

TERRATEC S.I. Ltd

**CONSULTING CIVIL, STRUCTURAL AND
GEOTECHNICAL ENGINEERS**

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Mr. Hudson & Mr. Merredeth,
Willowbrook Park,
15 The Fairway,
LANCING,
West Sussex,
BN15 8JJ.

28 March 2007.

FSK/KLT/2860.

Dear Sirs,

RE: SITE AT WESTSIDE SUPPLIES, DURBAN ROAD, BOGNOR REGIS.

As instructed we have undertaken a preliminary geotechnical and contamination assessment at the above site, and we present below our findings and conclusions:-

THE SITE

* The records of The British Geological Survey indicate that the site is founded on the Aidingbourne Rife Alluvial Deposits. The records indicate that The Alluvium sits on The Upper Chalk formation.

* Drg. TT/2860/1 shows the location and geology of the site.

* The site at present has a relatively modern office type building in the centre with grass lawns around it.

THE FIELDWORK & TESTING

* In order to investigate the subsoil we sank 3no. boreholes in the locations shown on drg. TT/2860/2.

* We measured the shear strength of the subsoil at frequent intervals using a shear vane tester and a dynamic penetrometer. The results are given on the borehole logs.

* General samples of the subsoil were recovered at various depths and sealed in plastic bags for later examination and testing.

* All of the general samples were tested for moisture content, and selected samples were tested for index properties, sulphate content, and pH.

* The site, and all of the samples, were carefully examined for any signs of contamination.

THE FINDINGS.

* All of the boreholes encountered similar subsoil conditions consisting generally of a stiff silty/fine sandy clay down to about 1.80m. below ground level. This was the dessicated crust of The Alluvium. Below this level The Alluvium changed to a medium loose grey/black silt. At about 2.8m. deep we encountered a dense to very dense strata that was possibly the top of The Upper Chalk.

* In borehole no.2 we encountered a soft clay fill material at the surface down to 1.10m. deep.

* We found groundwater seepages in all boreholes at the time of our fieldwork, but this could change at other times.

* All of the moisture content results were about normal for these types of strata in these kinds of locations.

* The index test results show that the subsoil will have a low to medium susceptibility to volume change with change in moisture content.

* The sulphate results were all fairly low, and the pH values were slightly acidic.

* No signs of any contamination were seen on site, or in the subsoil samples.

DISCUSSION.

* We understand that it is proposed to build housing on this site.

* If the housing is only two storey high it might be possible to use reinforced trench fill footings founded in the dessicated crust. The houses would need to be timber framed to keep the loading as low as possible.

* Depending on the configuration of the housing it is possible that reinforced raft foundations could be used.

* Pad and beam are another possibility, with the pads taken down to about 2.8m. deep.

* Piled foundations with ground beams would be the most certain, but the most expensive. The site on the other side of the road, currently being developed, is sitting on piled foundations.

* The type of foundations used, will probably dictate the choice of ground floor.

* Deep excavations may well not stand up very well even in the short term, and some temporary support will probably be required. Wet weather will adversely affect the stability. Men should not be sent down unsupported excavations unless the site foreman considers it safe to do so.

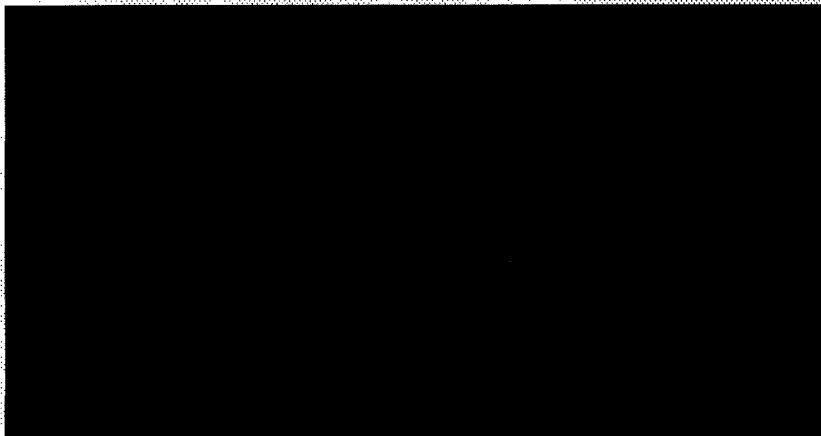
* The test results show that no special precautions need be taken against sulphate attack on buried concrete at this site.

