Auger House, Cross Lane,
Wallasey, Wirral, CH45 8RH

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Site Investigation Report

Auger Ref:

182441.1.BSI



Job Information	
Client	Questgates
Client ref	QG1S1211657
Visit date	26/03/2025
Report date	31/03/2025

Job Summary

- CCTV survey undertaken. Read more.
- Drainage repairs required. Read more.

Job Information

Overview

Brief	Auger were commissioned by Questgates to undertake a site investigation and CCTV inspection of the underground drainage within the area of concern (AOC) at the property.

Findings

Trial Hole Findings	The area of suspended flooring had been lifted internally by a third party contractor to allow us access to the sub floor for TH2. **Trial Hole 1** TH1 was completed in the desired location, we were able to expose the footings and collect the requested soil and root samples. **Trial Hole 2** TH2 was completed internally in the desired location, we were able to expose the footings and collect the requested soil and root samples.
Drain Survey	We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows: **Line 1 - From MH1 downstream to Buried MH2** Our survey of line 1 revealed a joint displacements at 0.83m downstream. However, this defect was noted to be outside the area of concern. **Line 2 - From RWG1 downstream to Line 1** Our survey of line 2 revealed a large joint displacements. **Line 3 - From RWG2 downstream to Line 1** Our survey of line 3 revealed no significant defects to the pipework on this line which could be allowing an escape of water.

Recommendations

Refer Back to Client	It is recommended that the following repairs are carried out to prevent an escape of water from the system: **Line 2** Excavate and replace RWG1 and 1m of 100mm pipework at a depth no greater than 1.0m through hot lay tarmac. The surface will be temporarily reinstated with cold lay tarmac to leave the area safe and tidy. A specialist contractor will be required to reinstate the hot lay tarmac which would incur additional costs. Auger have not allowed or will not be held responsible for any alteration or modification to the above ground drainage following the removal of the existing gully and reinstatement of a new gully. The customer must ensure that the above ground drainage correctly expels into the gully pot and avoids overcrowding the gully with numerous downpipes which could lead to the gully overflowing. During the clean-up/reinstatement process we will endeavour to leave the area we are working in clean and tidy and as close to how we found it as possible. There will always be an element of general debris/mud/waste that will build up in the area which cannot be prevented. There may however be elements of this process that are outside our remit i.e., Repainting or cleaning. If this is the case, then we will need to speak to the customer's insures to help in this regard. We will now refer the claim back to the client in order to progress the claim.
Repair Caveats	*Once repairs have been undertaken the customer should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing / free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.* *With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on-site and could potentially cause an increase in repair costs and inconvenience.* *Where any excavation reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact match.* *The relining of a severe joint displacement is normally unadvised due to the potential for complications in the future.* *The above recommendations allow for the replacement of gullies & connected underground drainage only. The insured should be made aware that the aesthetic appearance of this gully may be different from what is currently in place.*

