



Geotechnical Survey Report

FSI Ref:	26254
Issue Date:	April 2023
Risk Address:	5 Clausentum Close Chandlers Ford Hampshire SO53 2AQ
Engineer:	Neil Crawford
Company:	Crawford
Claim Ref:	SU2207095

Managing Director:	Martin Rush MSc FGS
Finance Director:	Louise Banks BSc (Hons)
Geotechnical Compliance & Logistics Supervisor:	Perry Martin MCIHT
Laboratory Manager:	Jade McLellan
Senior Geologist:	Scott Parker BSc (Hons) FGS
Assistant Geologist:	Sarah Brand
Geotechnical Assistant:	Bradley Webb



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Appendix No: 1

FSI Ref: 26254

SITE PLAN

Property Address: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ

Client Claim Ref: SU2207095

Survey date: 11/04/2023

Operative: SE1



#5



Conservatory

Unable to do CCTV due to MH buried under conservatory floor.
Neighbours MH has a resin drive unable to lift MH without damaging drive.

Rear

Scale:

NTS

Drawn by:

BW

Key:



Trial Pit



Borehole



Manholes



Rain Water
Pipe

Soil &
Vent Pipe

Surface
Water Gully

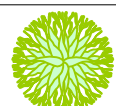
Foul
Water Gully



Shrub



Tree
(Conifer)



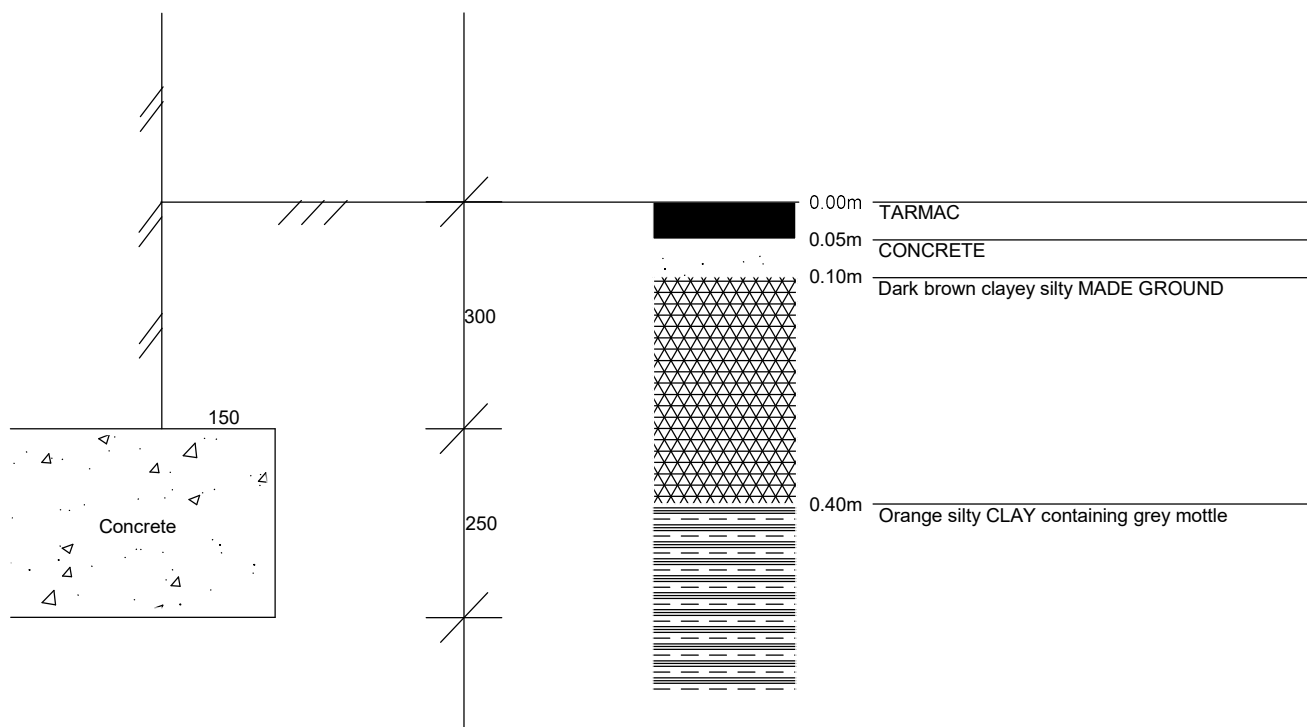
Tree
(Deciduous)

