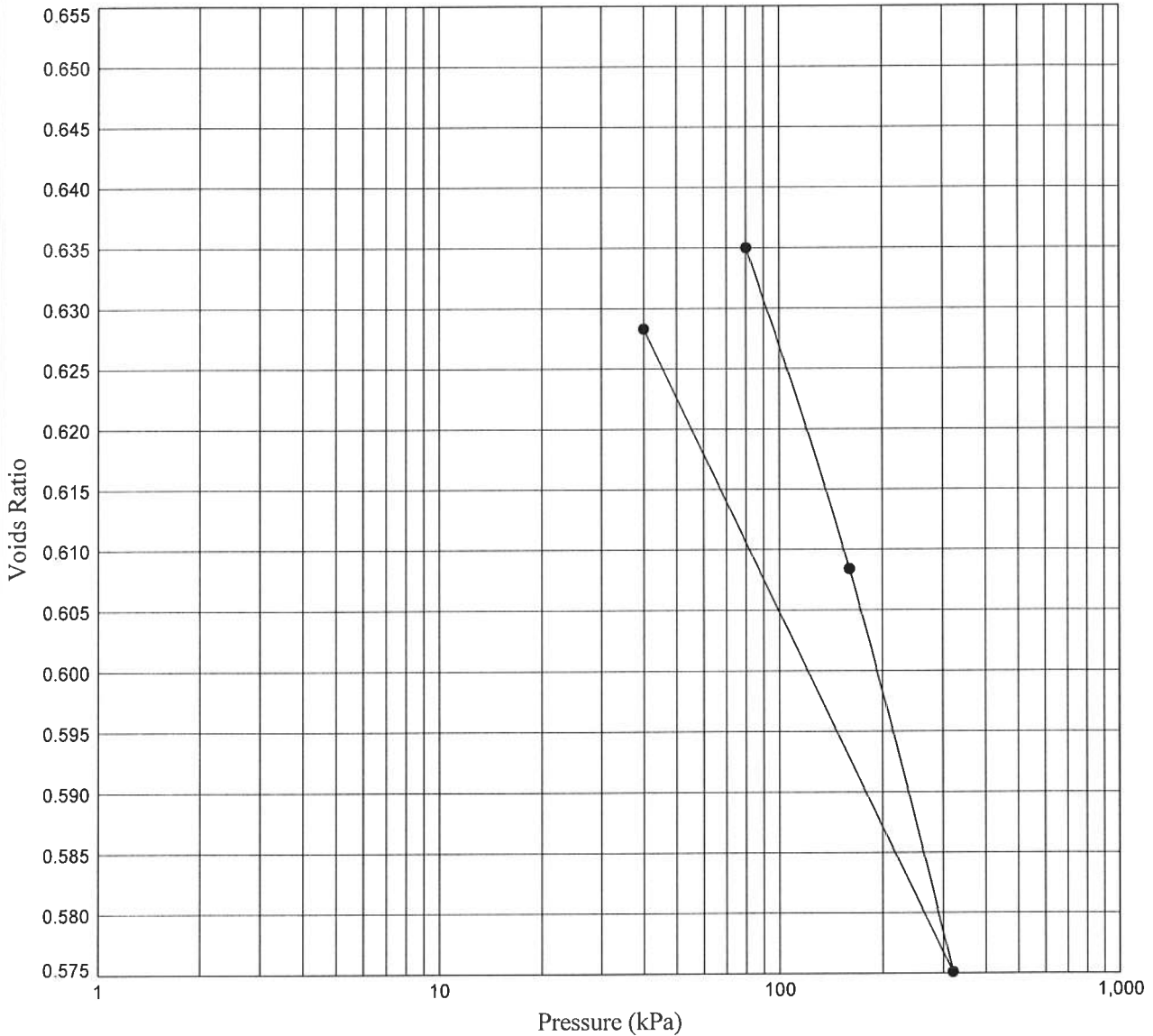
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ONE DIMENSIONAL CONSOLIDATION TEST

