

LABORATORY REPORT CERTIFICATE

ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		3
2	Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	1
2	Plasticity Index and Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	2
3	Determination of Particle Density	Yes	BS 1377 Part 2 1990	1
4	Particle Size Distribution Sieving	Yes	BS 1377 Part 2 1990	28
4	Particle Size Distribution Sedimentation	No	BS 1377 Part 2 1990	15
5	Determination of Chloride, Sulphate and pH (Tested externally)	No	See DETS certificates	6
6	Determination of Dry Density/Moisture Content Relationship	Yes	BS 1377 Part 4 1990	6
7	Determination of MCV / Moisture Relationship	Yes	BS 1377 Part 4 1990	4
8	Determination of California Bearing Ratio	Yes	BS 1377 Part 4 1990	3
9	Determination of One Dimensional Consolidation Properties	Yes	BS 1377 Part 5 1990	6
10	Undrained Shear Strength in Triaxial Cell without Pore Water Pressure Measurement	Yes	BS 1377 Part 7 1990	1
11	Determination of Moisture Content of Rock	Yes	ISRM 1981	1
12	Determination of Point Load Index	Yes	ISRM 1985	2

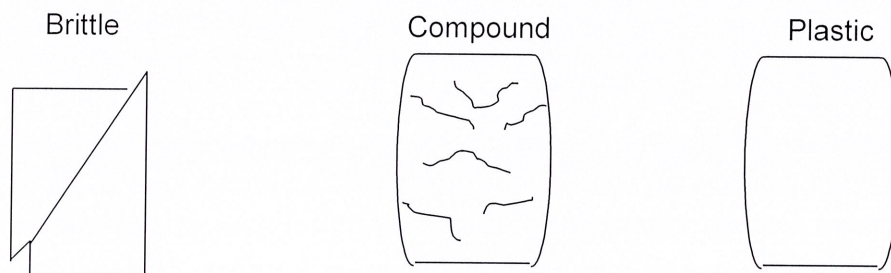
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ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

Br	Brittle	PSD	Particle Size Distribution by sieve analysis
C	Compound	SB	Shear Box
CBR	California Bearing Ratio	SED	Sedimentation Analysis
CDT	Consolidated Drained Triaxial	SO4	Sulphate (total, water extract, groundwater)
CL	Chloride content (water or soil)	CP2	Dry Density/Moisture Content 2.5kg rammer
US	Unsuitable sample for test	CP4	As above using 4.5kg rammer
UUT	Undrained Unconsolidated Triaxial	CPV	As above using vibrating hammer
HSV	Vane Test	CUT	Consolidated Undrained Triaxial
IS	Insufficient sample for test	R	Remoulded
LOI	Loss On Ignition	U	Undisturbed
M	Multi-stage testing	MC	Moisture Content
MCV	Moisture Content Value	PL	Point Load
NAT	Natural preparation method	NMC	Natural (or as received) moisture content
P	Plastic	PFH	Permeability Falling Head Method
OED	Oedometer	PTXL	Permeability in Triaxial Cell
OMC	Optimum Moisture Content	ORG	Organic content
B	Large disturbed (bulk) sample	PD	Particle Density (SG)
J	Small disturbed (jar) sample	PI	Liquid limit, plastic limit and plasticity index

