Thurrock Flexible Generation Plant

Environmental Statement Volume 6
Appendix 16.2: Phase 2 Site Investigation Report

Date: January 2020

Environmental Impact Assessment

Environmental Statement

Volume 6

Appendix 16.2

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1. TerraConsult Phase 2 Site Investigation Report 2

Summary

This appendix presents the results and discussion of the Phase 2 intrusive site investigation works undertaken in zone A, the main development site for Thurrock Flexible Generation Plant.

Report Number: 4593/R01 Issue 1

Version: Final

Date: January 2020

This report is also downloadable from the Thurrock Flexible Generation Plant website at:
http://www.thurrockpower.co.uk

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1. TerraConsult Phase 2 Site Investigation Report

TerraConsult

October 2019
Report No 4593/R01 Issue 1

Tilbury

Phase 2 Site Investigation Report

Prepared for

Statera Energy Limited

Tilbury

Phase 2 Site Investigation Report

October 2019

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DOCUMENT INFORMATION AND CONTROL SHEET

Document Status and Approval Schedule

Report No 4593/R01 Issue 1	Title Tilbury Phase 2 Site Investigation Report

Issue History

Issue	Status	Date		Signature	Date
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DISCLAIMER

This report should be read with the Service Constraints Report Limitations & Planning Requirements set out in Appendix A.

bsi. ISO 9001 Quality Management FS573193

bsi. ISO 14001 Environmental Management EMS573194

Executive Summary

The client, Statera Energy Limited, commissioned TerraConsult Ltd to undertake a Phase 2 Site Investigation Report for a site at Station Road, Tilbury, which is being considered for development.

Development Proposals

Development proposals are understood to comprise construction of a power station.

Conclusions

When compared to the screening criteria for commercial end use, the chemical laboratory testing indicated no elevated concentrations of contaminants within the samples analysed. Asbestos was not detected in any of the samples analysed.

Recommendations

Recommendations are provided within the subsequent report.

Tilbury

Phase 2 Site Investigation Report

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Appendices

Appendix A **Service Constraints and Report Limitations**
Appendix B **Environmental Risk Assessment Methodology and Terminology**
Appendix C **Fieldwork Records**
Appendix D **Laboratory Analysis Results**

1. Introduction

1.1 Background Information

TerraConsult Limited (TerraConsult) was commissioned by Statera Energy Limited (Statera) to undertake a Phase 2 Site Investigation for the site known as Tilbury, off Station Road, RM18 8RA.

1.2 Development Proposals

It is understood that the development proposals comprise construction of a power station.

1.3 Purpose of Investigation

The purpose of the report is to provide information on the condition of the site prior to application for an Environmental Permit, and to provide information to guide any changes to the current proposed land use. The specific activities carried out are as follows:

- Carry out a site walk over;
- Carry out an intrusive investigation comprising cable percussive and dynamic sampler boreholes with associated sampling, and cone penetration tests;
- Ground gas and groundwater monitoring;
- Laboratory testing for potential contaminants and geotechnical purposes;
- Assess the general nature and extent of contamination at the site and carry out a contamination risk assessment to determine if the site poses a risk to potential receptors;
- To monitor the ground gas conditions at the site and undertake a ground gas risk assessment;
- Should the investigation indicate that remediation of contaminants be required, provide recommendations of feasible remedial measures to facilitate development of the site for commercial end use;
- Provide preliminary geotechnical information on the ground conditions for foundation and floor slab design.

This report has been devised to comply with the relevant principles and requirements of a range of guidance with regards to potentially contaminated land, including (but not limited to):

- Part IIA of the Environment Protection Act, 1990;
- Contaminated Land (England) (Amendment) Regulations 2012 and Contaminated Land Statutory Guidance (DEFRA, April 2012);
- National Planning Policy Framework (HCA, March 2012);
- BS5930:2015: “Code of practice for site investigations”;
- BS10175: 2011 +A2:2017 “Investigation of Potentially Contaminated Sites - Code of Practice”;
- The Building Regulations 2010. Part C (HM Government 2013)

- DEFRA/Environment Agency (2004) Report CLR11 “Model Procedures for the Management of Land Contamination”;
- Environment Agency (2011) Report GPLC1 “Guiding Principles for Land Contamination”;
- Environment Agency (2017) “The Environment Agency’s Approach to Groundwater Protection” November 2017 Version 1.1

1.4 Previous Investigations

It is understood that the site has not been subject to any previous investigations.