TRIAL PIT 1

Property Address: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ

Client Claim Ref: SU2207095

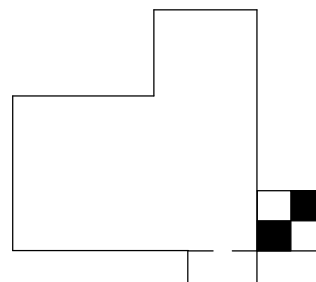
Survey date: 11/04/2023

Operative: SE1


D1 @ F.L. (0.55m)

V = 72-76kPa

Founding strata: Orange silty CLAY containing grey mottle

Trial Pit Location:

Drawn by:

BW

Scale:

1:10

D= small disturbed sample, B= large bulk sample, U= undisturbed sample,
MP= mackintosh probe blow counts, V= shear vane reading (kPa)



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Unit 9, Tyndales Farm
Southend Road
Maldon CM9 6TQ

Borehole Log

Borehole No.

BH1

Sheet 1 of 1

Project Name: SU2207095

Project No.
26254

Site Date: 11/04/2023

Hole Type
BH

Location: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ

Scale
1:26

Client: Crawford

Logged By
SE1

Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Results				
				0.05		TARMAC	
				0.10		CONCRETE	
						Dark brown clayey silty MADE GROUND	
						Foundation top-0.30m (concrete construct projecting 150mm with a thickness of 250mm)	
	0.55	D	V (kPa) = 72 V (kPa) = 76	0.40		Orange silty CLAY containing grey mottle	
						Foundation level-0.55m	
						Roots noted at F/L	
	1.00	D	MP = 25/75mm MP = 25/75mm MP = 27/75mm MP = 29/75mm	0.80		Light grey sandy CLAY containing gravel	1
	1.50	D	V (kPa) = 90 V (kPa) = 94	1.30		Light brown/orange sandy CLAY containing grey mottle	
	2.00	D	V (kPa) = 100 V (kPa) = 104				2
	2.50	D	V (kPa) = 106 V (kPa) = 106				
	3.00	D	V (kPa) = 108 V (kPa) = 110				3
	3.50	D	V (kPa) = 114 V (kPa) = 118				
	4.00	D	V (kPa) = 116 V (kPa) = 118				4
			V (kPa) = 120 V (kPa) = 122				
	5.00	D	V (kPa) = 124 V (kPa) = 128	5.00		End of Borehole at 5.000m	5

Key: D - Disturbed Sample V - Insitu Vane Test MP - Mackintosh Probe Test

Remarks: Borehole closed at 5.00m on completion.
Borehole noted to contain standing water at 2.00m on completion.





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Maldon CM9 6TQ

Borehole Log

Borehole No.

BH2

Sheet 1 of 1

Project Name: SU2207095

Project No.
26254

Site Date: 11/04/2023

Hole Type
BH

Location: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ

Scale
1:25

Client: Crawford

Logged By
SE1

Water Strikes	Sample and In Situ Testing			Depth (m)	Legend	Stratum Description	
	Depth (m)	Type	Results				
				0.30		Grass onto TOPSOIL	
				0.90		Mid brown/orange silty CLAY containing grey mottle	
	1.00	D	MP = 15/75mm MP = 17/75mm MP = 19/75mm MP = 19/75mm	1.20		Orange sandy CLAY containing grey mottle and gravel	1
	1.50	D	V (kPa) = 106 V (kPa) = 110				
	2.00	D	V (kPa) = 108 V (kPa) = 108			Water strike-2.00m	2
	2.50	D	V (kPa) = 110 V (kPa) = 112				
	3.00	D	V (kPa) = 112 V (kPa) = 112	2.80		Light brown/orange sandy CLAY	3
	3.50	D	V (kPa) = 118 V (kPa) = 122				
	4.00	D	V (kPa) = 120 V (kPa) = 124				4
	4.50	D	V (kPa) = 128 V (kPa) = 130	4.50			
						End of Borehole at 5.000m	5

Key: D - Disturbed Sample V - Insitu Vane Test MP - Mackintosh Probe Test

Remarks: Borehole closed at 4.50m due to suction.
Borehole noted to contain standing water at 1.60m on completion.
Borehole noted to be dry on completion.





