

# SOIL ANALYSIS

## for Subsidence Management Services

### 16 Goldhurst Terrace, London, NW6 3HU

Client: Subsidence Management Services  
Client Contact: Vicki Baxter  
Claim Number: C017106730  
Policy Holder: Nainesh Jain  
Report Date: 30 August 2017  
Our Ref: C11427S34832  
Laboratory Ref: L12701

Compiled By:   
Checked By: 

Date samples received: 14<sup>th</sup> August 2017

Moisture Content Test Date: 16<sup>th</sup> August 2017

Atterberg Limits Test Date: 25<sup>th</sup> August 2017

Oedometer Test Date: 29<sup>th</sup> August 2017

**Note**

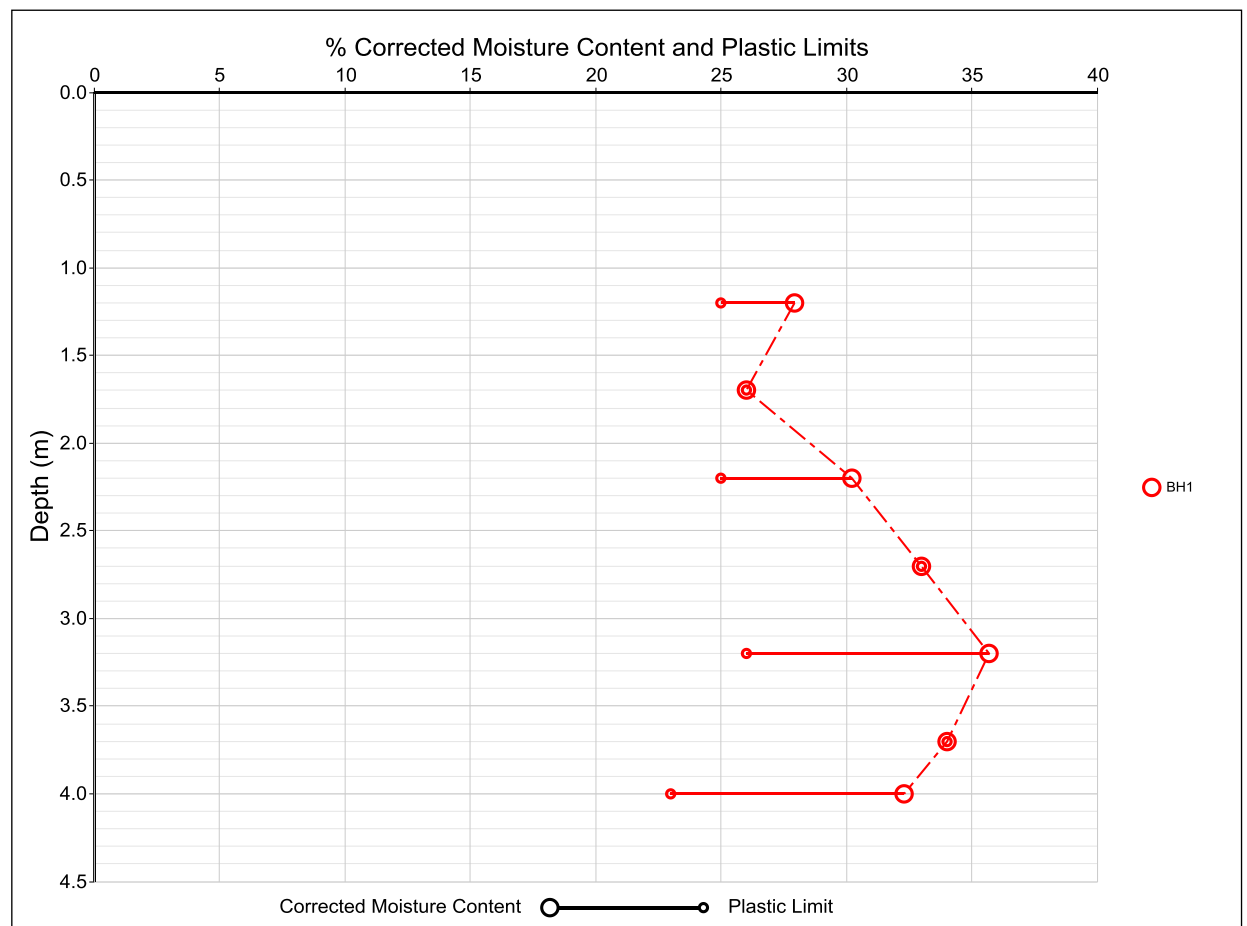
Where appropriate moisture contents have been corrected to demonstrate the equivalent moisture content following the sample being passed through a .425 mm sieve for comparison with the Liquid & Plastic Limit. Where this is not available, uncorrected moisture contents have been used in the graph on the following page.