Photographs

Trial Hole 1

Fig 1.1: Trial Hole 1 Location



Fig 1.2: Trial Hole 1 Footing



Trial Hole 2

Fig 2.1: Trial Hole 2 Location



Fig 2.2: Trial Hole 2 Footing



CCTV Stills

Fig 3.1:Large JD on Line 2

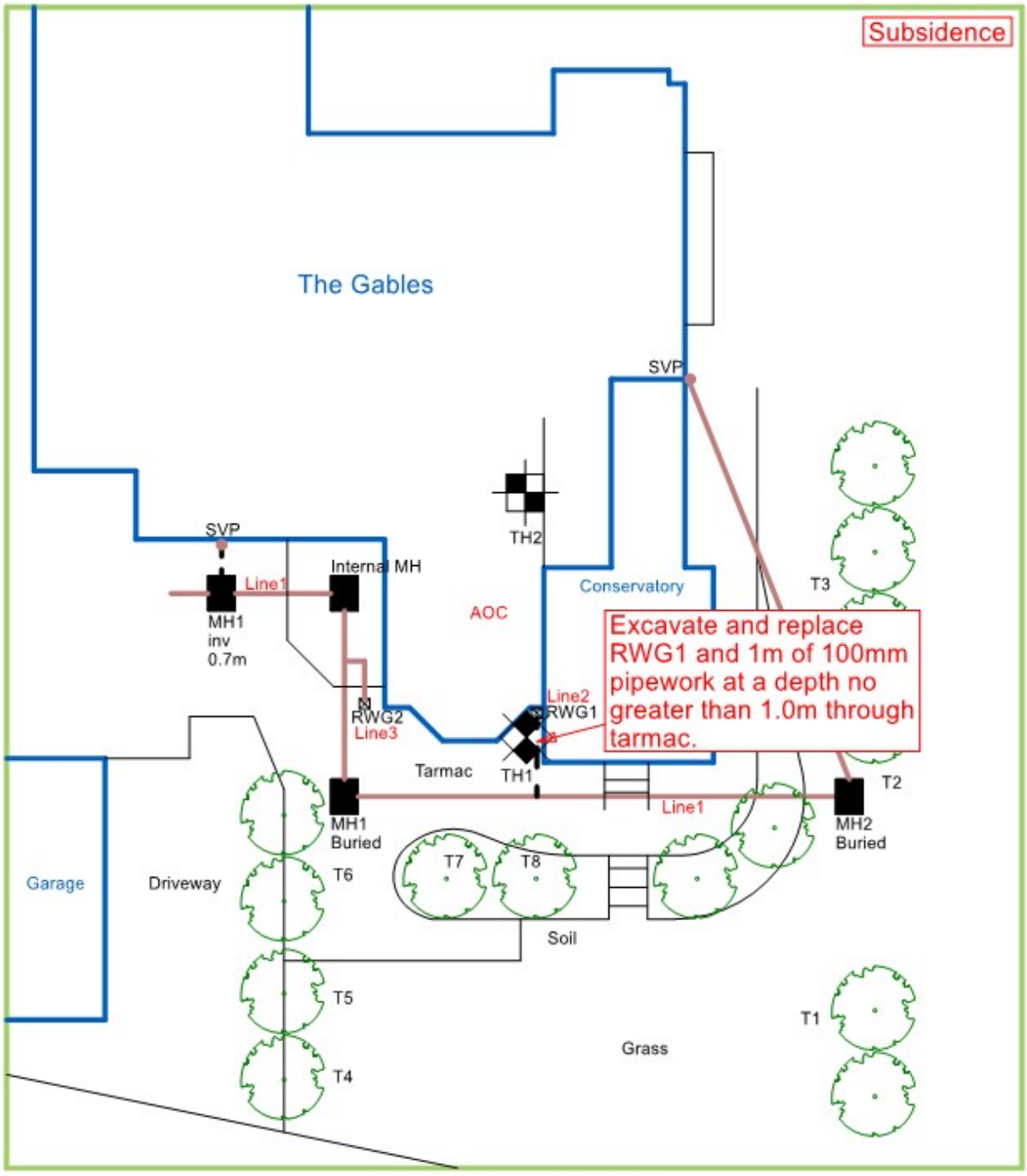


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Proposed Layout

Job Ref: 182441.1

Date: 26/03/2025



FRONT OF PROPERTY

This drawing should be used for diagrammatic purposes only. Auger are not responsible or liable for any 3rd party works undertaken using the details outlined in this drawing. Confirmation of the drainage configuration can only be confirmed by excavation or detailed technical survey.

