

# Site Investigation Report

Auger Ref:  
146117.1USI



## Job Information

Client	Questgates
Client ref	QG1T 2 1472
Visit date	10/03/2023
Report date	06/06/2023

## Job Summary

- CCTV survey undertaken. [Read more.](#)
- ⌀ Drainage repairs required. [Read more.](#)
- 2 trial holes undertaken. [Read more.](#)
- ⌀ Trial Hole depth not reached. [Read more.](#)
- No drainage defects found. [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

#### Trial Hole 1

Within TH1 we revealed the footing but we were unable to reach the required depth in TH1 because we encountered chalk which our engineer could not auger through at 1.6m. The Trial Hole was excavated in the proposed location. We took soil and root samples. These measurements are shown in Trial Hole Log 1 below.

#### Trial Hole 2

Within TH2 we revealed the footing but we were unable to reach the required depth in TH2 because we encountered chalk which our engineer could not auger through at 1.6m. The Trial Hole was excavated in the proposed location. We took soil and root samples. These measurements are shown in Trial Hole Log 2 below.

The base of the footing for TH2 was determined by probing to a depth below 1m and therefore the exact profiles/depth cannot be guaranteed.

### Drain Survey

We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows:

#### Line 1 - From RWP1 downstream

Our survey of line 2 revealed mass amounts of silt/debris that we were unable to clear of survey past. This line is suspected to lead to a soakaway however we are unable to confirm this.

#### Line 2 - From RWP2 downstream

Our survey of line 2: We were unable to pass a 90 degree bend approximately 1.5m downstream of RWP2 we were therefore unable to get a full visual of the pipework. This line is also filled with silt and debris.

#### Line 3 - 5

Our survey of line 3 - 5 revealed no significant defects to the pipework on this line which could be allowing an escape of water.

## Recommendations

<b>Refer Back to Client</b>	<p>It is recommended that the following repairs are carried out to prevent an escape of water from the system:</p> <p><b>Line 1</b> Sonde, excavate and replace 1m of 100mm pipework including a branch connection approximately 1m downstream of RWP1 at a depth no greater than 1.0m through concrete.</p> <p>carry out jetting to clear the line up and downstream of the excavation.</p> <p>We will then need to conduct a further CCTV investigation upstream and downstream on this line.</p> <p>Please note that the further CCTV investigation may reveal additional defects to the drainage system. This will be reported whilst on-site and could potentially cause an increase in repair costs and provide further inconvenience to the customer/occupants.</p> <p>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 insurers to help in this regard.</p> <p>We will now refer the claim back to the client in order to progress the claim.</p>
<b>Repair Caveats</b>	<p><i>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.</i></p> <p><i>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.</i></p> <p><i>The proposed repairs will require radio detection in order to confirm the location of the defects. Although this is usually very accurate, a number of factors such as depth of pipework and presence of other services below ground can have an effect on the signal. This can result in a change of the location of the proposed excavation as well as the assumed depth and this may impact the scope of works. Costs may be subject to change due to the potential of excavating to a different depth and/or through different surfaces.</i></p> <p><i>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.</i></p>

