20118.195

LABORATORY REPORT

Client's Name:

Address: 2 Lambert Fold,
Dodsworth,
Barnsley,
S75 3SX

Report Date: 27-Feb-12
Job No.: **53174** (If _R suffix appears after Job No., this indicates Revision Number)
Insurance Co.: Geoinvestigate Limited
Claim Ref. No.:

Project Engineer: Jamie Hogg
From: Geoinvestigate Limited
Engineers Ref.: G12005

Contents: Swell Strain Tests
Soil Descriptions

Address: Mat Lab Ltd
The Dell
Bickenhill Lane
Catherine-De-Barnes
Solihull B92 0DE
E-mail: post@mat-lab.com

Phone No.: 0121 704 3339 **Fax No.:** 0121 704 4675

Authorised By:
J Crooks - Reports Technician
Date Authorised: 27/02/2012

OEDOMETER RESULTS DATA

MAT LAB LIMITED

Swell/Strain Test Method **(UKAS accredited)** **Test Date: 13-Feb-12**

The In-house Procedure MTLB002 is based on "Determination of swelling and collapse characteristics" British Standards 1377:Part 5:1990 Section 4.4 , carried out on a disturbed, remoulded sample.
Test specimen has cylindrical dimensions 50mm (diameter) by 17mm (height).
Prior to the introduction of distilled water the specimen is reconsolidated to the approximate in situ vertical effective stress, calculated from the average sample extraction depth using the assumptions below.
Laboratory tests are conducted in a controlled environment within a temperature range of 16°C to 24°C.

Assumptions

Soil Bulk Density (Moist Unit Weight) is equal to 2039 kg / m3. Depth to water table has been assumed as to be below sampling depth. Any possible surcharge stresses due to construction are not considered.

Predicted Free Surface Heave Calculation **(Not UKAS accredited)**

An approximated value of 0.010 strain is deducted from the measured oedometer strain to account for remoulding of the sample. Therefore strain in excess of Remoulding Disturbance Line (see Results Chart) is extrapolated for calculation of Predicted Heave per incremental layer displayed in the following table(s), in column labelled "Dd mm". A Shrinkage factor (Sf) of 2 is also applied to each heave value. Heave values per layer are summed as a total for each Borehole (in mm), and then displayed as a range in (in cm).
Predicted Free Surface Heave is calculated over a range defined by the sample depths tested, but not shallower than 0.2m below ground level, the assumed depth of topsoil. Heave inadvertently measured above foundation depth may be discounted by deducting the relevant layer value from the Borehole total.
Please note that the swell predicted is that expected of the ground if it were allowed to fully re-hydrate and come to equilibrium. This is possibly greater than the expected annual variation; due to reasons such as persistent annual deficits, changes in vegetation and annual climatic conditions, amongst others. The predicted total swell can take many years to fully propagate and in some cases this can take up to 25 years, though usually at least 70% happens within the first few years.

Uncertainty of Measurement

The accuracy of the quoted strain measurement in an individual test is deemed to be within +/- 2.5%.
The variation of repeated results on the same sample is determined by the uniformity of sample.
Due to variability in strata changes and sample uniformity, it is more appropriate to consider the Heave Potential by the quoted range (in cm) rather than the precise total (in mm).

Further information relating to Swell/Strain Test is available on the MAT LAB Website:- www.mat-lab.com