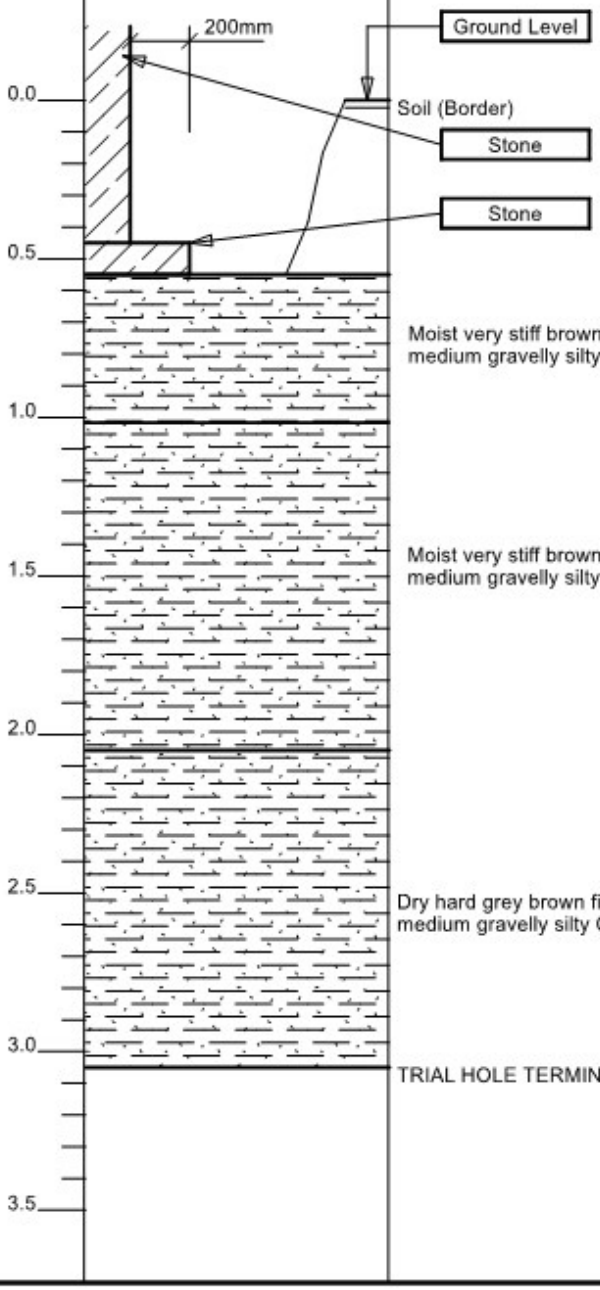
LEGEND

- = Manhole (MH)
- = Inspection Chamber (IC)
- = Inspection Point (IP)
- = Blockage / Collapse
- = Soil Vent Pipe (SVP) / WC
- = Combined Waste Gully (CWG) / Foul Waste Gully (FWG)
- = Rainwater Gully (RWG)
- = Rainwater Pipe (RWP)
- = Lines not to be repaired
- = Lines to be repaired
- = Assumed water mains feed
- = Walls
- = Fences
- = Building Outline
- = Trial hole
- = Borehole
- = Direction of flow
- = Gate / Door
- = Shrubs / Bush
- = Hedge
- = Tree
- = Steps

Trial Hole Log No.1

Location: Front of Property

Job Ref: 182441.1.BSI



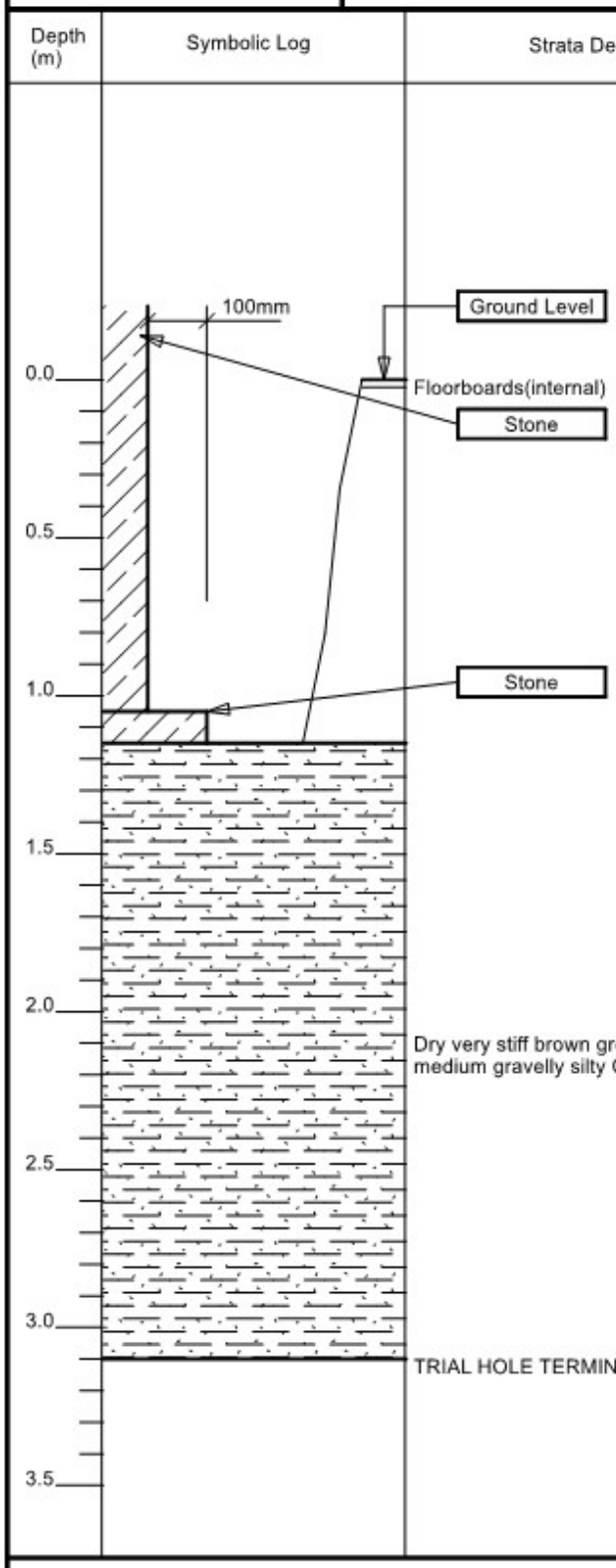
Depth (m)	Strata Description	Insitu Tests SV(19)	Soil Sample	Root Sample
0.5	Moist very stiff brown fine to medium gravelly silty CLAY	90kpa	Soil @ 0.55m	Root @ 0.55m
1.0		125kpa	Soil @ 1.05m	
1.5	Moist very stiff brown grey fine to medium gravelly silty CLAY	150kpa	Soil @ 1.55m	
2.0		150kpa	Soil @ 2.05m	
2.5	Dry hard grey brown fine to medium gravelly silty CLAY	150kpa	Soil @ 2.55m	
3.0	TRIAL HOLE TERMINATED	150kpa		
3.5				