1.5 Limitations

TerraConsult’s service constraints and report limitations are presented in Appendix A and a description of environmental risk assessment methodology and terminology is presented in Appendix B.

In preparation of this report, it is assumed that any information provided to TerraConsult by the client in connection with the commission is accurate, complete and not misleading. TerraConsult cannot guarantee the accuracy or validity of this information.

2. Fieldwork and Analysis (September 2019)

The works undertaken as part of the site investigation and subsequent analysis of selected samples is summarised below.

2.1 Site Investigation

The site work undertaken as part of this phase of investigation is detailed in the following section. The site investigation was undertaken in accordance with the scope of works agreed with the client and generally in accordance with industry guidance including BS10175: 2011 *Investigations into Potentially Contaminated Sites – Code of Practice* and BS5930: 2015 *Code of Practice for Site Investigations – Amendment 2*.

2.1.1 Site Work Rationale and Preparatory Works

The exploratory hole location plan and fieldwork records are presented in **Appendix C**. The investigative positions were selected based on the available access and to provide coverage of the proposed development plot.

Prior to boring a cable avoidance tool was used to confirm each location was clear of detectable services.

2.1.2 Cable Percussive Boreholes

Seven cable percussive boreholes, referenced CP01 to CP07, were undertaken between the 10th and 24th September 2019 and were completed at depths between 23.10mbgl and 25.00mbgl (5.00m into the underlying solid geology). The arisings were logged on site by an Environmental Consultant. Recovered soil samples were taken at regular intervals throughout the depth of the boreholes.

2.1.3 Dynamic Sampler Boreholes

A total of nine dynamic sampler boreholes, referenced WS01 to WS09, were undertaken on the 19th and 20th September 2019 and were completed at depths between 4.45mbgl and 5.45mbgl. The arisings were logged and sampled on site by an Environmental Consultant. The recovered soil samples were taken at regular intervals throughout the depth of the boreholes and environmental samples were placed in laboratory supplied sealed glass jars and plastic containers prior to being stored in cool boxes during transit to the laboratory.

2.1.4 Cone Penetration Tests

A total of ten Cone Penetration Tests (CPT) measuring cone end resistance and sleeve friction, were undertaken on the 17th and 18th September 2019 using the ISO 22476-1:2012 method.

2.1.5 Piezometer Installations and Monitoring

Single groundwater monitoring piezometer installations were placed in boreholes CP01 to CP07. Each installation comprised 16mm diameter HDPE piezometer casing with a ceramic piezometer tip at the base of each borehole. The depth to groundwater was measured using a dip-meter. Monitoring results are presented in Appendix C.

2.1.6 Standpipe Installations and Monitoring

Single standpipe installations were placed in boreholes WS01, WS02, WS04, WS06, WS07 and WS08. Each standpipe comprised 63mm diameter HDPE piping, slotted below 1.00mbgl; installed to depths of 5.00mbgl. Once installed, the slotted section was surrounded by suitable gravel pack, above which a sealing material (bentonite) was used. A rubber bung and gas tap were placed at the top of the pipework and a raised cover concreted at surface to protect the installation from damage. Flow was monitored for a period of up to two minutes, and the concentrations of ground gases including methane, carbon dioxide, oxygen, hydrogen sulphide and carbon monoxide were monitored for up to five minutes. The depth to groundwater was measured using a dip-meter. The monitoring results are presented in **Appendix C**.

2.2 Laboratory Analysis

The scheduled analysis and number of samples tested is summarised in **Error! Reference source not found.1** and **Table 2.2**. The laboratory certificates are presented in **Appendix D**.