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Appendix No: 3
FSI Ref: 26254

LABORATORY RESULTS

Property Address: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ

Client Claim Ref: SU2207095

Client: Crawford & Company

SAMPLE DETAILS		ANALYSIS REQUESTED	
Investigation date:	11/04/2023	Moisture Content	☒ PSD ☐
Sample details:	Bags as received	Liquid Limit	☒ Soil Suction ☒
Samples received:	19/04/2023	Plastic Limit	☒ Shear Strength ☐
Schedule recieved:	19/04/2023	Plasticity Index	☒ Contamination ☐
Samples tested:	20/04/2023 - 25/04/2023	Root ID	☒ Root/Tree DNA ☐
Results reported:	25/04/2023	Other (please state)	Roots obtained ☐

TEST DETAILS

General

Sample descriptions were written in accordance with BS 5930:1999.

Samples were prepared in accordance with BS 1377: Part 1: 1990, section 7

Samples from this contract will be retained for 1 calendar month following the issue of this report unless otherwise notified

Written approval is required from Fastrack Site Investigations Limited to reproduce report in full. The results shown within this report only relate to the samples tested

Moisture Content

Samples were tested in accordance with BS 1377: Part 2: 1990, section 3.2 (Oven drying method)

In accordance with Note 1 to paragraph 3.2.4 of BS 1377 Part 2 1990; these moisture contents have been corrected to give the equivalent moisture content of the fraction passing the 425µm sieve, to enable comparison with the liquid & plastic limits. (If condition of test is 'natural' the retained percentage is an estimated value, if condition is 'washed' the percentage is a measured value).

Samples are dried at 105-110°C unless otherwise stated.

Atterberg Limits

Samples were tested in accordance with BS 1377: Part 2: 1990, section 4.3 (4 drop LL), 4.4 (1 drop LL), 5.3 (PL) and 5.4 (PI)

Test results on samples with a sand content, may show less accurate results. If condition of test is 'washed' results relate to the fraction passing the 425µm sieve only.

* Driscoll's rules deem the soil to be desiccated where the moisture content is less than the value calculated using driscoll's rule 1 and/or 2

Particle Size Distribution

Samples were tested in accordance with BS 1377: Part 2: 1990 section 9.2 (Wet sieving method)

Undrained Shear Strength

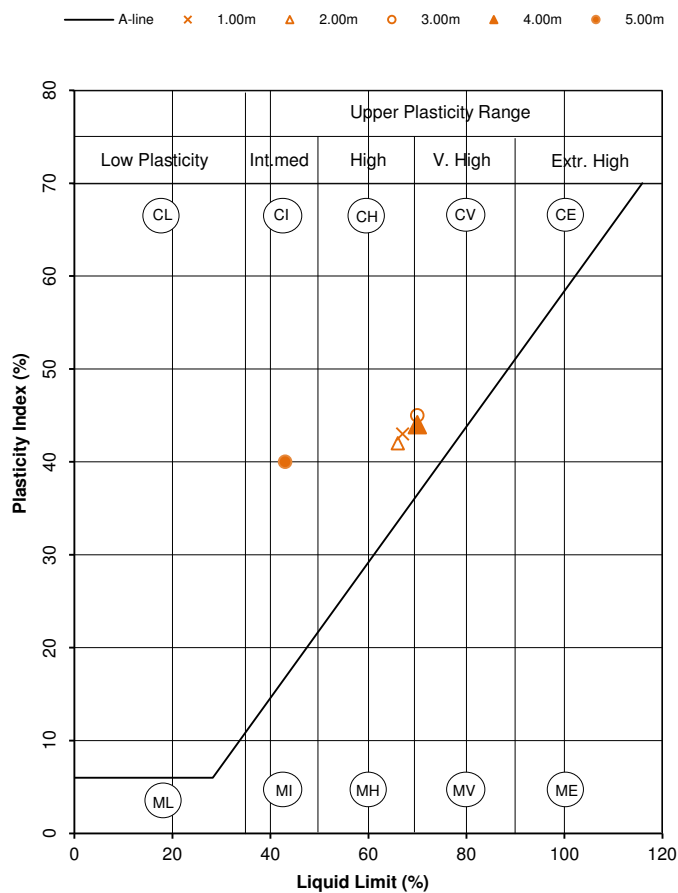
Samples were prepared in accordance with BS 1377: Part 7: 1990 section 8.3 and testing in accordance with BS 1377: Part 7: 1990: section 8.4 (undrained shear strength in triaxial compression without measurement of pore pressure (UU))