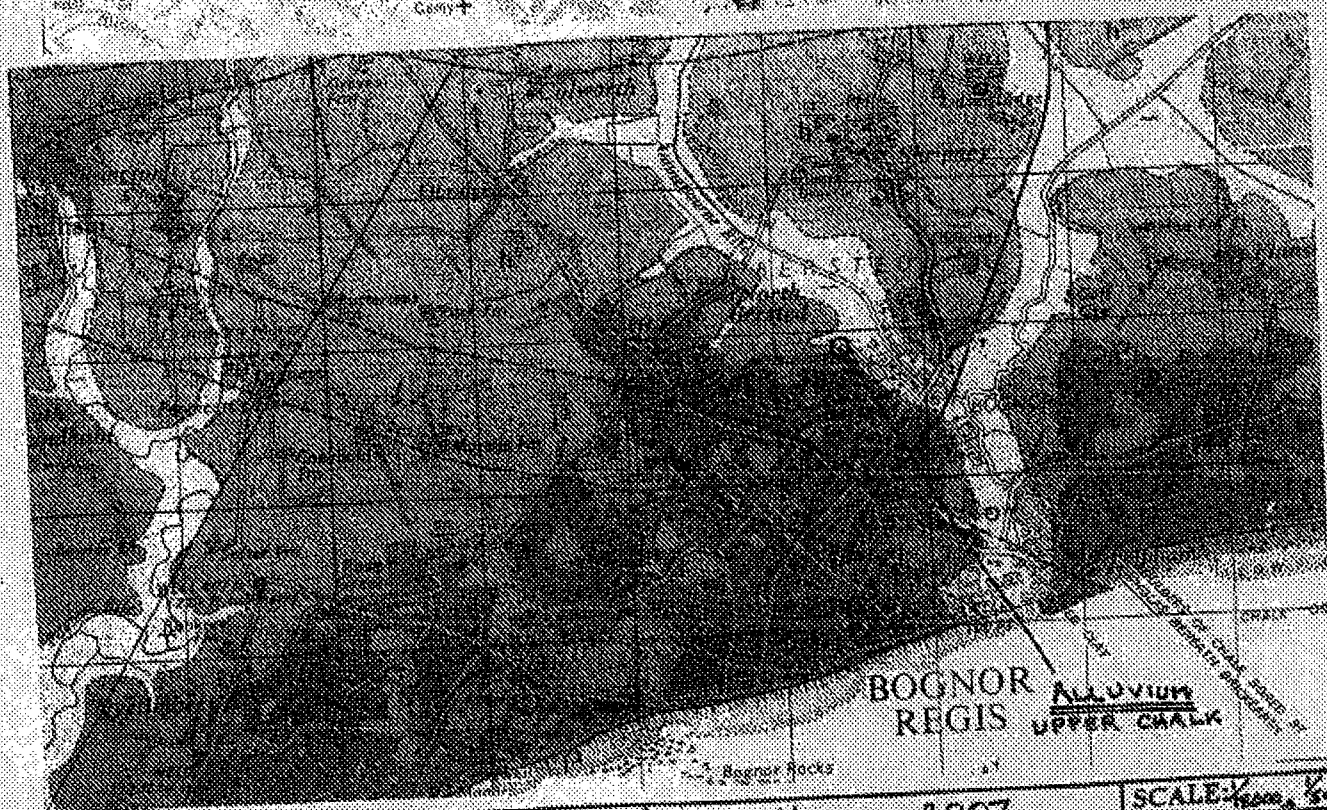
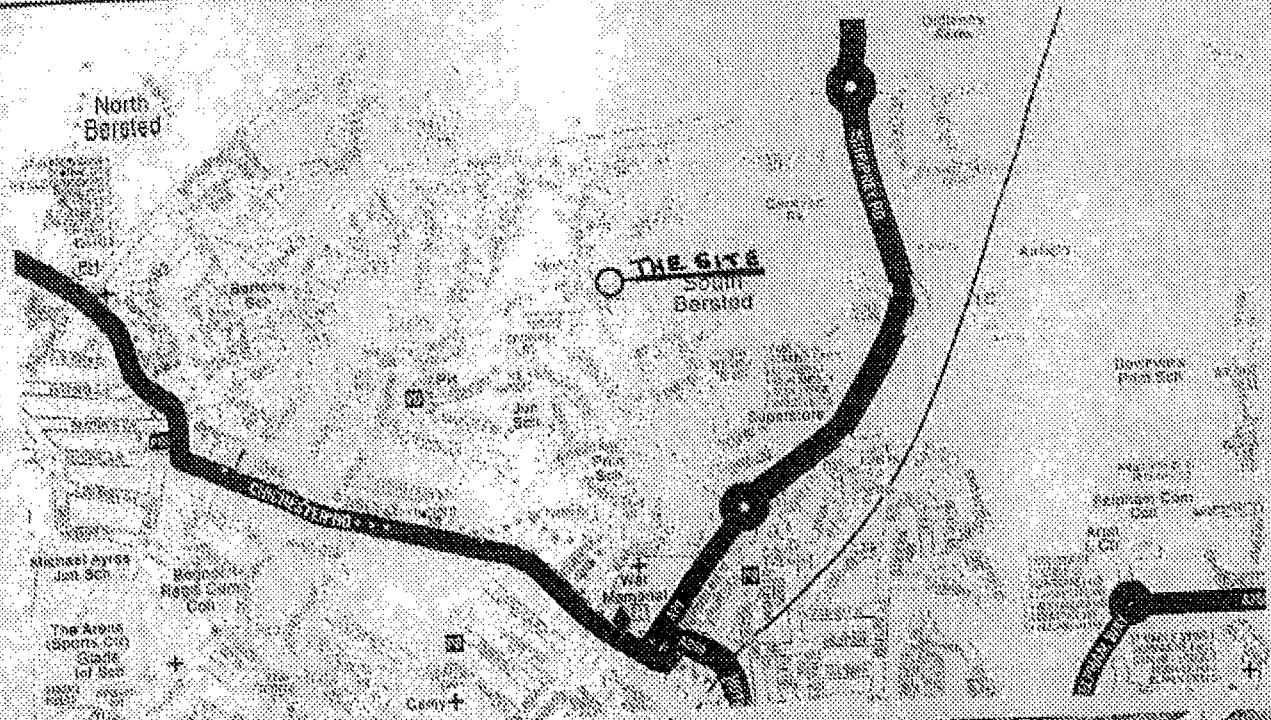
* Plate 14 from BRE.211 shows that a geological assessment is required to establish if Radon Gas emissions may occur at this site. As a previous lecturer in geology and soil mechanics for The Crown Agents the writer has carried out an assessment and come to the conclusion that Radon emissions will not occur at this site. Therefore no gas membrane will be required.