Table 2.1 Summary of Scheduled Chemical Testing

Analysis	**No. of Soil Samples Tested**
Metals	9
Speciated polycyclic aromatic hydrocarbons (PAHs)	9
Water Soluble Sulphate & Water Soluble Chloride	9
Phenols – Total (monohydric)	9
Mineral Oil, TPH C10-C40, TPH C10-C25	9
Benzene, toluene, ethylbenzene and xylenes (BTEX)	9
Asbestos screen	9
pH	9
Total Cyanide	9
Moisture Content & Stone Content	9
Analysis	**No. of Water Samples Tested**
Metals	3
General Inorganics	3
Speciated polycyclic aromatic hydrocarbons (PAHs)	3
Heavy Metals	3
Monoaromatics and Oxygenates	3
Mineral Oil, TPH C10-C40, TPH C10-C25	3

Table 2.1 Summary of Scheduled Geotechnical Testing

Analysis	**No. of Soil Samples Tested**
Moisture Content	18
Atterberg Limit (4 Point)	18

Oedometer Consolidation	6
Quick Undrained Triaxial	16
BRE SD1	12

3. Ground Conditions

The encountered ground conditions, groundwater and other observations are summarised and discussed below.

3.1 Encountered Ground Conditions

The ground conditions encountered are summarised in **Table 3.1** and discussed below.

Table 3.1 Summary of Encountered Ground Conditions

Stratum	Location	Surface Depth (mbgl)	Proven Base Depth (mbgl)	Proven thickness (m)
Topsoil	CP01 to CP07. WS01, WS02, WS03, WS09.	0.00	0.10 to 0.95	0.10 to 0.95
Made Ground	WS04, WS05, WS06, WS07, WS08.	0.00	0.50 to 1.82	0.50 to 1.82
Alluvium	All locations	0.10 to 1.82	18.10 to 20.30	18.00 to 19.80
Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated)	CP01 to CP07	18.10 to 20.30	Base not proved	Thickness not proved

3.1.1 Topsoil

Topsoil was encountered at all cable percussive locations, and dynamic sampling locations WS01, WS02, WS03 and WS09 from surface level to depths between 0.10mbgl and 0.95mbgl.

3.1.2 Made Ground

Made Ground was encountered at WS04 to WS08 from surface level to depths between 0.50mbgl and 1.82mbgl. The Made Ground comprised gravelly clay with gravel of brick fragments and chalk.

3.1.3 Alluvium

Alluvium was encountered underlying the topsoil and Made Ground at depths between 0.10mbgl and 1.82mbgl in all locations, to depths between 18.10mbgl and 20.30mbgl. This stratum comprised mainly very soft, silty clay, frequently peaty and with an occasional layer of peat typically 1.50m thick encountered at approximately 5.50mbgl to 6.00mbgl. Thinner, shallower bands of peat were also noted in WS03, WS04, WS05, CP03 and CP05 around 1.00mbgl. Coarse sand and gravel of sub-angular to sub-rounded flint was also encountered in boreholes CP01 to CP07 as a deeper component of this stratum, at depths between 11.20mbgl and 16.10mbgl, before encountering the underlying chalk.

3.1.4 Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated)

This stratum was encountered underlying the Alluvium at depths between 18.10mbgl and 20.30mbgl in boreholes CP01 to CP07. The stratum comprised primarily structureless chalk recovered as chalk gravel and putty chalk, occasionally with pockets of flint gravel. The base of the chalk was not proven. Boreholes CP01 to CP07 were completed at target depths between 23.10mbgl and 25.00mbgl (approximately 5 metres into the chalk).

3.1.5 Groundwater

During the site investigation, groundwater was encountered in CP01, CP03, CP05, CP06 and CP07 at depths between 11.20mbgl and 15.00mbgl, where the top of the sand and gravel component of the alluvium was encountered, and rose to depths between 2.40mbgl and 6.20mbgl over a period of 20 minutes.

During subsequent monitoring, groundwater levels in CP01 to CP07 rose to and stabilised at approximately 1.00mbgl. Groundwater was encountered in WS1, WS2, WS4, WS6, WS7 and WS8 at depths between 1.62mbgl and 2.67mbgl.

4. Summary of Laboratory Analysis

The results of the chemical laboratory testing and ground gas monitoring are detailed in the following section.

4.1 Geoenvironmental Soil Analysis

The samples were submitted to i2 Analytical Laboratories in Watford, Hertfordshire who are UKAS accredited in accordance with ISO17025 and are also MCERTS accredited for soil analysis in accordance with the Environment Agency's scheme. The laboratory carries out Quality Assurance and Quality Control in accordance with BS ISO 17025 and participates in external laboratory comparison and quality control schemes. Details of the accreditation and the methods of analysis are provided on the relevant test reports.

4.2 Geotechnical Soil Analysis

The samples were submitted to K4 Soils in Watford who are UKAS accredited in accordance with ISO17025.