Soil Suction

Samples were prepared and tested based on the BRE digest No:IP4/93 (Corrected). 'A method of determining the state of desiccation in clay soils.' (Filter paper method).

Test results on samples with a sand or silt content, may show less accurate results. Deviation to standard procedure - Polythene bags are not used from weighing filter papers.

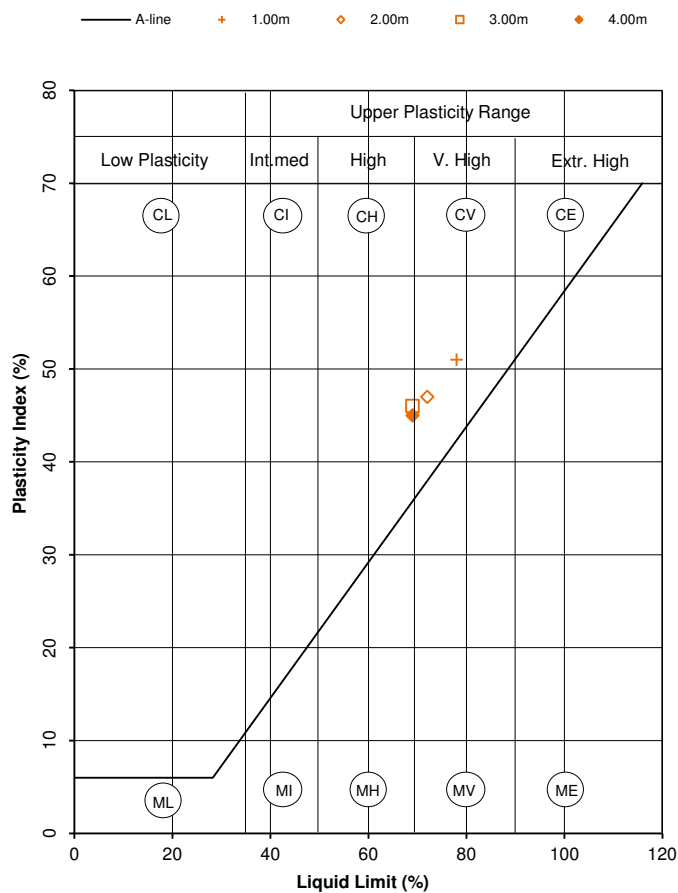
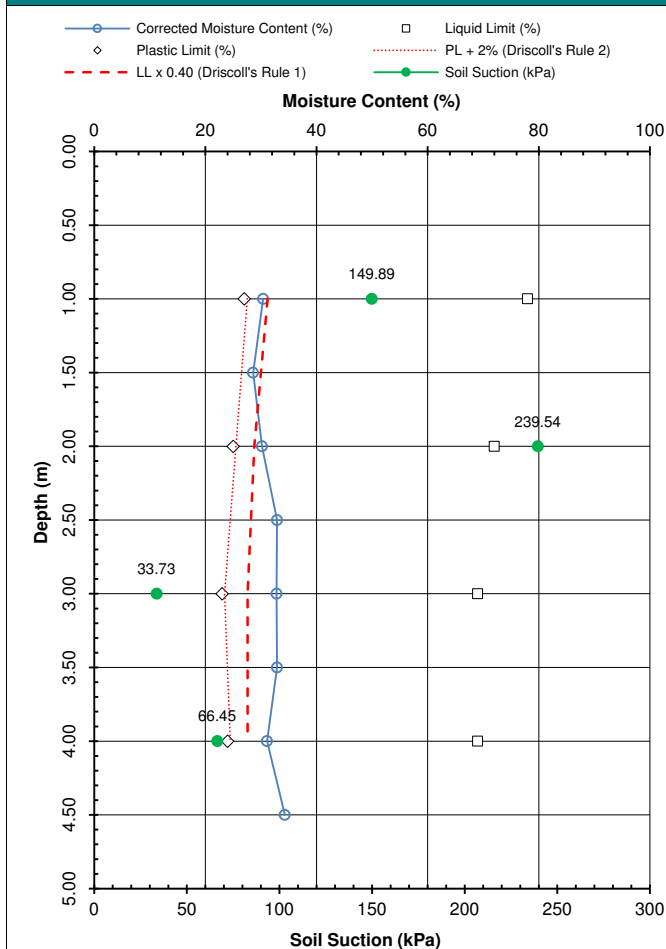
Property Address:	5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ
Client Claim Ref:	SU2207095