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Trial Hole Log No.2

Location: Internal

Job Ref: 182441.1.BSI



Depth (m)	Symbolic Log	Strata Description	Insitu Tests SV(19)	Soil Sample	Root Sample
0.0		Ground Level			
		Floorboards(internal)			
		Stone			
0.5					
1.0		Stone			
			100kpa	Soil @ 1.15m	Root @ 1.05m
1.5					
			140kpa	Soil @ 1.65m	
2.0		Dry very stiff brown grey fine to medium gravelly silty CLAY			
			150kpa	Soil @ 2.15m	
2.5					
			150kpa	Soil @ 2.65m	
3.0		TRIAL HOLE TERMINATED			
			150kpa		
3.5					

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**Geotechnical Testing Analysis Report**	auger environmental + claims mgmt + subsidence + drainage +
Unit 3 & 4, Heol Aur, Dafen Ind Estate, Dafen Llanelli, Carmarthenshire, SA14 8QN	***The testing results contained within this report have been performed by GSTL a UKAS accredited laboratory on behalf of Auger.**	**Auger House, Cross Lane, Wallasey, Wirral, CH45 8RH**

Summary Of Claim Details

Policy Holder	
GSTL Job Reference	77981
SI Date	26/03/2025
Issue Date	26/03/2025
Report Date	07/04/2025
Auger Reference	182441.1.5.RSS
Insurance Company	DLG Private Insurance (Natwest)
LA Claim Reference	QG1S1211657
LA Co. Reference	Questgates Subsidence

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Checked and approved	07/04/2025	R.John

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.4 & 5.3) DESCRIPTIONS	auger environmental + claims mgmt + subsidence + drainage +
GSTL Contract Number	**77981**	
Report Date	**07/04/2025**	
Auger Reference	**182441.1.5.RSS**	

TH Trial Hole	Sample Type	Depth (m)	Sample Description
TH1	D	0.55	Brown fine to medium gravelly silty CLAY
TH1	D	1.05	Brown grey fine to medium gravelly silty CLAY
TH1	D	1.55	Brown grey fine to medium gravelly silty CLAY
TH1	D	2.05	Grey brown fine to medium gravelly silty CLAY
TH1	D	2.55	Grey brown fine to medium gravelly silty CLAY
TH2	D	1.15	Brown grey fine to medium gravelly silty CLAY
TH2	D	1.65	Brown grey fine to medium gravelly silty CLAY
TH2	D	2.15	Brown grey fine to medium gravelly silty CLAY
TH2	D	2.65	Brown grey fine to medium gravelly silty CLAY