* We did not discover any contamination on this site using visual and olfactory methods.

* When the scheme has been firmed up, a further geotechnical investigation should be undertaken to provide definite foundation design parameters.

* If you have any questions, please contact me.





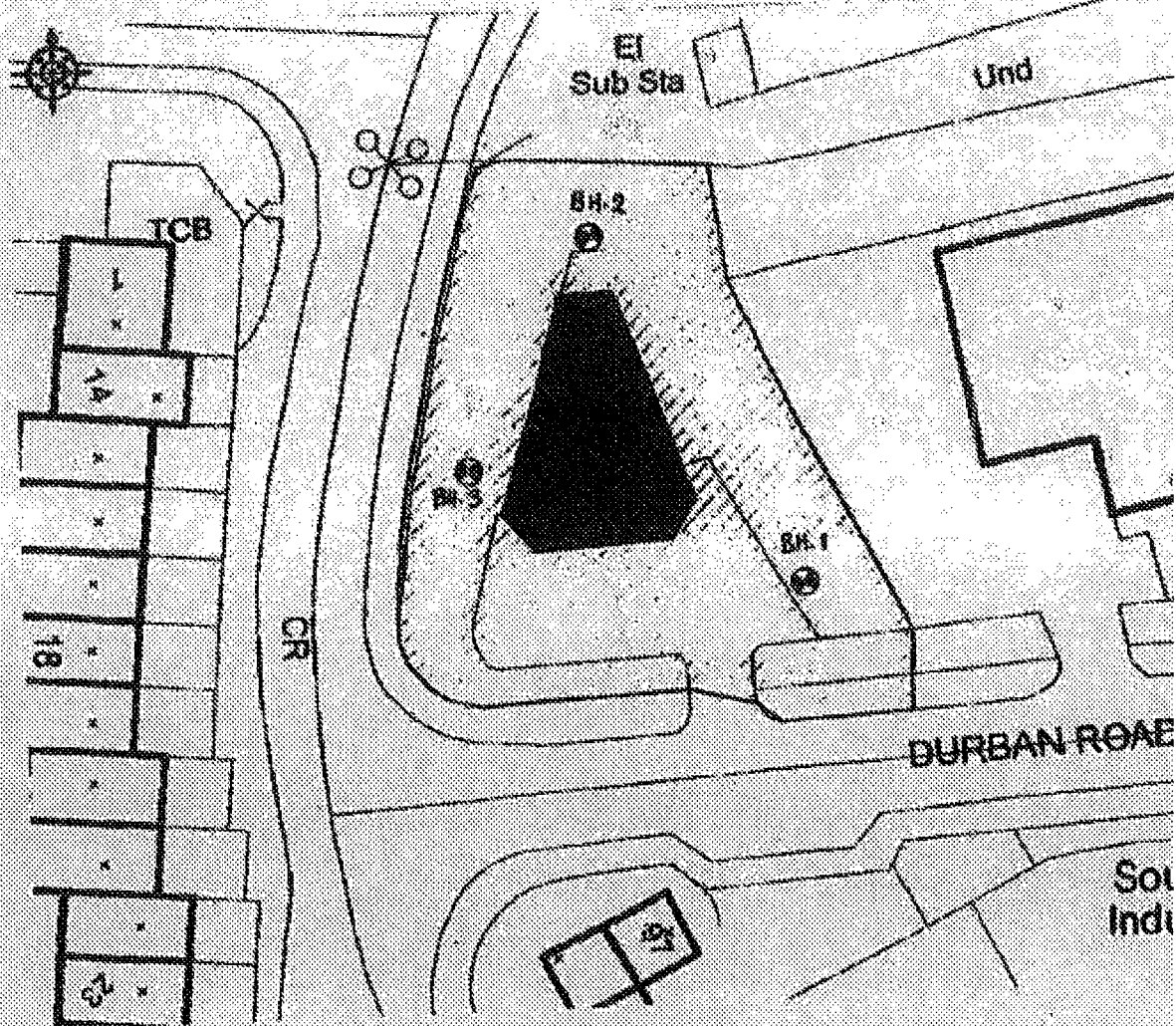
CLIENT: <u>P. HUDSON & P. MERREDETH.</u>	DATE: <u>MARCH 2007</u>	SCALE: <u>1:2500</u>
SITE: <u>WESTSIDE SUPPLIES, DURBAN RD, BOGNOR</u>	DRAWING NO. <u>TT/2260/1</u>	COPYRIGHT:
SITE LOCATION & GEOLOGY.		