## 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



## Site Photos

Fig 4.1: RWP1 area of excavation

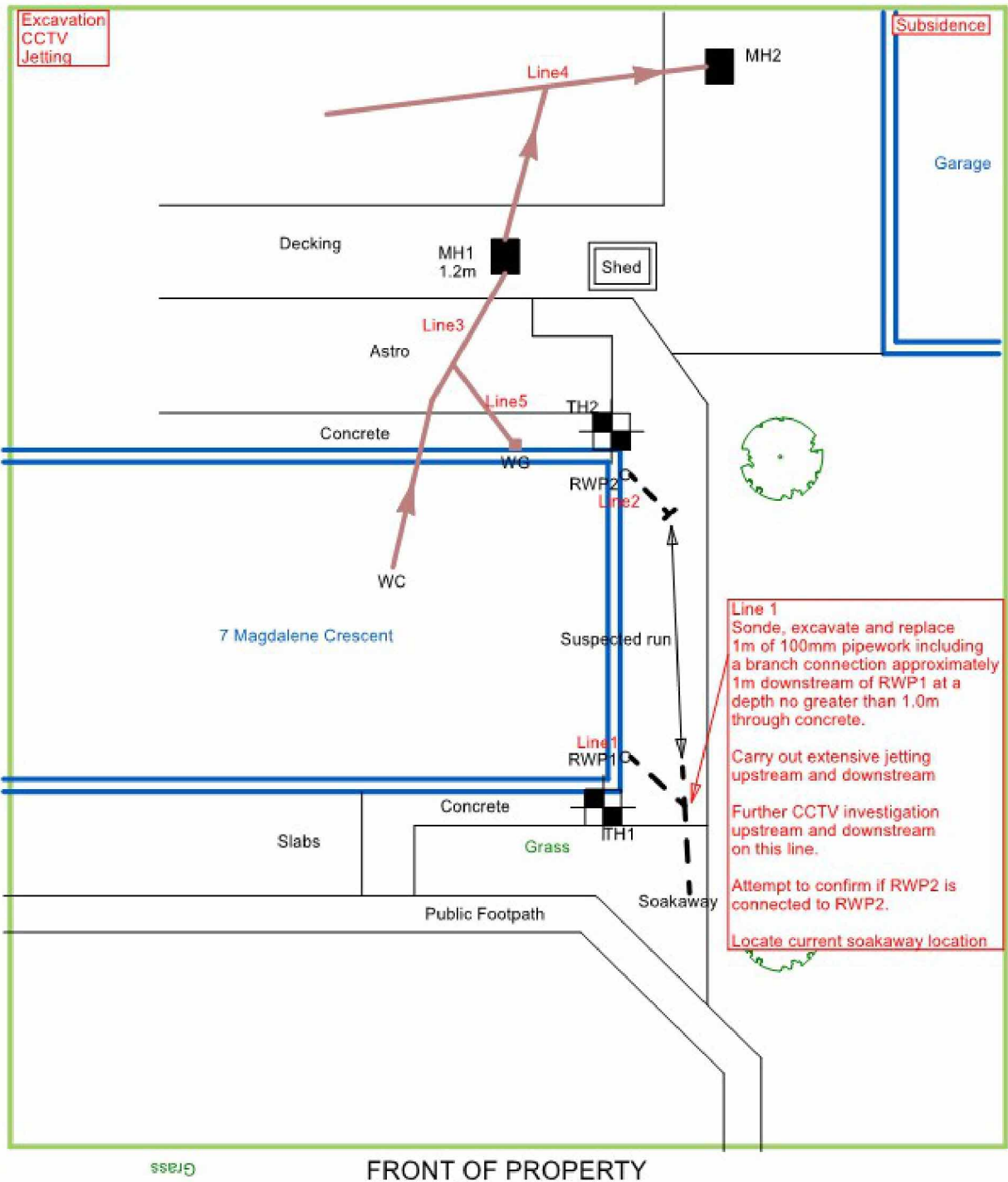


Fig 4.2: Rear of the property



Fig 4.3: RWP2





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



# Trial Hole Log No.1

Location: Front right

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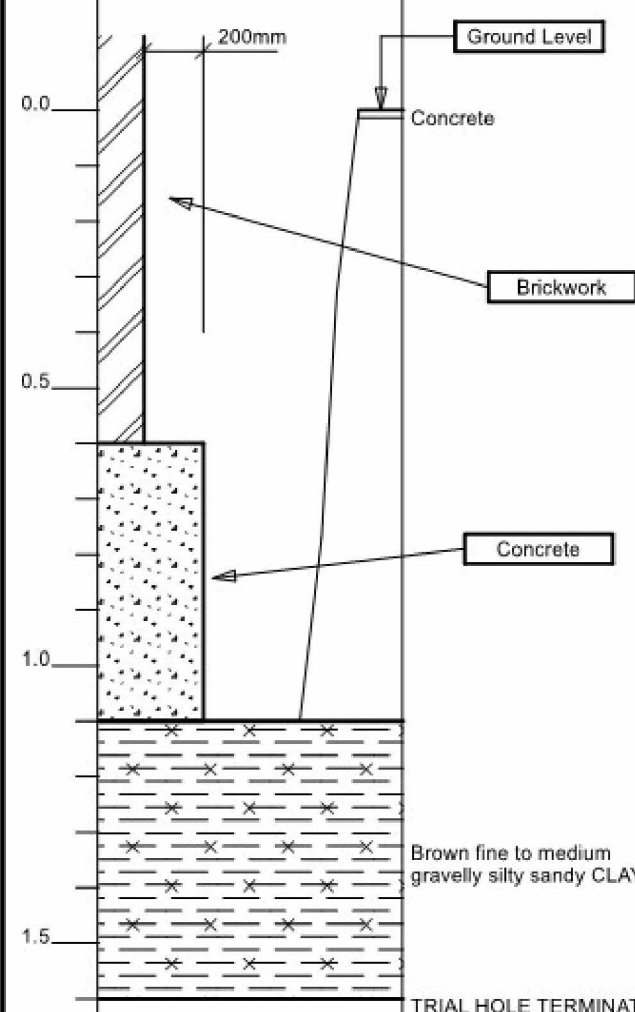
Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0	<p>150mm</p> <p>Ground Level</p> <p>Concrete</p> <p>Brickwork</p> <p>Concrete</p>					
0.5						
1.0	<p>Dry Brown slightly sandy fine to medium gravelly silty CLAY</p> <p>Dry Brown fine to medium gravelly silty sandy CLAY</p>		96kpa	Soil @ 0.7m	Root @ 0.7m	
1.5			140kpa	Soil @ 1.2m		
2.0	TRIAL HOLE TERMINATED					