Test Operator
Jason Smith

GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.4 & 5.3)

auger
environmental + claims mgmt + subsidence + drainage +

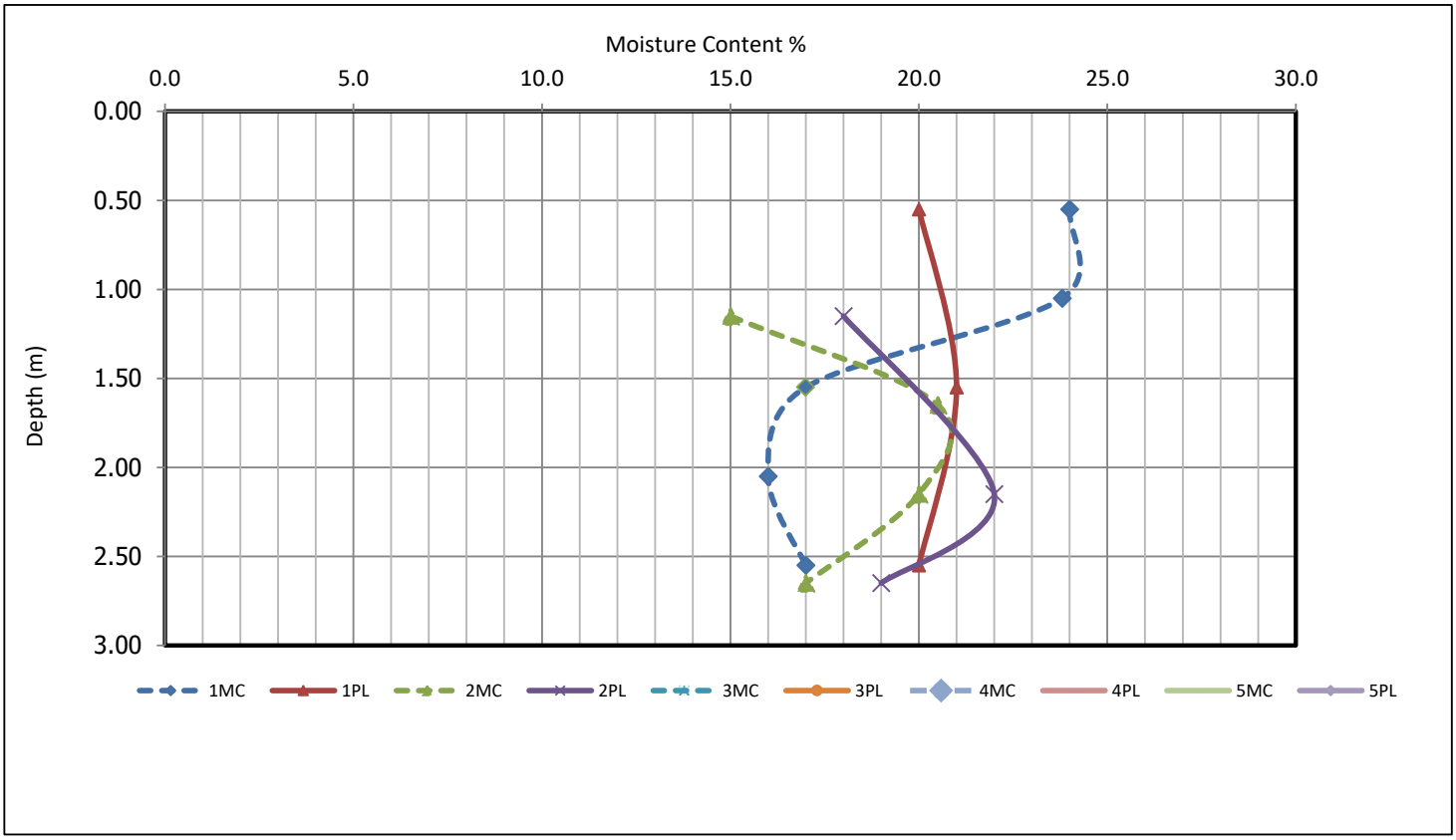
GSTL Contract Number	**77981**	
Report Date	**07/04/2025**	
Auger Reference	**182441.1.5.RSS**	
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)	

TH Trial Hole	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	NHBC Chapter 4.2	Remarks
TH1	D	0.55	24	47	20	27	88	MEDIUM VCP	CI Intermediate Plasticity
TH1	D	1.05	24						
TH1	D	1.55	17	53	21	32	94	MEDIUM VCP	CH High Plasticity
TH1	D	2.05	16						
TH1	D	2.55	17	47	20	27	94	MEDIUM VCP	CI Intermediate Plasticity
TH2	D	1.15	15	48	18	30	95	MEDIUM VCP	CI Intermediate Plasticity
TH2	D	1.65	21						
TH2	D	2.15	20	59	22	37	94	MEDIUM VCP	CH High Plasticity
TH2	D	2.65	17	50	19	31	93	MEDIUM VCP	CI/H Inter/High Plasticity