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F.S. KEYFORD
CHIEF MINT. MICE

MOBILE: [REDACTED]

CLIENT P. HUDSON & P. HEAREDETH

DRAWING NUMBER TT/2860/2

TITLE WESTSIDE SUPPLIES, DURBAN RD.,
RADIOLOG REVIS. BOREHOLE LOCATIONS

DATE MARCH 2

SCALE UNKNOWN

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BOREHOLE RECORD							SCHEME WESTSIDE SUPPLIES, DURBAN ROAD		BOREHOLE 1				
TERRATEC SERVICES Consulting Civil, Structural and Geotechnical Engineers							CLIENT P. HUSSEIN & P. MERREDETH		Grid Ref				
									Sheet 1 of 1				
SAMPLING			STRATA				PROPERTIES						
Depth	Type	No	Ref	Depth	Level	Thick-ness	Legend	Description	γ_b Mg/m ³	mo %	N	C R/m	
				0-00		0-15	VS	<u>TOP SOIL.</u>					
				0-15									
0-90	V	1				1-65		Stiff mid brown silty / fine sandy <u>CLAY.</u>	21-76			128 27	
1-10	B	2										151 20	
1-30	V	3										180 21	
1-30	V	4										180 21	
1-50	V	5										112 21	
1-50	B	6							21-69			152 20	
1-70	V	7										152 20	
1-90	V	8		1-80				Medium loose grey / black clayey <u>SILT.</u>	23-27			150 22	
2-10	V	9				1-85						150 21	
2-30	B	10										150 17	
2-30	M	11										150 20	
2-45	M	12										100 50	
2-60	M	13											
2-75	M	14		2-85									
2-90	M	15							18-78			62 50	
2-90	B	16										58 50	
3-40	N	17				1-15		Very dense, possibly <u>UPPER</u> <u>CHALK.</u>					
4-00	M	18		4-00									
							BOBH						
DRILLING							GROUNDWATER						
Type	From	To	Size	Drill Fluid	Struck	Behaviour	Sealed	Date	Time	Notes	Depth	W	
MACK. PROBE	0	4-00	85	None	Yes	Seepages	No						
REMARKS							Start Date 15-03-97 Finish Date 15-03-97 Logged by F.S.K.						