**Deviations to testing schedule:**

All testing has been undertaken in line with the soils testing schedule provided

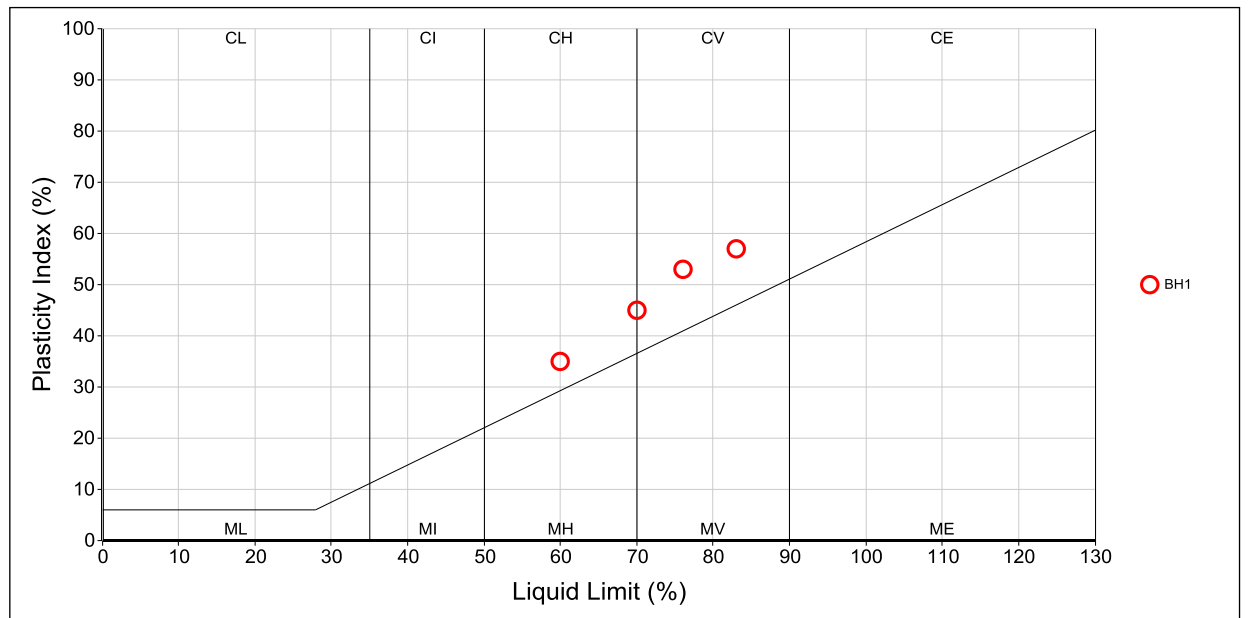
Lab Ref	Depth (m)	MC (%)	Corr MC (%)	LL (%)	PL (%)	PI (%)	% Passing .425mm
Samples from BH1							
001	1.20	26	28	70	25	45	93
002	1.70	26					
003	2.20	29	30	60	25	35	96
004	2.70	33					
005	3.20	35	36	83	26	57	98
006	3.70	34					
007	4.00	32	32	76	23	53	99