Typical Mode of Failure for Triaxial Testing



Sample Description Sheets





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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m) ID	Description	Laboratory Tests/Remarks
S3_BHA03	0.30 J1	MADE GROUND (Grey sandy gravel including ash).	MC
S3_BHA03	0.30 B2	MADE GROUND (Brown slightly clayey sandy gravel of slag with a high cobble content).	PSD PD US for CP4
S3_BHA03	3.30 J8	MADE GROUND (Dark grey sandy gravel including ash and slag fragments).	MC
S3_BHA03	3.30 B9	MADE GROUND (Dark brown sandy gravel and cobbles including brick fragments).	PSD US for CP4
S3_BHA03	4.80 J10	Brown silty CLAY.	MC
S3_BHA03	4.80 B11	Brown silty CLAY.	PSD SED
S3_BHA03	4.80 ES12	Brown silty CLAY.	CL BRE
S3_BHA03	5.10 J3	Brown sandy slightly gravelly CLAY of low plasticity.	MC PI
S3_BHA03	5.80 B4	Brown slightly sandy slightly gravelly CLAY.	PSD SED
S3_BHA03	6.50 U5	Medium strength laminated brown slightly sandy slightly gravelly CLAY.	OED UUT
S3_BHA03	7.50 B8	Laminated brown CLAY with silt dustings on laminae.	PSD SED
S3_BHA03	8.45 B10	Brown slightly sandy slightly gravelly CLAY.	PSD SED
S3_BHA03	8.50 U11	High strength brown sandy gravelly CLAY.	UUT
S3_BHA03	8.90 J12	Brown sandy slightly gravelly CLAY of low plasticity.	MC PI
S3_BHA03	10.50 J17	Dark grey sandy gravelly CLAY. Gravel of weathered mudstone.	CL BRE
S3_BHA04	0.40 B2	MADE GROUND (Brown very clayey sandy gravel including slag fragments).	PSD
S3_BHA04	1.50 J4	Brown sandy slightly gravelly CLAY.	MC
S3_BHA04	1.50 B5	Grey and brown silty CLAY.	PSD SED CP4 CBR MCV
S3_BHA04	2.00 J2	Laminated brown CLAY of intermediate plasticity with silt dustings on laminae.	MC PI
S3_BHA04	3.00 U4	Low strength brown silty CLAY with silt pockets.	OED UUT
S3_BHA04	3.80 J5	Brown sandy gravelly CLAY.	MC

Contract Title :- Prairie Phase 4	Client :- Tees Valley Combined Authority
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	Signed :- <i>M. Selkirk</i>	Name :- M. SELKIRK	Page 1 of 3	
	Date of issue :- 17/11/2021	Certificate No :- SD/4355/1	AEG Contract No. :- 4355	



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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
S3_BHA04	4.00	J7	Brown slightly sandy slightly gravelly CLAY of low plasticity.	MC PI
S3_BHA04	4.00	B8	Brown slightly sandy slightly gravelly CLAY.	PSD SED
S3_BHA04	5.00	U9	Very high strength brown with orange mottling sandy gravelly CLAY.	OED UUT
S3_BHA04	5.80	J10	Brown sandy slightly gravelly CLAY of low plasticity.	MC PI
S3_BHA04	6.50	B12	Brown slightly sandy slightly gravelly CLAY.	PSD
S3_TPA_TP101	1.10	J4	Grey slightly sandy CLAY of high plasticity.	MC PI
S3_TPA_TP101	1.10	B5	Brown slightly sandy CLAY.	PSD SED CP4 CBR
S3_TPA_TP102	0.40	B2	MADE GROUND (Brown very sandy gravel including concrete and ceramic fragments).	PSD US for CP4
S3_TPA_TP102A	0.60	B2	MADE GROUND (Dark brown clayey very sandy gravel of slag and brick).	PSD US for CP4 and CBR
S3_TPA_TP102A	1.90	J4	MADE GROUND (Brown with orange and grey mottling slightly sandy clay of high plasticity).	MC PI
S3_TPA_TP102A	1.90	B5	MADE GROUND (Brown slightly sandy clay).	PSD SED CP4
S3_TPA_TP103	0.40	B2	MADE GROUND (Cobbles of brick and tarmac with much brown clayey sandy gravel and occasional clay pockets).	PSD US for CP4
S3_TPA_TP103	1.60	J4	MADE GROUND (Brown slightly sandy slightly gravelly clay of intermediate plasticity. Gravel includes brick fragments).	MC PI
S3_TPA_TP103	1.60	B5	Brown slightly sandy slightly gravelly CLAY.	MCV
S3_TPA_TP104	0.40	B2	MADE GROUND (Brown slightly sandy gravelly clay with a medium cobble content. Gravel includes ceramics fragments).	PSD SED
S3_TPA_TP104	1.70	J4	Brown slightly sandy CLAY of high plasticity.	MC PI
S3_TPA_TP104	1.70	B5	Brown slightly sandy CLAY.	PSD SED CBR
S3_TPA_TP105	0.30	B2	MADE GROUND (Brown slightly sandy gravelly clay with a high cobble content. Gravel includes concrete and slag fragments).	PSD US for CP4
S3_TPA_TP105	1.20	J4	Dark grey slightly sandy CLAY of intermediate to high plasticity.	MC PI
S3_TPA_TP105	1.20	B5	Brown slightly sandy slightly gravelly CLAY.	CP4
S3_TPA_TP107	0.40	B2	MADE GROUND (Dark brown very clayey sandy gravel including ash, ceramic and brick fragments).	PSD CP4