BOREHOLE RECORD										SCHEME WESTSIDE SUPPLIES, DURBAN ROAD		BOREHOLE 2	
TERRATEC SERVICES				Consulting Civil, Structural and Geotechnical Engineers				CLIENT P. HUBSON & P. MEERDETER		Grid Ref		Sheet 1 of 1	
SAMPLING				STRATA				PROPERTIES					
Depth	Type	No	Rec	Depth	Level	Thick-ness	Legend	Description	γ _s Mg/m ³	w _t %	N	Q _u kN	
				0.00		0.20		<u>TOP SOIL</u>					
				0.20				Soft to firm <u>FILL MATERIAL</u> consisting of silty clay.					
0.80	V	1				0.90							
1.00	V	3											
1.20	V	4		1.10				Stiff mid brown silty / fine sandy <u>CLAY</u> .					
1.40	V	5				0.80							
1.60	V	7											
1.80	V	8											
2.00	V	9		1.90				Medium loose grey / black clayey <u>SILT</u> .					
2.20	V	11				0.70							
2.50	M	12											
2.65	M	13		2.60				Dense to very dense possibly <u>UPPER CHALK</u> .					
	B	14				0.60							
3.20	M	15		3.20									
							EOBH						

DRILLING						GROUNDWATER							
Type	From	To	Size	Drill Fluid	Struck	Behaviour	Sealed	Date	Time	Depth			W
										Hole	Casing		
MACH PROBE	0	3.20	55	None	Yes	Seepages	No						

REMARKS	Start Date 15-03-07
	Finish Date 15-03-07
	Logged by F. S. L.

BOREHOLE RECORD					Consulting Civil, Structural and Geotechnical Engineers					SCHEME WESTSIDE SUPPLIES, DURBAN ROAD.					BOREHOLE 3				
TERRATEC SERVICES										CLIENT P. HUSSEIN & P. MERREDETH.					Grid Ref				
															Sheet 1 of 1				
SAMPLING				STRATA								PROPERTIES							
Depth	Type	No	Rec	Depth	Level	Thick-ness	Legend	Description				γ _b Mg/m ³	m/c %	N	C KN				
				0.00		0.15		<u>TOP SOIL.</u>											
				0.15		0.45		Stiff mid brown silty/fine sandy <u>CLAY.</u>											
				0.60				Firm mid brown silty/sandy <u>CLAY.</u>											
0.80	V	1																	
1.00	V	2																	
	B	3																	
1.20	V	4				1.20													
1.40	V	5																	
1.60	V	6																	
	B	7																	
1.80	V	8		1.80															
2.00	V	9						Medium loose grey / black clayey <u>SILT.</u>											
2.20	V	10				1.05													
	B	11																	
2.50	H	12																	
2.90	H	13		2.85		0.35		Dense to very dense, possibly <u>UPPER CHALK.</u>											
	B	14																	
3.20	H	15		3.20															
							EOBH												
DRILLING								GROUNDWATER											
Type	From	To	Size	Drill Fluid	Struck	Behaviour	Sealed	Date	Time	Depth	Hole	Casing							
MACH. PROBE	0	3.20	95	None	Yes	Seepages	No												
REMARKS										Start Date 15-02-00									
										Finish Date 15-02-00									
										Logged by F.S.W.									

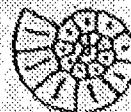
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SUMMARY LABORATORY TEST RESULTS GENERAL SOIL TESTS