MAT LAB LIMITED

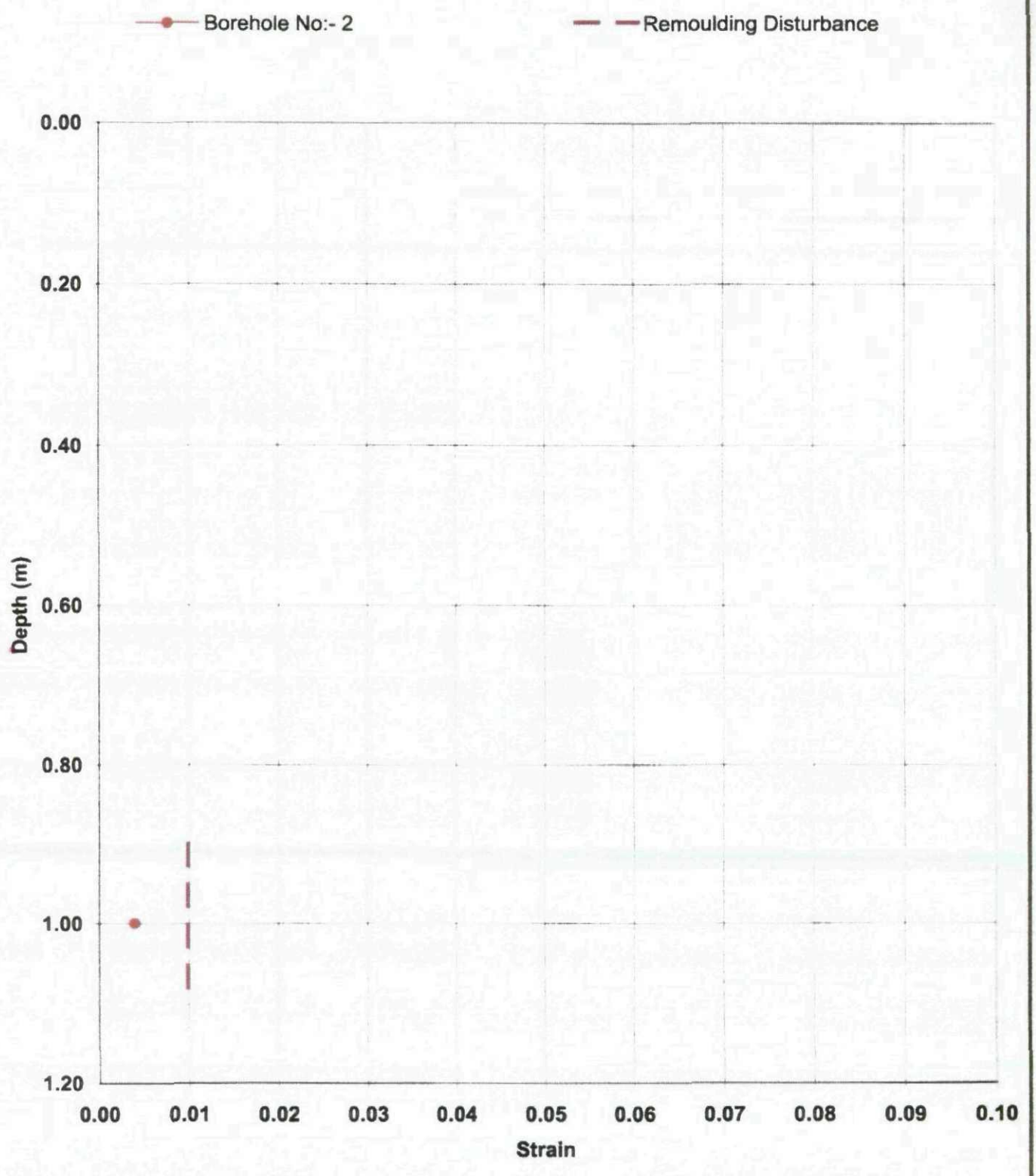
OEDOMETER RESULTS DATA

MAT LAB LIMITED

Borehole No:- 2			
Location	N/A		
Depth(m)	Specimen No. & Comments	STRAIN	Dd (mm)
1	Specimen No. 1A	0.0040	0.0
Total Column Dd=0mm Therefore Free Surface Heave Potential Over B/H Depth Is About 0cm to 2cm.			

OEDOMETER RESULTS CHART

Oedometer Strains



Address: **2 Lambert Fold, Dodsworth, Barnsley, S75 3SX**	Job No. **53174**

MAT LAB LIMITED

SOIL DESCRIPTIONS

MAT LAB LIMITED

B/H No.	Depth (m)	Soil Descriptions *(Laboratory descriptions)*
2	1	Firm light brown/light grey slightly sandy CLAY with rare fine gravel

Address: **2 Lambert Fold, Dodsworth, Barnsley, S75 3SX** | Job No. **53174**