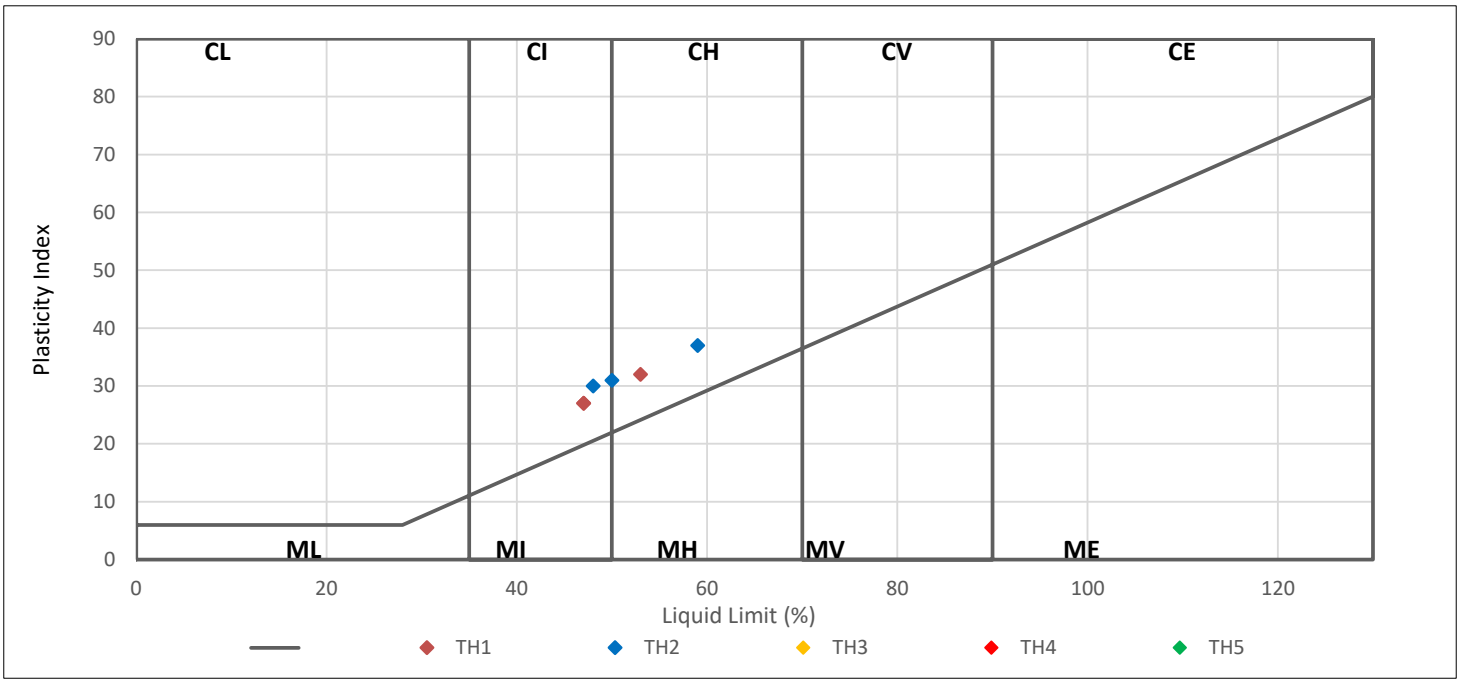
Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator
Jason Smith



PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator
Jason Smith

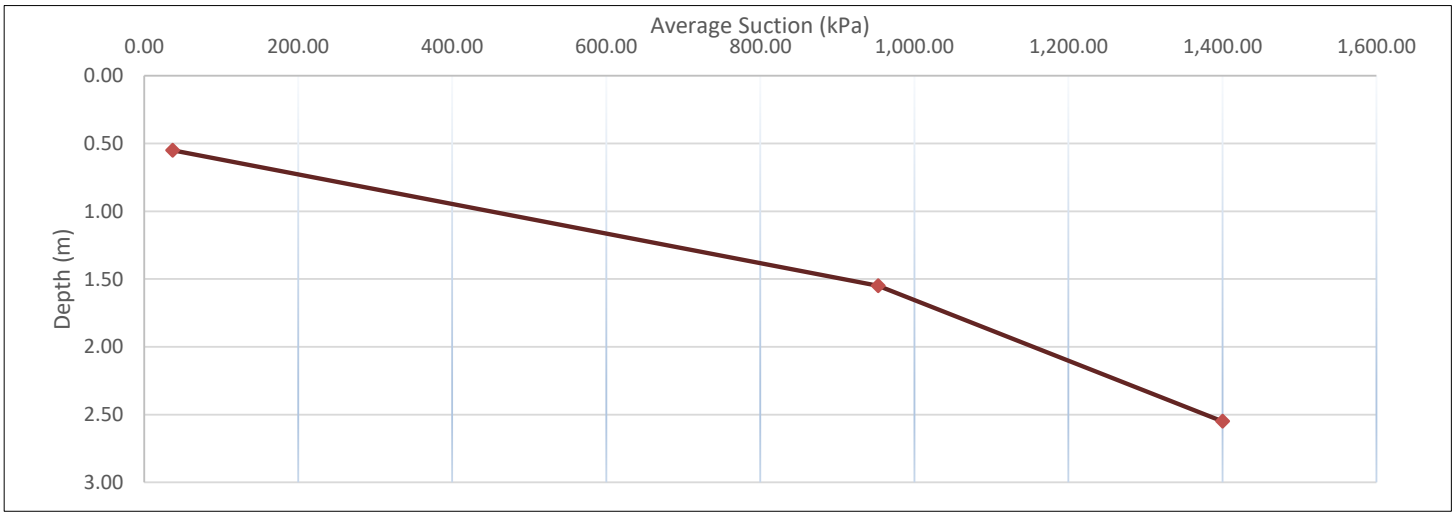
GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	SUMMARY OF SOIL CLASSIFICATION TESTS, BRE Information Paper IP 4/93 February 1993 (CI/SfB p1), BRE Information Paper Digest 412 ci/sFb (A3s) February 1996	auger environmental claims mgmt subsidence drainage
GSTL Contract Number	**77981**	
Report Date	**07/04/2025**	
Auger Reference	**182441.1.5.RSS**	
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample	

TH Trial Hole	Depth (m)	Filter Paper Location	Filter Paper	Sample Prep Method	Test Duration (Days)	Water Content (%)	Soil Suction Pk (kPa)	Average Soil Suction Pk (kPa)	Cumalative Heave Potential (mm) from bottom of the hole
TH1	0.55	Top	I	D	5	70.5	29	37	17
TH1		Middle	II	D	5	55.7	52		
TH1		Bottom	III	D	5	71.0	29		
TH1	1.05								
TH1									
TH1									
TH1	1.55	Top	I	D	5	29.9	961	953	17
TH1		Middle	II	D	5	29.9	953		
TH1		Bottom	III	D	5	30.0	947		
TH1	2.05								
TH1									
TH1									
TH1	2.55	Top	I	D	5	27.2	1410	1400	7
TH1		Middle	II	D	5	27.2	1400		
TH1		Bottom	III	D	5	27.2	1400		

Heave potential is calculated from the bottom of the hole and heaves above the bottom of the hole are reported as a cumalative value.

The values reported for heave above only apply to the strata the suction and plasticity have been performed on. The shallowest depth reported is assumed to be a strata thickness to GL and Heave is calculated based on that layer thickness, if the next sample is in 0.5m increments the heave is calculated based on the layer thickness of 0.5m and depths 1m from the sample above will include heave over 1m.

Consideration should be made for other stratas where values are not reported and when working out the heave potential over the entire trial hole.