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LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
S3_TPA_TP107	0.90	J4	Grey with brown mottling silty slightly sandy CLAY of high plasticity.	MC PI
S3_TPA_TP107	0.90	B5	Grey mottled silty slightly sandy CLAY.	PSD SED
S3_TPA_TP108	1.60	B5	MADE GROUND (Grey slightly clayey slightly sandy gravel and cobbles including concrete and brick fragments).	PSD
S3_TPA_TP108	2.70	B7	MADE GROUND (Brown clayey sandy gravel and cobbles including concrete, slag and brick fragments).	PSD SED US for CP4
S3_TPA_TP108	3.70	J8	MADE GROUND (Brown sandy gravelly clay).	MC
S3_TPA_TP108	3.70	B9	MADE GROUND (Brown cobbles with some sandy gravelly clay. Gravel includes metal, concrete and brick fragments).	PSD SED
S3_TPA_TP108	4.90	J10	Brown slightly sandy CLAY of intermediate plasticity.	MC PI
S3_TPA_TP108	4.90	B11	Brown silty slightly sandy CLAY.	PSD SED
S3_TPA_TP109	1.30	J4	MADE GROUND (Grey sandy gravel including ash, clinker and slag fragments).	PSD
S3_TPA_TP109	1.90	J6	Brown with grey mottling slightly sandy CLAY of high plasticity.	MC PI
S3_TPA_TP110	0.30	B3	MADE GROUND (Brown very clayey very sandy gravel including slag and brick fragments).	PSD SED PD
S3_TPA_TP110	1.60	J5	Brown slightly sandy CLAY of intermediate plasticity.	MC PI
S3_TPA_TP110	1.60	B6	Brown slightly sandy CLAY.	CP4
S3_TPA_TP111	1.30	B5	MADE GROUND (Brown slightly clayey very sandy gravel with a medium cobble content. Gravel includes slag).	PSD US for CBR
S3_TPA_TP111	2.30	J6	MADE GROUND (Black gravel including ash, clinker and slag).	MC
S3_TPA_TP111	2.30	B7	MADE GROUND (Dark brown slightly clayey sandy gravel and cobbles including slag and brick fragments).	PSD US for CP4

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Moisture Content/Plasticity Index and Moisture Content



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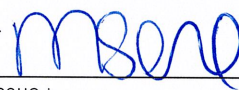


MOISTURE CONTENT CERTIFICATE

BS 1377 : Part 2 : Clause 3.2

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Moisture Content (%)	Date Tested	Remarks
S3_BHA03	0.30	J1	0.30	12	22/10/2021	
S3_BHA03	3.30	J8	3.30	9.6	22/10/2021	
S3_BHA03	4.80	J10	4.80	25	22/10/2021	
S3_BHA04	1.50	J4	1.50	24	22/10/2021	
S3_BHA04	3.80	J5	3.80	15	22/10/2021	
S3_TPA_TP108	3.70	B9	3.70	23	22/10/2021	
S3_TPA_TP111	2.30	J6	2.30	11	22/10/2021	

For description of sample please refer to the Laboratory Sample Description Sheet