In accordance with BS1377:Part 5:1990

Borehole : **BH5** Sample Ref: **8** Sample Type: **U** Depth (m): **2.32**



Initial Specimen Condition		Final Specimen Condition		Test Results		
Moisture Content (%) :	24	Moisture Content (%) :	24	Pressure Range (kPa)	Mv (m ² /MN)	Cv (m ² /yr)
Bulk Density (Mg/m ³) :	1.99	Bulk Density (Mg/m ³) :	2.06	0 - 40	Sample	Swelling
Dry Density (Mg/m ³) :	1.61	Dry Density (Mg/m ³) :	1.66	40 - 80	0.24	13
Void Ratio :	0.6776	Void Ratio :	0.6283	80 - 160	0.20	6.3
Specimen Details				160 - 320	0.13	5.4
Description		Height (mm) :	20.93	320 - 40	0.12	1.2
Grey CLAY.		Diameter (mm) :	75.10			
		Particle Density (Mg/m ³) (assumed) :	2.70			
		Swelling Pressure (kPa) :	NA			

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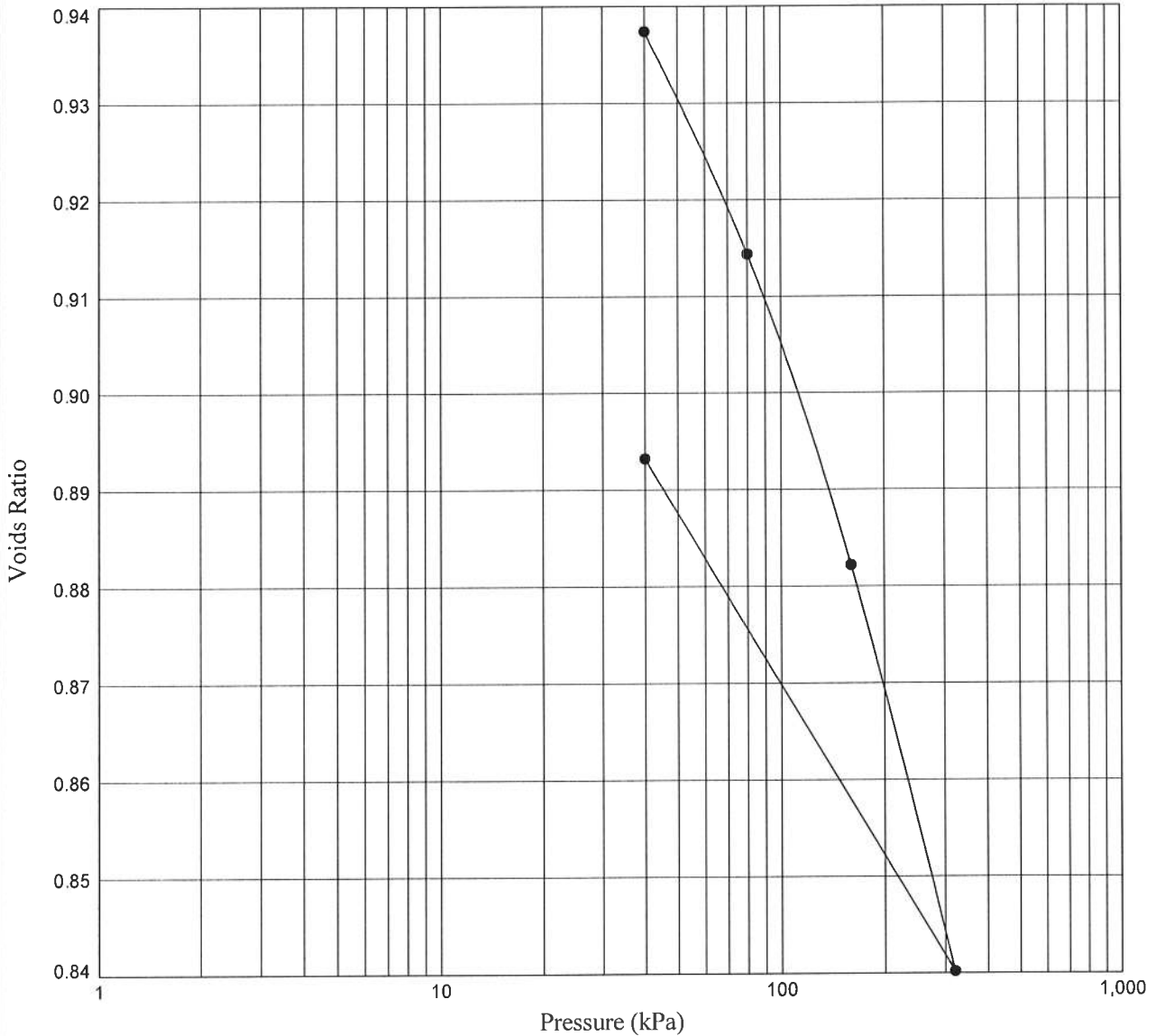
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ONE DIMENSIONAL CONSOLIDATION TEST