4.3 Groundwater Analysis

Water samples were submitted to i2 Analytical in Watford for analysis. The laboratory carries out Quality Assurance and Quality Control in accordance with BS ISO 17025 and participates in external laboratory comparison and quality control schemes. Details of the accreditation and the methods of analysis are provided on the relevant test reports.

4.4 Ground Gas Analysis

Where applicable, the results of ground gas monitoring have been compared to CIRIA 665: Assessing risks posed by hazardous ground gases to buildings and BS 8485:2015: Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.

Table 4.1 Results of Laboratory Analysis for Metals

Determinand *Metals*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Respective Land Use (mg/kg)**		**No. of Samples with Elevated Concentrations**	**Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*	*C4SLs*		
Arsenic	7.4	25	640	-	0	None elevated
Cadmium	<0.2	<0.2	190	-	0	None elevated
Chromium (III)	38	50	8,600	-	0	None elevated
Copper	4.9	24	68,000	-	0	None elevated
Lead	15	33	-	6,000	0	None elevated
Mercury	<0.3	<0.3	1,100	-	0	None elevated
Nickel	24	43	980	-	0	None elevated
Selenium	<1.0	<1.0	120,000	-	0	None elevated
Zinc	68	130	730,000	-	0	None elevated

Table 4.2 Results of Laboratory Analysis for Polycyclic Aromatic Hydrocarbons

Determinand *PAHs*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Proposed Land Use (mg/kg)**			**No. of Samples with Elevated Concentrations**	**Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*				
			1% som	*2.5% som*	*6% som*		
Acenaphthene	<0.05	<0.05	84,000	97,000	100,000	0	None elevated
Acenaphthylene	<0.05	<0.05	83,000	97,000	100,000	0	None elevated
Anthracene	<0.05	<0.05	520,000	540,000	540,000	0	None elevated
Benzo[a]anthracene	<0.05	<0.05	170	170	180	0	None elevated
Benzo[a]pyrene	<0.05	<0.05	76	76	76	0	None elevated

Determinand *PAHs*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Proposed Land Use (mg/kg)**			**No. of Samples with Elevated Concentrations**	**Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*				
			1% som	*2.5% som*	*6% som*		
Benzo[b]fluoranthene	<0.05	<0.05	44	44	45	0	None elevated
Benzo[ghi]perylene	<0.05	<0.05	3,900	4,000	4,000	0	None elevated
Benzo[k]fluoranthene	<0.05	<0.05	1,200	1,200	1,200	0	None elevated
Chrysene	<0.05	<0.05	350	350	350	0	None elevated
Dibenzo[ah]anthracene	<0.05	<0.05	3.5	3.6	3.6	0	None elevated
Fluoranthene	<0.05	<0.05	23,000	23,000	23,000	0	None elevated
Fluorene	<0.05	<0.05	63,000	68,000	71,000	0	None elevated
Indeno[123-cd]pyrene	<0.05	<0.05	500	510	510	0	None elevated
Naphthalene	<0.05	<0.05	190	460	1,100	0	None elevated
Phenanthrene	<0.05	<0.05	22,000	22,000	23,000	0	None elevated
Pyrene	<0.05	<0.05	54,000	54,000	54,000	0	None elevated
Total PAH	<0.9	<0.9	-	-	-	-	-

Table 4.3 Results of Laboratory Analysis for Petroleum Hydrocarbons

Determinand *Petroleum Hydrocarbons*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Proposed Land Use (mg/kg)**			**No. of Samples with Elevated Concentrations**	**Location of Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*				
			1% som	*2.5% som*	*6% som*		
Mineral Oil (C10-C40)	<10	<10	-	-	-	-	-

Determinand *Petroleum Hydrocarbons*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Proposed Land Use (mg/kg)**			**No. of Samples with Elevated Concentrations**	**Location of Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*				
			1% som	*2.5% som*	*6% som*		
TPH (C10-C40)	<10	<10	-	-	-	-	-
TPH (C10-C25)	<10	<10	-	-	-	-	-