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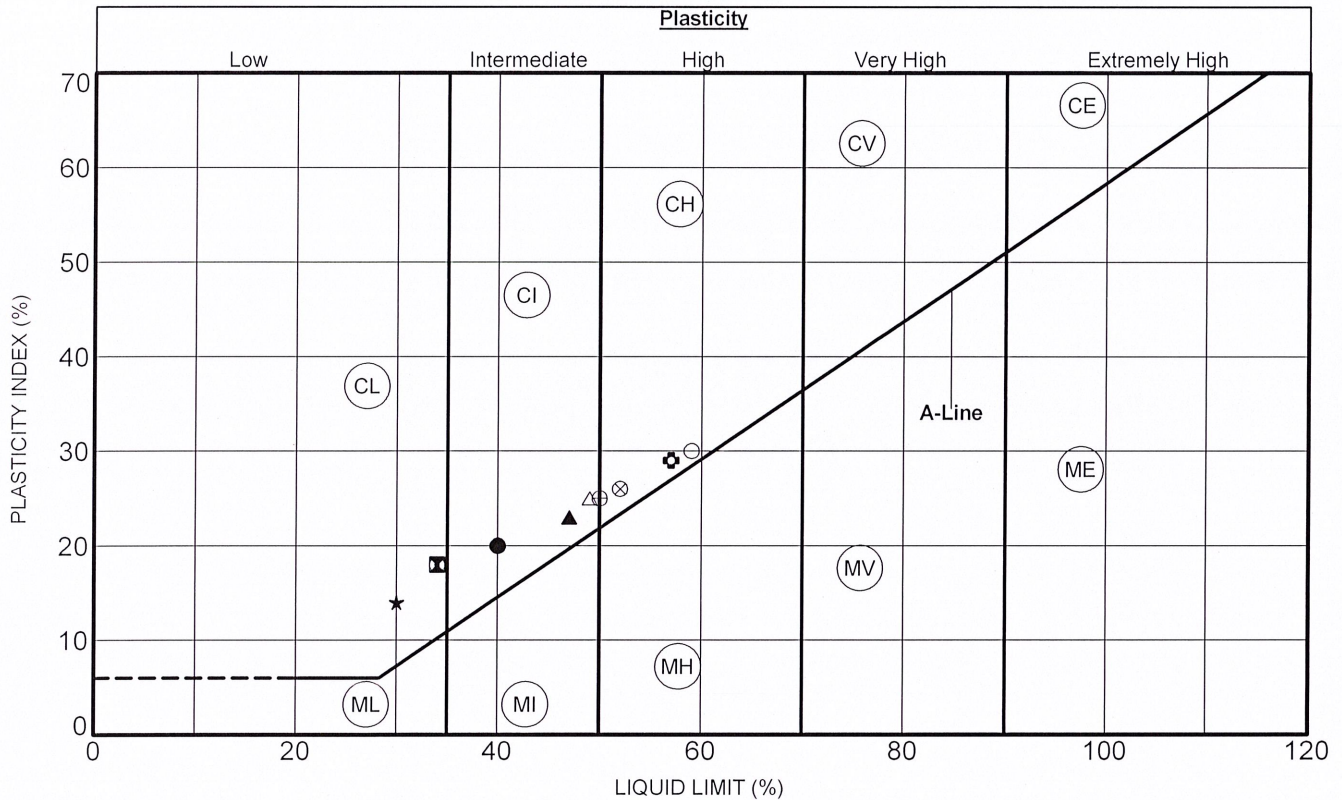
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ATTERBERG LIMITS & NATURAL MOISTURE CONTENT


Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	I _L	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested
●S3_BHA03	5.10	J3	5.10	40	20	20	0.45	Natural		29	22/10/2021 #
⊠S3_BHA03	8.90	J12	8.90	34	16	18	0.00	Natural		16	22/10/2021
▲S3_BHA04	2.00	J2	2.00	47	24	23	-0.17	Natural		20	22/10/2021
★S3_BHA04	4.00	J7	4.00	30	16	14	-0.14	Natural		14	22/10/2021
⊙S3_BHA04	5.80	J10	5.80	34	16	18	0.00	Natural		16	22/10/2021
◆S3_TPA_TP101	1.10	J4	1.10	57	28	29	0.03	Natural		29	22/10/2021
○S3_TPA_TP102A	1.90	J4	1.90	59	29	30	-0.13	Natural		25	22/10/2021
△S3_TPA_TP103	1.60	J4	1.60	49	24	25	0.68	Natural		41	22/10/2021
⊗S3_TPA_TP104	1.70	J4	1.70	52	26	26	0.00	Natural		26	22/10/2021 #
⊕S3_TPA_TP105	1.20	J4	1.20	50	25	25	-0.04	Natural		24	22/10/2021