**Corrected Moisture Content and Plastic Limits Graph**

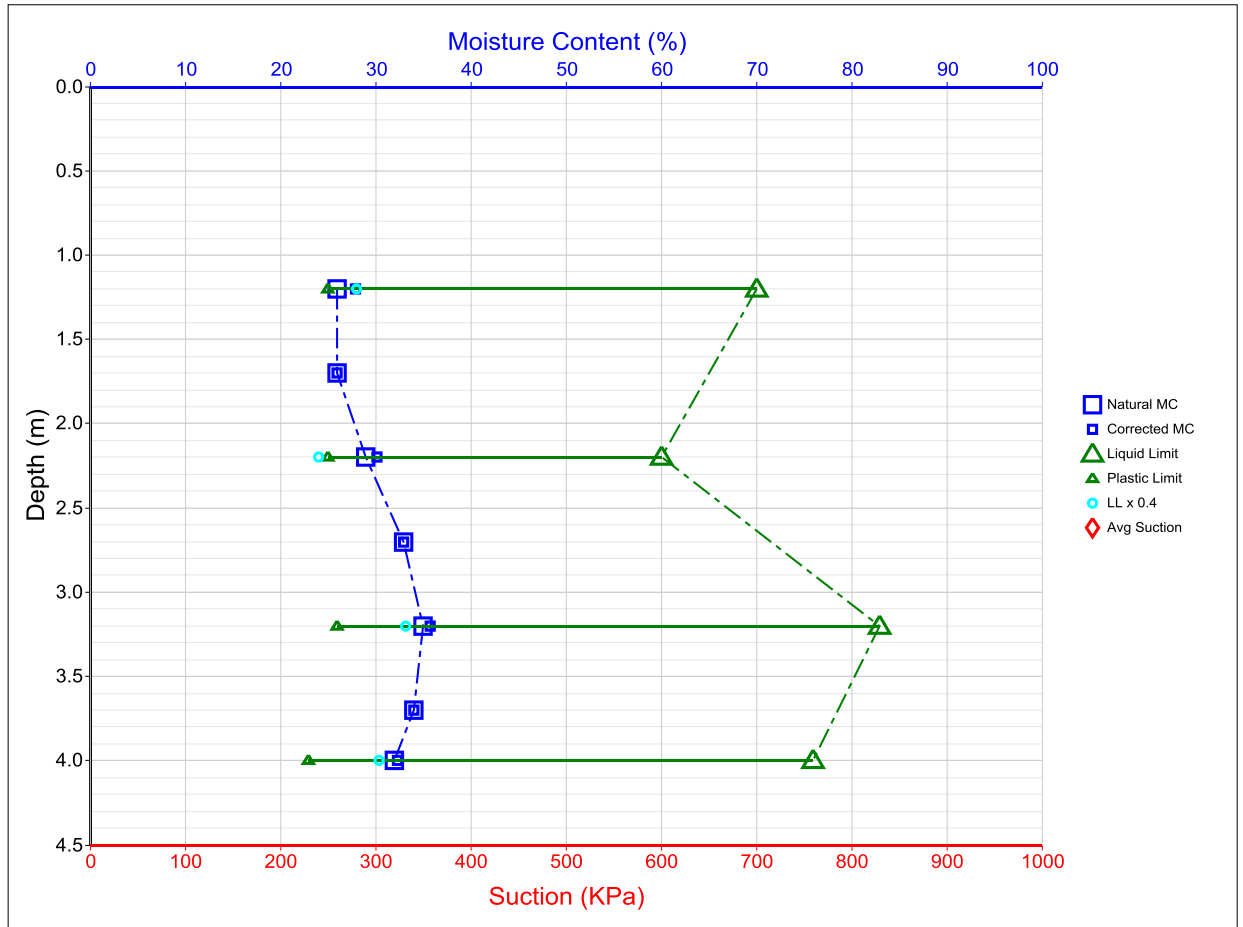


Lab Ref	Depth (m)	Description	BS:5930	NHBC Chapter 4.2
Samples from BH1				
001	1.20	Soft to firm brown slightly sandy slightly gravelly CLAY with rare brick fragments. Gravel is fine and medium.	CH	High
002	1.70	Firm brown slightly sandy CLAY with rare gravel and brick fragments. Gravel is fine and medium.		
003	2.20	Soft to firm brown/orange-brown veined slightly sandy CLAY with rare gravel and charcoal. Gravel is fine and medium.	CH	Medium
004	2.70	Soft to firm brown/orange-brown veined slightly sandy CLAY with rare gravel and charcoal. Gravel is fine and medium.		
005	3.20	Soft brown CLAY with rare gravel and sand. Gravel is fine	CV	High
006	3.70	Soft brown CLAY with rare gravel and sand. Gravel is fine		
007	4.00	Soft to firm brown/grey veined CLAY with rare gravel and sand. Gravel is fine	CV	High