Table 4.4 Results of Laboratory Analysis for BTEX and MTBE

Determinand *BTEX and MTBE*	**Determinand Concentration Range (mg/kg)**		**Screening Values for Proposed Land Use (mg/kg)**			**No. of Samples with Elevated Concentration**	**Location of Samples with Elevated Concentrations**
	Minimum	*Maximum*	*S4ULs*				
			1% som	*2.5% som*	*6% som*		
Benzene	<0.001	<0.001	27	47	90	0	None elevated
Toluene	<0.001	<0.001	869	1920	4360	0	None elevated
Ethylbenzene	<0.001	<0.001	518	1220	2840	0	None elevated
o-xylene	<0.001	<0.001	478	1120	2620	0	None elevated
m-xylene	<0.001	<0.001	625	1470	3460	0	None elevated
p-xylene	<0.001	<0.001	576	1350	3170	0	None elevated

Table 4.5 Asbestos Screening

Determinand	**Screening Result**	**Asbestos Matrix**	**Asbestos Type**	**No. of Samples with Asbestos**	**Location of Samples with Detected Asbestos**
Asbestos	None detected	-	-	0	None detected

Table 4.6 Summary of Groundwater Analysis Results

Determinand	Determinand Concentration Range (ug/l)		Threshold Value (ug/l)		No. of Samples with Elevated Concentrations	Location of Samples with Elevated Concentrations
	Minimum	*Maximum*	*UK DWS*			
Arsenic	<0.15	1.40	10	10	0	None elevated
Cadmium	<0.02	<0.02	5	13	0	None elevated
Chromium	<0.2	0.2	50	50	0	None elevated
Copper	<0.5	<0.5	2,000	2,000	0	None elevated
Lead	<0.2	0.4	10	10	0	None elevated
Mercury	<0.05	<0.05	1	16	0	None elevated
Nickel	<0.5	9.2	20	70	0	None elevated
Selenium	U/S	14	10	40	0	None elevated
Zinc	<0.5	<0.5	5,000	-	0	None elevated
Benzo(a)pyrene	<0.01	<0.01	0.01	0.7	0	None elevated
Sum of PAHs (4no. congeners)	<0.01	<0.01	0.1 (sum of 4no. congeners)	0.7	0	None elevated
Total petroleum hydrocarbons	<140 (C5-C35)	<140 (C5-C35)	-	Taste and odour will in most cases be detectable at concentrations below those of health concern, particularly with short-term exposure.	-	No evidence to suggest fuel contamination.

*U/S unsufficient sample

4.5 Summary of Analysis and Monitoring Results

The results of the chemical laboratory analysis of selected soil samples is discussed in the following section.

4.5.1 Summary of Soil Sample Analysis and Screening Results

Analysis of selected soil samples did not indicate any elevated concentrations of contaminants when compared against their respective criteria for commercial end use.

Asbestos was not detected in any of the analysed soil samples.

4.5.2 Summary of Groundwater Sample Analysis and Screening Results

analysis of selected groundwater samples did not indicate any elevated concentrations of contaminants when compared to the UK Drinking Water Standards.

4.6 Discussion of Ground Gas Results and Gas Screening Value

The results of ground gas monitoring are summarised below.

4.6.1 Summary of Ground Gas Results

The recorded methane, carbon monoxide and hydrogen sulphide (H_2S) concentrations were below detection levels. Detected levels of carbon dioxide ranged between 0.3 and 2.7.

4.6.2 Recorded Flow Rate

No flow was detected at any of the monitoring points.

4.6.3 Gas Screening Value and Classification

The Gas Screening Value (GSV) for the site based on the recorded maximum concentrations of methane and carbon dioxide is provided in Table 4.6.

Table 4.6 Gas Screening Values for Methane and Carbon Dioxide

Peak Flow Rate (l/hr)	Worst Case CO_2 (%)	CO_2 GSV	Worst Case CH_4 (%)	CH_4 GSV
<0.1	2.7	<0.0027 l/hr CO_2	<0.1	<0.0001 l/hr CH_4

Characteristic Situation 1 is considered applicable to the site based on the gas screening value of <0.0027 l/hr and the recorded maximum concentrations of carbon dioxide and methane.

5. Conceptual Site Model

In accordance with BS 10175, a general schematic section has been developed for the site based on the previously presented data and contaminant linkage assessment for the proposed commercial end use. This is shown in **Figure 1**.