SITE **WESTSIDE SUPPLIES, BOGNOR.**

CLIENT

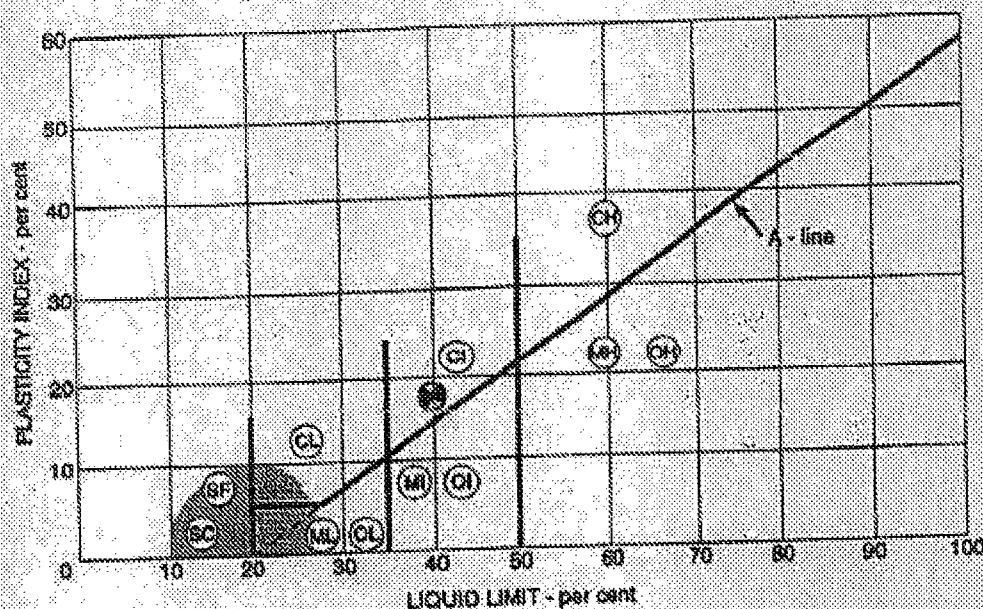
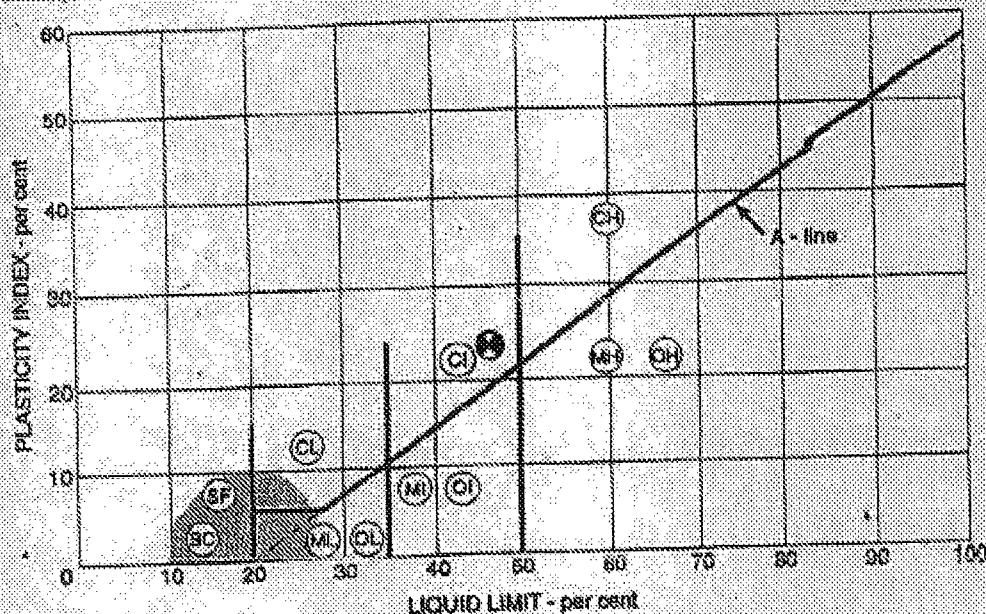
DATE **MARCH 2007**



REF

Borehole / Sample	Depth m	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	Light, Heavy, Vibrating Compaction			C.B.R. Test				Vane Test kN/m ²
						Bulk Density Mg/m ³	Optimum m/c %	Max Dry Density	Bulk Density Mg/m ³	Optimum m/c %	Dry Density Mg/m ³	C.B.R. Value %	
1/2	0.90	21.76	46	33	13								
1/6	1.50	21.63											
1/10	2.10	23.27	40	22	18								
1/16	2.90	18.76											
2/2	0.80	23.27											
2/6	1.40	21.68	46	25	21								
2/10	2.00	23.12	41	25	16								
2/14	2.65	13.76											
3/3	1.00	22.73	48	26	22								
3/7	1.60	22.51											
3/11	2.20	23.46	41	22	19								
3/14	2.90	13.84											