In accordance with BS1377:Part 5:1990

Borehole : **BH8** Sample Ref: **7** Sample Type: **U** Depth (m): **3.35**



Initial Specimen Condition		Final Specimen Condition		Test Results			
Moisture Content (%)	: 32	Moisture Content (%)	: 32	Pressure Range (kPa)	Mv (m ² /MN)	Cv (m ² /yr)	
Bulk Density (Mg/m ³)	: 1.81	Bulk Density (Mg/m ³)	: 1.88	0 - 40	0.42	47	
Dry Density (Mg/m ³)	: 1.37	Dry Density (Mg/m ³)	: 1.42	40 - 80	0.30	8.9	
Void Ratio	: 0.9703	Void Ratio	: 0.8932	80 - 160	0.21	7.5	
Specimen Details Description: Grey CLAY.				160 - 320	0.14	19	
				320 - 40	0.10	3.7	
Height (mm)		: 20.74		Swelling Pressure (kPa)			: NA
Diameter (mm)		: 75.15					
Particle Density (Mg/m ³)		: 2.70 (assumed)					

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	Contract	Job No		
Grovefield Way, Cheltenham		722048		
				


SUMMARY OF CHEMICAL ANALYSES

In accordance with clauses 9 of BS1377:Part 3:1990 where applicable.

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Aqueous Extract Sulphate (g/l SO ₄)	pH	% passing 2mm sieve	Description
BH5	6	B	0.40	0.05	8.2	100	Brown mottled orangish brown CLAY.
BH6	8	D	1.80	0.31	8.2	100	Brown mottled orangish brown and grey CLAY.
BH8	2	B	0.30	0.02	8.1	98	Brown slightly gravelly CLAY.
SA2	3	D	0.75	0.03	8.4	98	Brown mottled grey slightly gravelly CLAY.
SA3	6	B	1.50	0.20	8.2	100	Brown mottled orangish brown and grey CLAY.
TP1	2	D	0.45	0.02	8.3	95	Brown slightly gravelly CLAY.
TP2	3	D	0.70	0.06	8.4	95	Brown mottled grey slightly gravelly CLAY.
TP3	3	D	0.75	0.05	8.4	98	Brown mottled grey slightly gravelly CLAY.

NOTES:- All chemical tests were undertaken by an external laboratory.

Approved Signatories: D. TROWBRIDGE A. FROST F. HAMILTON L. MARTIN

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	Contract Grovefield Way, Cheltenham				



SUMMARY OF CHEMICAL ANALYSES

In accordance with clauses 9 of BS1377:Part 3:1990 where applicable.

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Aqueous Extract Sulphate (g/l SO ₄)	pH	% passing 2mm sieve	Description
TP4	5	D	1.20	0.10	8.6	98	Greenish brown mottled grey slightly gravelly CLAY.
TP5	3	D	0.90	0.03	8.5	100	Brown mottled orangish brown and grey CLAY.
TP6	4	D	0.65	0.02	8.4	100	Brown mottled orangish brown and grey CLAY.
TP6	5	D	0.90	0.16	8.3	100	Brown mottled orangish brown and grey CLAY.
TP7	3	D	0.60	0.02	8.4	98	Brown mottled orangish brown and grey slightly gravelly CLAY.
TP9	5	B	1.40	0.22	8.3	98	Brown mottled orangish brown and grey slightly gravelly CLAY.
TP10	6	D	1.10	0.32	8.5	100	Grey mottled brown CLAY.
TP11	5	D	1.35	0.04	8.5	98	Grey mottled brown slightly gravelly CLAY.

NOTES:- All chemical tests were undertaken by an external laboratory.

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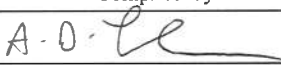

SUMMARY OF CHEMICAL ANALYSES

In accordance with clauses 9 of BS1377:Part 3:1990 where applicable.

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Aqueous Extract Sulphate (g/l SO ₄)	pH	% passing 2mm sieve	Description
TP12	3	D	0.75	0.03	8.3	100	Brown mottled orangish brown and grey CLAY.
TP14	5	B	1.00	0.06	8.1	100	Brown mottled orangish brown and grey CLAY.

NOTES:- All chemical tests were undertaken by an external laboratory.

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