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

Contract Title :- Prairie Phase 4	Client :- Tees Valley Combined Authority
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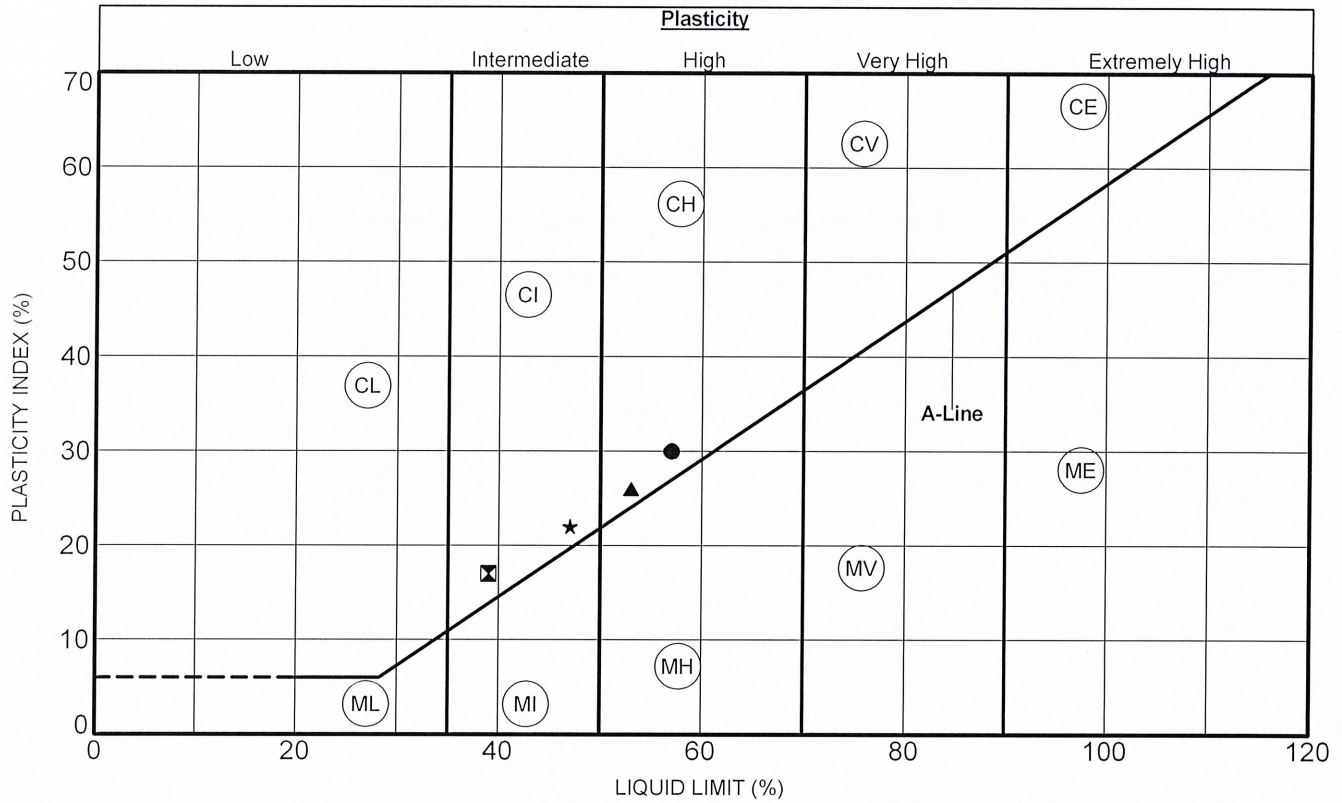


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ATTERBERG LIMITS & NATURAL MOISTURE CONTENT

Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	I _L	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested
●S3_TPA_TP107	0.90	J4	0.90	57	27	30	0.23	Natural		34	22/10/2021
☒S3_TPA_TP108	4.90	J10	4.90	39	22	17	0.18	Natural		25	22/10/2021
▲S3_TPA_TP109	1.90	J6	1.90	53	27	26	0.19	Natural		32	22/10/2021
★S3_TPA_TP110	1.60	J5	1.60	47	25	22	0.05	Natural		26	22/10/2021

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

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Determination of Particle Density