# Trial Hole Log No.2

Location: Rear right corner

Job Ref:  
146117.1.USI

Depth (m)	Symbolic Log	Strata Description	Insitu Tests		Soil Sample	Root Sample
			SV(19)			
0.0		<p>Ground Level</p> <p>Concrete</p> <p>Brickwork</p> <p>Concrete</p> <p>Brown fine to medium gravelly silty sandy CLAY</p> <p>TRIAL HOLE TERMINATED</p>	140kpa		Soil @ 1.1m	Root @ 1.1m

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

<b>Policy Holder</b>	
<b>GSTL Job Reference</b>	65225
<b>SI Date</b>	10/03/2023
<b>Issue Date</b>	10/03/2023
<b>Report Date</b>	22/03/2023
<b>Auger Reference</b>	146117.1.2.RSS
<b>Insurance Company</b>	
<b>LA Claim Reference</b>	QG1T1214472
<b>LA Co. Reference</b>	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

22/03/2023

Wayne Honey










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



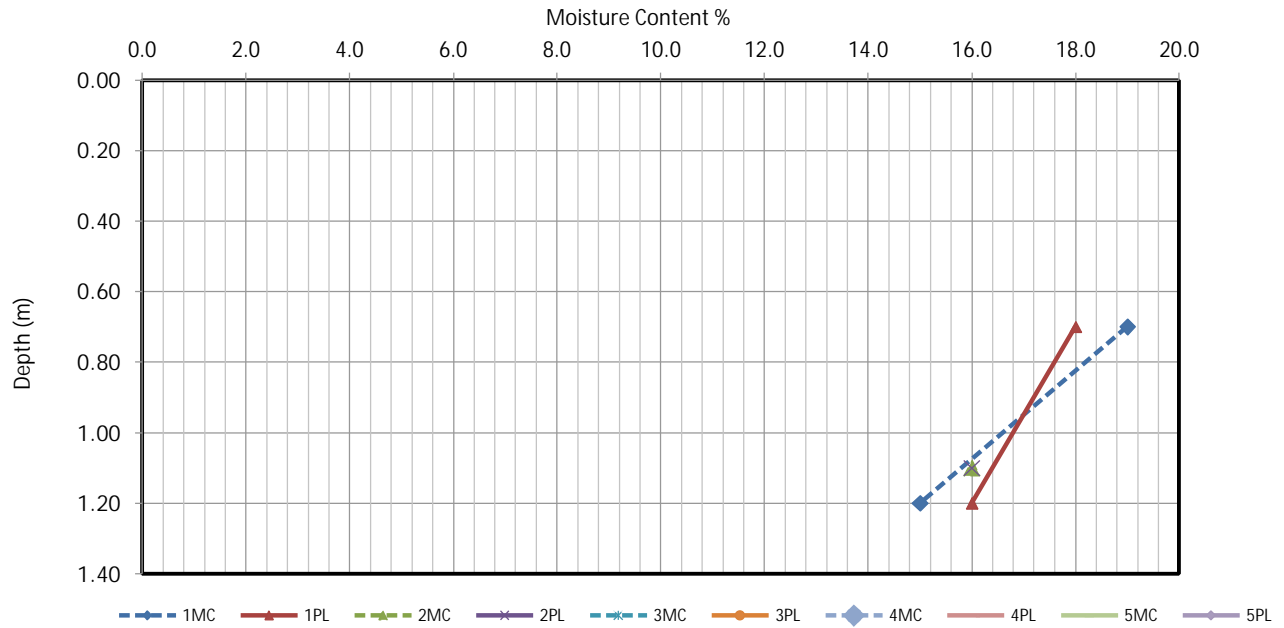
GSTL Contract Number	65225
Report Date	22/03/2023
Auger Reference	146117.1.2.RSS
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)