REMARKS



MAIN SOIL TYPE

Coarse-grained soils

Fine-grained soils

Fibrous soils

gravel

sand

silt

clay

organic silts and clays

peat

PREFIX

G

S

M

C

O

Pt

CLIENT P. HUDSON & P. HERREDETH

DATE MARCH 2007,

REF: 2860

SITE

CLASSIFICATION TESTS
TO
BS. 1577

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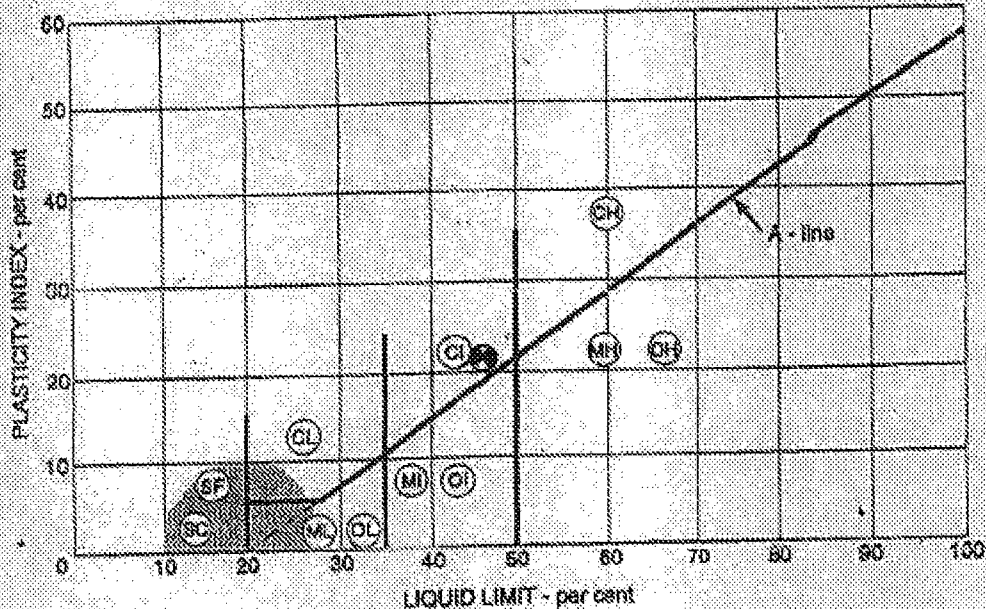
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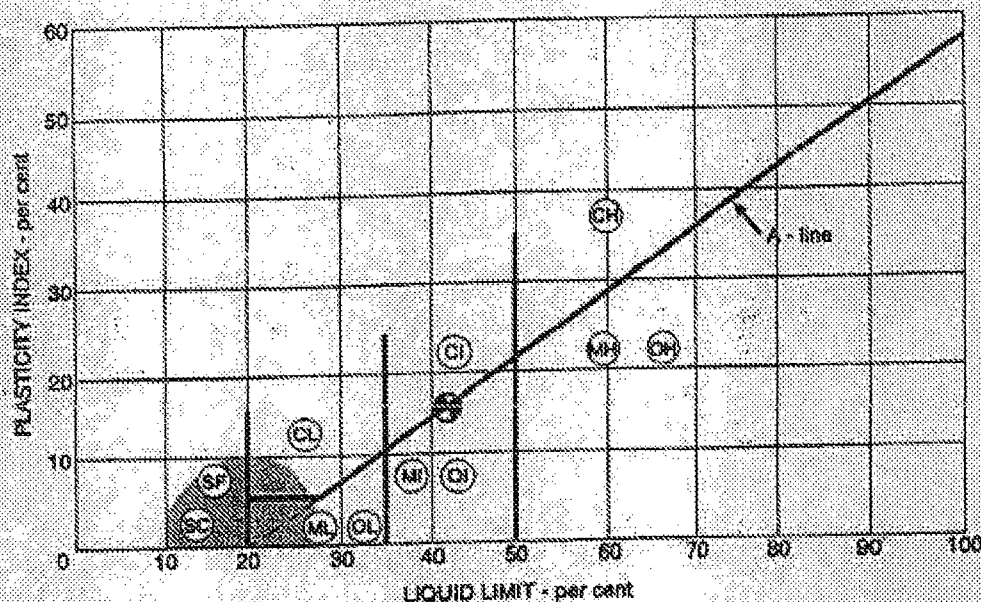
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ASSOCIATE

HOME LODGE, PIDDINGHOE MEAD, LEWES ROAD, NEWHAVEN, EAST SUSSEX, BN9 9RN



SAMPLE: BH. 2/6

DESCRIPTION Silty/Fine Sand
CLAY.



SAMPLE: BH. 2/10

DESCRIPTION Clayey
SILT.

MAIN SOIL TYPE

Coarse-grained soils	gravel
	sand
	silt
Fine-grained soils	clay
	organic silts and clays
Fibrous soils	peat