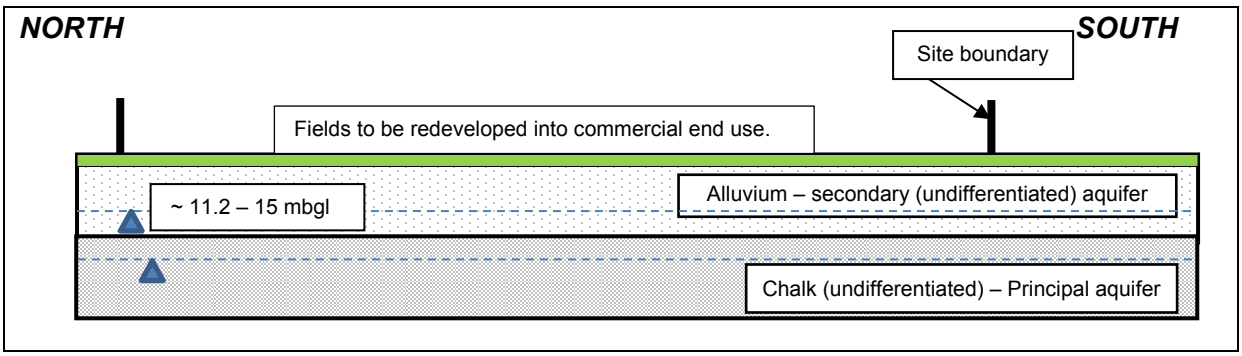

Figure 1 Conceptual Site Model based on the proposed development (not to scale).

The model for the site shows the geology, former site usage and vulnerable receptors. The information presented above represents the conceptual ground model that may need to be revised based on data obtained during any future investigation, either desk-based or intrusive. The conceptual site model and proposed end use described above should be considered very broadly representative of a commercial land use, as a worst case scenario, as defined in SR3 "Updated Technical Model to the CLEA Model" (SC050021/SR3, 2011) for the purpose of this report.

5.1 Updated Qualitative Risk Assessment

The contaminant linkages have been individually assessed and an updated summary of the potential geo-environmental risks associated with the site and in the context of the proposed development is provided in **Table 5.1**.

Table 5.1 Summary of Updated Qualitative Risk Assessment

Issue	Risk Rating	Justification Comments
Contamination Potential		
Potential for significant on site contamination.	Low	No elevated concentrations of contaminants were detected in the samples analysed.
Potential for contaminants to migrate via soil/air/groundwater pathways to site.	Low to moderate	Secondary (undifferentiated) Aquifer within the Alluvium stratum.
Potential for contaminants to migrate via soil/air/groundwater pathways off-site.	Low	Contaminants on site could migrate off site due to the ground conditions. A Secondary (undifferentiated) Aquifer underlies the site within the Alluvium stratum.
Geo-environmental Risk		
Risk of harm to human health (end users) based on anticipated conditions.	Low	No elevated concentrations of contaminants were detected in the samples analysed.
Risk to site workers.	Low	No elevated concentrations of contaminants were detected in the samples analysed.
Risk of pollution to controlled water.	Low	A Secondary (undifferentiated) Aquifer lies within the Alluvium stratum underlying the site, and the River Thames lies less than 1km south of the site, however no elevated concentrations of contaminants were detected in the samples analysed.
Hazards to building structures and	Low	Contamination has not been identified that could affect

Issue	Risk Rating	Justification Comments
services – excluding ground gas.		building structures or services.
Liabilities		
Likelihood of designation as Contaminated Land under Part 2A of EPA 1990.	Negligible	No elevated concentrations of contaminants were detected in the samples analysed.
Liability issues for owner.	Low	No potential liability issues identified.
Development Implications		
Possible requirement for remediation of soil.	Low	No elevated concentrations of contaminants were detected in the samples analysed.
Possible requirement for remediation of groundwater.	Low	Groundwater was not encountered during monitoring.
Possible requirement for gas protection.	Negligible	Based on the results of monitoring.
Special requirements for water supply pipes.	Low	No elevated concentrations of contaminants were detected in the samples analysed. Specialist pipework should not be required. The water provider, however, may require additional soil analysis.
Potential limitations on foundation design.	Low	Laboratory analysis has classed the ground on site as DS-1 and AC-1.
Risk of encountering materials classed as hazardous waste.	Low	No contamination was identified from the samples analysed.

6. Geoenvironmental Conclusion and Recommendation

The following recommendations are based on the results of the conceptual site model and risk assessment.