TH Trial Hole	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	NHBC Chapter 4.2	Remarks
TH1	D	0.70	19	54	18	36	88	MEDIUM VCP	CH High Plasticity
TH1	D	1.20	15	39	16	23	86	MEDIUM VCP	CI Intermediate Plasticity
TH2	D	1.10	16	43	16	27	86	MEDIUM VCP	CI Intermediate Plasticity

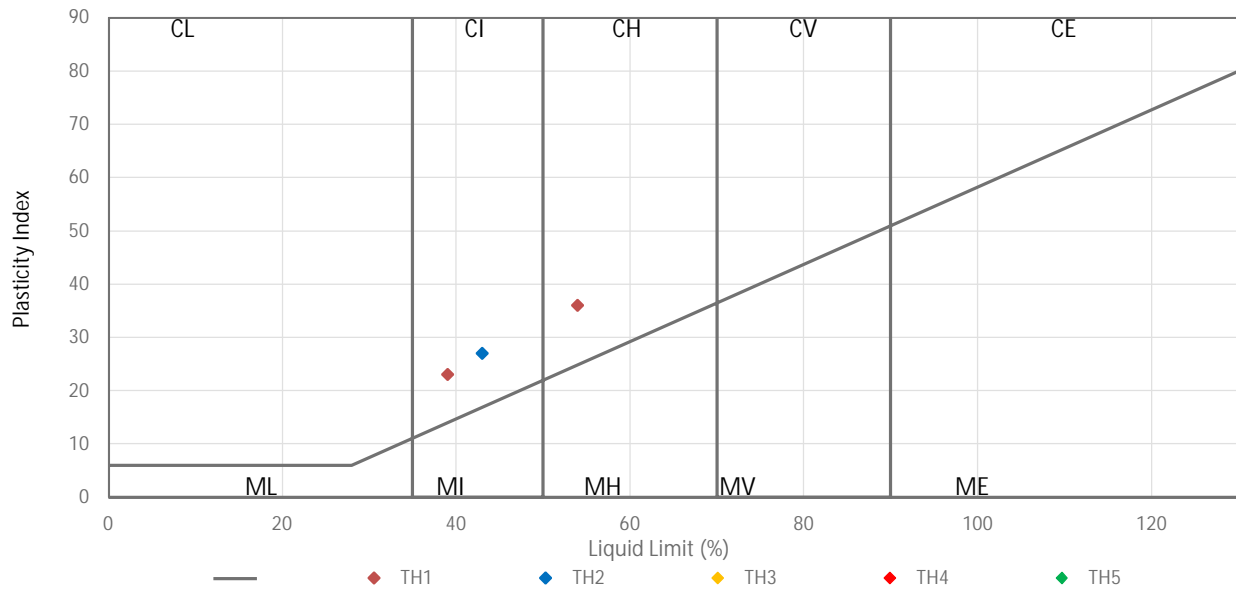
Modified Plasticity Index (PI) <10 : Non Classified  
 Modified PI = 10 to <20 : Low volume change potential (LOW VCP)  
 Modified PI = 20 to <40 : Medium volume change potential (Med VCP)  
 Modified PI = 40 or greater : High volume change potential (HIGH VCP)

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



# 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)

**Auger Solutions**  
**Auger House**  
**Cross Lane**  
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**49-51 Whiteknights Road**  
**Reading**  
**RG6 7BB**

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Your ref: 146117-1-1

Our ref: 86/2302

18/04/2023

Dear Sirs

## Root ID

The samples you sent in relation to the above on 10/03/2023 have been examined. Their structures were referable as follows:

TH1, 0.7m		
3 no.	Examined root: ACER (Maples, Sycamores).	Alive, recently*.
2 no.	Examined root: HEDERA (Ivy) - or the related FATSIA (a robust shrub with fig-like leaves).	Dead*.
1 no.	Microscopic examination showed insufficient cells for recognition.	
TH2, 1.1m		
1 no.	Examined root: ACER (Maples, Sycamores).	Alive, recently*.
3 no.	Examined root: a conifer - particularly like the family CUPRESSACEAE (cypresses ('macrocarpa', 'Leylandii' etc.), Thuja (Western Red Cedar), Junipers).	Alive, recently*.
6 no.	Unfortunately all with insufficient cells for identification.	

Click here for more information: [ACER](#) [CUPRESSACEAE](#)

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](http://www.botanical.net) \*\*