PREFIX

G
S
M
C
O
P

CLIENT P. HUDSON A P. HERREDETH	DATE MARCH 2007	REF: 2860
SITE	CLASSIFICATION TESTS TO BS. 1377	© F.S.K. COPYRIGHT

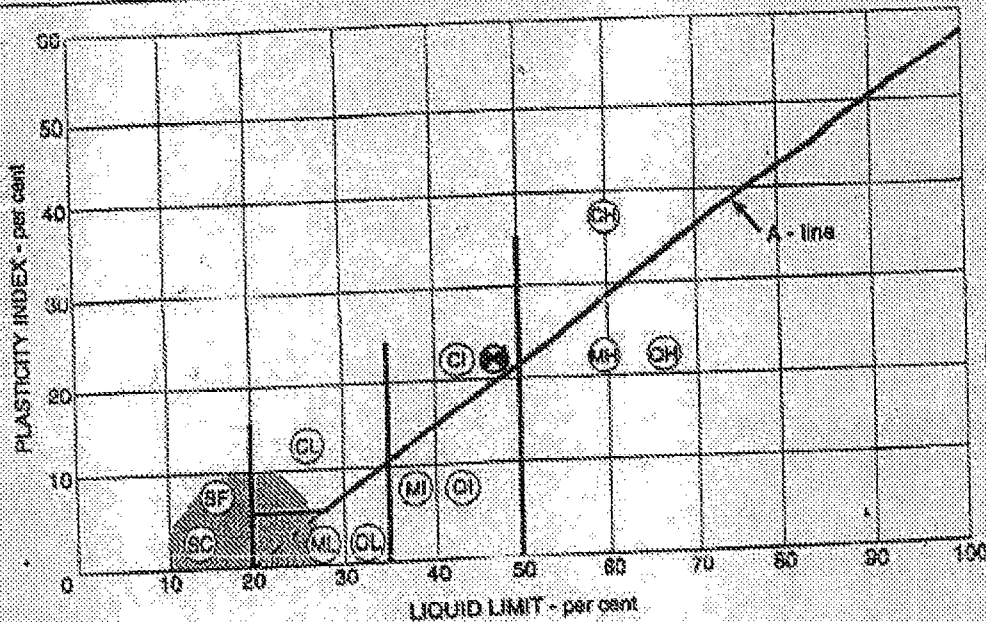
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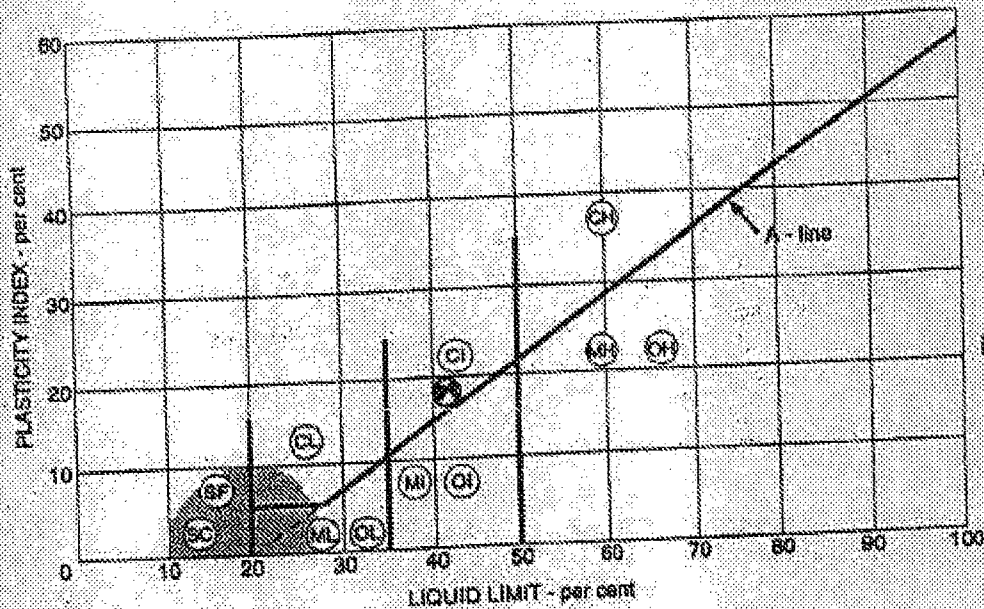
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ASSOCIATE

HOME LODGE, PIDDINGHOE MEAD, LEWES ROAD, NEWHAVEN, EAST SUSSEX, BN9 9BN



SAMPLE: BH. 3/3

DESCRIPTION Silty / Fine Sand
CLAY



SAMPLE: BH. 3/11

DESCRIPTION Clayey SILT

MAIN SOIL TYPE

Coarse-grained soils

gravel
sand

Fine-grained soils

silt
clay
organic silts and clays

Fibrous soils

peat

PREFIX

G
S
M
C
O
P

CLIENT P. HUDSON & P. HERREDETH

DATE MARCH 2007

REF: 2860

SITE

CLASSIFICATION TESTS
TO
BS 1377

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