### Plasticity Chart for Casagrande Classification



### BH1 Combined Graph

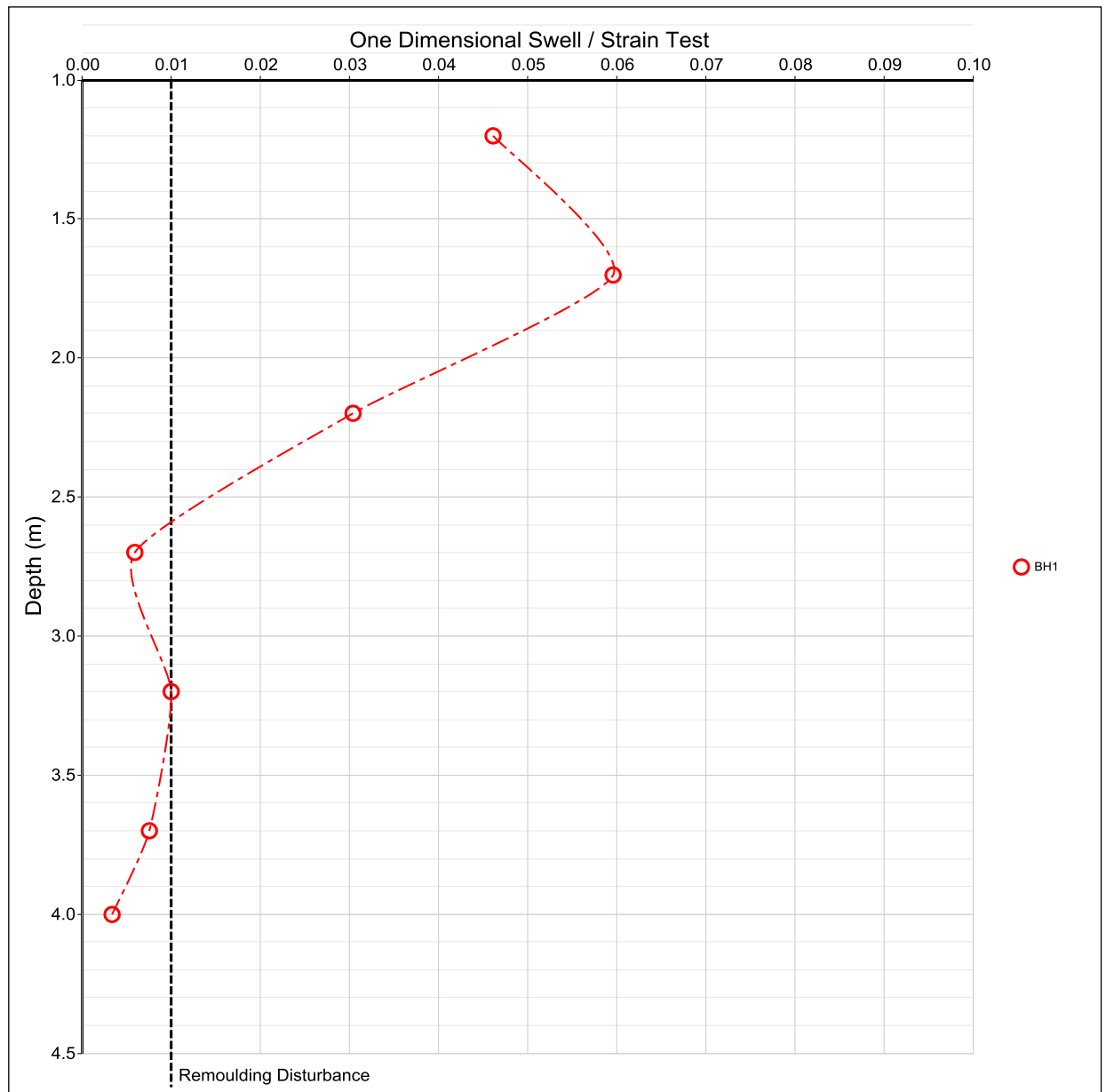


## Summary of Oedometer Testing

Lab Ref	Depth (m)	Strain	Dd (mm)	Remarks
Samples from BH1				
001	1.20	0.0462	27.7	
002	1.70	0.0596	14.9	
003	2.20	0.0305	7.6	
004	2.70	0.0060	1.5	
005	3.20	0.0101	2.5	
006	3.70	0.0076	1.9	
007	4.00	0.0034	0.5	

**BH1 Dd Total:** 56.7mm

## Oedometer Strain



### Notes relating to soils testing

Unless otherwise stated, all soils testing was undertaken at Environmental Services' soils laboratory at unit 10H Maybrook Business Park, B76 1AL.

Soil samples have been prepared in accordance with BS1377:Part 1: 2016 Section 7

Descriptions of soil samples within the laboratory have been undertaken generally in accordance with BS5930:2015

Following the issue of this soil analysis report, samples will be retained for at least 28 days should additional testing, or referencing, be required. It should be noted that any tests undertaken on soils retained subsequent to the issue of this report may not give an accurate indication of the in-situ conditions of the sample.

Water Content Tests are undertaken in accordance with ISO 17892:Part 1:2014

The Liquid Limit test is undertaken in accordance with BS1377:Part 2:1990 Section 4.4

The Plastic Limit test and the determination of the Plasticity Index is undertaken in accordance with BS1377:Part 2:1990 Section 5

The Oedometer swell/strain test method is based upon BS1377:Part 5:1990 Section 4.4 'Determination of swelling and collapse characteristics' and unless otherwise stated is undertaken on a remoulded, disturbed, sample.

The Oedometer Swell/Strain Test is undertaken in a controlled environment within a temperature range of 16°C and 24°C