[illegible]

Comments:	Unable to perform Soil Suction on BH1 @ 4.00m as there wasn't enough sample
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☒ Ted Smith (Laboratory Technician)
☐ Benjamin Brocklebank (Laboratory Technician)

Property Address:	5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ
Client Claim Ref:	SU2207095

[illegible]

Comments:

Issued by: ☐ Jade McLellan (Laboratory Manager)
☐ Isabella Acerbis (Laboratory Supervisor)

☒ Ted Smith (Laboratory Technician)
☐ Benjamin Brocklebank (Laboratory Technician)



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Section: 1
FSI Ref: 26254

HEAVE CALCULATION REPORT

Property Address: 5 Clausentum Close, Chandlers Ford, Hampshire, SO53 2AQ
Client Claim Ref: SU2207095 **Survey date:** 11/04/2023 **Operative:** SE1

Heave Calculation

In accordance with your instructions we visited the above site on 11th April 2023 in order to examine the subsoil conditions, and we have used these findings to provide information on potential heave that might occur following tree removal in a desiccated soil profile.

Selected samples were tested in accordance with BS1377, method of tests for soil for Civil Engineering purposes: 1990. Samples were tested for their full moisture content profile, with selected samples tested for the Atterberg limits. Selected samples were also tested in the laboratory for filter paper method testing for soil suction. All laboratory results can be found within Appendix 3.

A normal undesiccated soil profile will show a linear trend, with an increase in suction with depth. A desiccated soil will show a clear bulge effect with the soil suction increasing to a certain depth before returning back to a stable increase of suction with depth.

Sample suction profiles can be used to estimate the amount of ground heave that might occur following tree removal in a desiccated soil profile. The heave prediction is normally based on the soil suction profile compared to a control borehole. However, it is possible to determine heave potential using an estimated equilibrium line (Ko2.5). This is based on a high plasticity London Clay; therefore, different stratas may give inaccurate results.

Other factors used in this equation are plasticity index, layer thickness and the insitu effective stress. We would note that results obtained are only estimates and should only be used to obtain an approximate magnitude of any potential heave.

The calculated heave potential for the borehole using the control borehole is:

BH1	Depth (m)	Heave potential (mm)	Layer Heave (mm)
BH1	1.0	-53	-34
BH1	2.0	-19	-19
BH1	3.0	0	0

NB: The results shown in the tables are cumulative

The comments and opinions expressed within this report are based on the conditions encountered and on the subsequent laboratory testing. Therefore, it is possible that some special conditions prevailing on site have not been taken into account.

FASTRACK SITE INVESTIGATIONS Ltd

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ROOT IDENTIFICATION

5 Claustenum Close

Client Reference: 26254
Report Date: 27 April 2023
Our Ref: R52481

Sub Sample	Species Identified	Root Diameter	Starch
BH1:			
FL	either <i>Quercus</i> spp. or <i>Castanea</i> spp.	1	<1 mm Low

Comments:

1 - Plus 2 others the same.

Quercus spp. are oaks. *Castanea* spp. include sweet chestnut.

Signed: G S Turner

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.





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PHOTOS

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Photo 1 (Showing buired MH location within conservatory)



Photo 2 (Showing neighbours MH cover)