6.1 Summary of Development Proposals and Ground Investigation Results

The proposals, encountered ground conditions and analysis results are summarised below.

6.1.1 Development Proposals

Proposals comprise the construction of a power station on site.

6.1.2 Summary of Encountered Ground Conditions and Groundwater

The encountered ground conditions comprised Made Ground or Topsoil to depths between 0.10mbgl and 1.82mbgl, overlying Alluvium to depths between 18.10mbgl and 20.30mbgl. The Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated) was encountered underlying the Alluvium at all Cable Percussive borehole locations. Cable Percussive boreholes were completed at depths approximately 5m into the chalk, or at 25mbgl – between 23.1mbgl and 25.0mbgl across the site.

Groundwater was encountered in CP1, CP3, CP5, CP6 and CP7 during site work at depths between 11.20mbgl and 15.00mbgl. During subsequent monitoring, groundwater was encountered at depths of approximately 1.00mbgl at these locations, and at depths between 1.62mbgl and 2.67mbgl at WS1, WS2, WS4, WS6, WS7 and WS8.

6.1.3 Summary of Laboratory Test Results and Monitoring

When compared to the screening criteria for commercial end use, the chemical laboratory testing indicated no elevated concentrations of contaminants within the samples analysed. Asbestos was not detected in any of the samples analysed.

The ground gas monitoring results indicated that the gassing regime falls into CIRIA C665 Characteristic Situation 1.

6.2 Conclusion

Based on the conceptual site model and risk assessment, low risk to end users and moderate risk to site workers has been identified.

6.3 Recommendations

Recommendations are provided below.

6.3.1 Watching Brief

It is recommended that a watching brief is maintained on site, particularly during the groundwork stage. During any ground works an appraisal of the exposed soils should be made by a competent person, this as an example could be the site manager. If any material is noted to show visual and/or olfactory signs of contamination it should be stockpiled separately and tested prior to its appropriate removal off-site or re-use. If soils suspected of

being contaminated are encountered, it is recommended that a contaminated land specialist is consulted.

6.3.2 Buried Services

Potable water pipework shall comply with the Water Supply Regulations, the agreement of the water provider and Local Authority should also be sought regarding the potable water pipework and fittings selected prior to commencement.

6.3.3 Importing and Re-Use of Soil and Materials Management Plan

Excavated soil that is to remain and be re-used on site, assuming it is suitable for the proposed use, may not be determined as waste and its re-use therefore may not require an Environmental Permit. It may be necessary to consult the Environment Agency or other statutory bodies regarding re-use of soils as part of the proposals and whether a Materials Management Plan or Environmental Permit is required. In any case, a site waste management plan or materials management plan may assist the design and cost assessment of the proposed development. This should be devised within the design phase of the scheme.

6.3.4 Soil Disposal

The client and contractors are advised to follow the process outlined in the Environment Agency's Technical Guidance Document WM3 '*Waste Classification – Guidance on the Classification and Assessment of Waste*', 1st edition 2015. Background information and the results of chemical laboratory analysis within this assessment may be used as part of an initial characterisation to determine the likely waste classification of waste soils.

6.3.5 Statutory Authority Consultation

It is recommended that this report is sent to the statutory authorities including the Local Authority Environmental Health and Planning Departments prior to remediation or development of the site commencing to seek their comments. Where necessary, they will consult the Environment Agency or other relevant statutory authorities. If applicable to this project, this report should also be provided to the relevant building warranty provider. Where remediation works are required, a verification report should be submitted to the relevant authorities for approval in accordance with relevant Planning Conditions.

6.3.6 Health and Safety

As outlined within the HSE publication "Successful Health and Safety Management – HSG65" this report should inform your development of safe systems of work and the information used as an input to the safety management system. The contents of this report may be used to supplement the contents of the Health and Safety File as required under the Construction Design and Management (CDM) Regulations 2015.

In accordance with the Construction Design and Management (CDM) Regulations 2015, TerraConsult has acted in the role of Principal Contractor and as Principal Designer for the works as described in this report. With issue of this report, TerraConsult has discharged and completed all contractual and legal requirements for these positions and has no further

involvement with the project. It is the developer's duty, as required by the CDM Regulations, to appoint others to fill these roles for the further development of the site.