The uncertainty of measurement for the displacement transducers is within 0.002mm, typically 0.1% of the range of consolidation and swell of a sample, and the deformation of the consolidation apparatus typically at around 0.15% of the consolidation of a sample and adding these to other human factors the accuracy of the quoted strain measurement in an individual test is deemed to be within +/- 2.5%.

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### References and Interpretation

The following provides a brief interpretation of the test results by comparison of the results to published classifications. The Atterberg Limit test may be used to classify the plasticity of soils; the plasticity classes defined in BS5930:1999 "Code of Practice for Site Investigations" are as follows.

CL (ML)	CLAY and CLAY/SILT of Low plasticity
CI (MI)	CLAY and CLAY/SILT of Intermediate plasticity
CH (MH)	CLAY and CLAY/SILT of High plasticity
CV (MV)	CLAY and CLAY/SILT of Very High plasticity
CE (ME)	CLAY and CLAY/SILT of Extremely High plasticity
O	The letter O is added to prefixes to symbolise a significant proportion of organic matter.
NP	Non-plastic

The Plasticity Index (PI) Result obtained from the Atterberg Limit tests may also be used to classify the potential for volume change of fine soils, in accordance with the National House Building Council's standards - Chapter 4.2 (2003) "Building Near Trees", as summarised below.

Modified PI < 10	Non Classified.
Modified PI = 10 to <20	Low volume change potential.
Modified PI = 20 to <40	Medium volume change potential.
Modified PI = 40 or greater	High volume change potential.

The 2003 edition of Chapter 4.2 also permits use of the Plasticity Index without modification. The classifications for this are grouped by soil type (soils with similar visual soils description and using unmodified Plasticity Indices.