Test Operator
Jason Smith

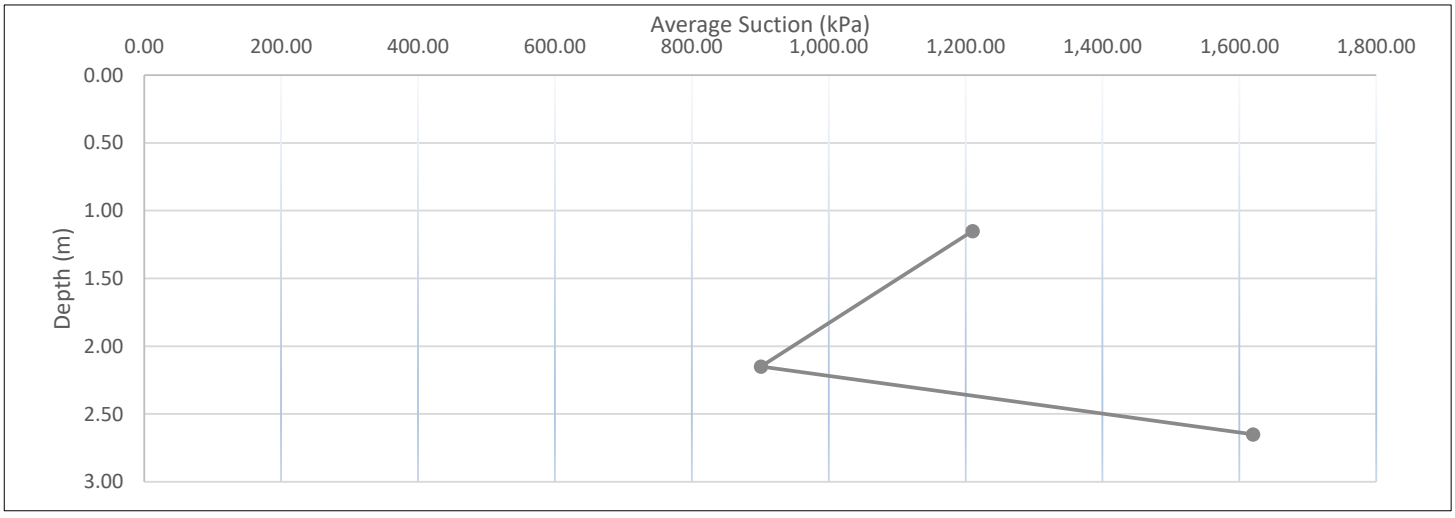
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GSTL Contract Number	**77981**	
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Auger Reference	**182441.1.5.RSS**	
Remarks	D - Disturbed (Recompacted 2.5kg Rammer), U - Undisturbed Sample	

TH Trial Hole	Depth (m)	Filter Paper Location	Filter Paper	Sample Prep Method	Test Duration (Days)	Water Content (%)	Soil Suction Pk (kPa)	Average Soil Suction Pk (kPa)	Cumalative Heave Potential (mm) from bottom of the hole
TH2	1.15	Top	I	D	5	28.2	1210	1210	45
TH2	1.15	Middle	II	D	5	28.3	1210		
TH2	1.15	Bottom	III	D	5	28.3	1200		
TH2	1.65								
TH2	1.65								
TH2	1.65								
TH2	2.15	Top	I	D	5	30.2	912	901	21
TH2	2.15	Middle	II	D	5	30.3	900		
TH2	2.15	Bottom	III	D	5	30.4	893		
TH2	2.65	Top	I	D	5	26.2	1620	1620	10
TH2	2.65	Middle	II	D	5	26.2	1620		
TH2	2.65	Bottom	III	D	5	26.3	1600		

Heave potential is calculated from the bottom of the hole and heaves above the bottom of the hole are reported as a cumalative value.

The values reported for heave above only apply to the strata the suction and plasticity have been performed on. The shallowest depth reported is assumed to be a strata thickness to GL and Heave is calculated based on that layer thickness, if the next sample is in 0.5m increments the heave is calculated based on the layer thickness of 0.5m and depths 1m from the sample above will include heave over 1m.

Consideration should be made for other stratas where values are not reported and when working out the heave potential over the entire trial hole.



Test Operator
Jason Smith

Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, MSc, PhD, MRSB, FLS
James Richardson
BSc (Hons. Biology)

Enterprise House
49-51 Whiteknights Road
Reading
RG6 7BB

Tel: *(Direct line)*
E-mail:
Web: www.botanical.net

Auger Solutions
Auger House
Cross Lane
WALLASEY
Wirral CH45 8RH

Your ref: **182441-1-4**

Our ref: 89/3708

04/04/2025

Dear Sirs

Root ID

The samples you sent in relation to the above on 26/03/2025 have been examined. Their structures were referable as follows:

TH1, 0.55m		
6 no.	Examined root: ACER (Maples, Sycamores).	Alive, recently*.
6 no.	Unfortunately all with insufficient cells for identification.	
TH2, 1.15m		
4 no.	Examined root: most referable to ACER (Maples, Sycamores).	Alive, recently*.
9 no.	Unfortunately all with insufficient cells for identification.	

Click here for more information: ACER

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

* * Try out our web site on www.botanical.net * *

Identified with no information on vegetation, on or off site.