7. Geotechnical Assessment and Recommendation

7.1 Fieldwork and Laboratory Data Review

7.1.1 General Stratigraphy

The natural geology was identified in all of the intrusive locations and was found to comprise Alluvium overlying Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated). Groundwater was encountered within the sand and gravel component of the Alluvium at CP1, CP3, CP5, CP6 and CP7.

7.1.2 Made Ground

Made Ground was encountered at WS4, WS5, WS6, WS7 and WS8 from surface level to depths between 0.15mbgl and 0.65mbgl

7.1.3 Alluvial Clay

Twelve samples of the Alluvial Clay were submitted to a laboratory for plasticity analyses. The test results are summarised below:

Table 7.1 Summary of Geotechnical Laboratory Classification Testing Alluvial Clay

Hole	Depth (m)	Moisture Content (%)	% passing 425um sieve	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Modified Plasticity Index	Volume Change Potential	Liquidity Index
CP01	1.5	60	100	79	32	47	47	High	0.596
CP02	1.5	58	100	72	30	42	42	High	0.667
CP02	3.5	87	100	77	30	47	47	High	1.213
CP04	1.5	59	100	77	33	44	44	High	0.591
CP04	3.5	99	100	87	34	53	53	High	1.227
CP05	1.5	62	100	71	28	43	43	High	0.791
CP05	3.5	59	100	70	28	42	42	High	0.738
CP06	1.5	51	100	70	26	44	44	High	0.569
CP06	3.5	51	100	45	22	23	23	High	1.261
CP07	1.5	62	100	79	32	47	47	High	0.639
CP07	3.5	70	100	67	31	36	36	Medium	1.084
CP07	6.0	75	100	75	33	42	42	High	1.000
Minimum		**51**	**100**	**45**	**22**	**23**	**23**	**Medium**	**0.569**
Average		**66.08**	**100**	**72.42**	**29.92**	**42.50**	**42.50**	**High**	**0.865**
Maximum		**99**	**100**	**87**	**34**	**53**	**53**	**High**	**1.261**

None of the results indicated any level of desiccation. They do, however, indicate a high volume change potential. It is therefore considered that, where present, these soils could pose a significant risk to shallow structures such as foundations from either heave or shrinkage, and foundation design will need to allow for the impact of volume change potential on such soils.

SPT N-values were recorded throughout each borehole and are summarised below for the alluvial clay encountered. The listed N-values have been corrected to the standard Energy Ratio of 60% and are therefore reported below as N_{60} values:

Table 7.2 Summary of SPT N-Values Alluvial Clay

Hole No	Depth (m)	Alluvium Clay
CP1	2.50	0
	3.50	0
	4.50	0
	6.00	0
	7.50	0
	9.00	0
	10.5	0
CP2	2.50	0
	4.50	0
	7.50	0
	9.00	0
	10.50	0
	12.00	0
	13.50	0
	15.00	2
CP3	2.50	0
	3.50	0
	4.50	0
	7.50	0
	9.00	0
	10.50	0
	12.00	0
	13.50	1
CP4	2.50	0
	4.50	0
	7.50	0
	9.00	0
	10.50	0
	12.00	0
	13.50	1
CP5	2.50	0
	4.50	0
	7.50	0

Hole No	Depth (m)	Alluvium Clay
	9.00	0
	10.50	0
	12.00	0
	13.50	2
CP6	2.50	0
	4.50	0
	7.50	0
	9.00	0
	10.50	0
	12.00	0
CP7	2.50	0
	4.50	0
	7.50	0
	9.00	0
	10.50	0
	12.00	0
WS1	1.00	2
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS2	1.00	0
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS3	1.00	1
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS4	1.00	4
	2.00	0
	3.00	0
	4.00	0
	5.00	0

Hole No	Depth (m)	Alluvium Clay
WS5	1.00	0
	2.00	0
	3.00	0
	4.00	0
WS6	1.00	2
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS7	1.00	3
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS8	1.00	4
	2.00	0
	3.00	0
	4.00	0
	5.00	0
WS9	1.00	4
	2.00	0
	3.00	0
	4.00	0
	5.00	0
No of Tests		93
Range of Values		0 - 4
Mean		0.28

The average results indicate that the alluvial clay is of very low to extremely low strength. This was also confirmed within the triaxial test results.

7.1.4 Peat

Six samples of Peat were submitted to a laboratory for plasticity analyses. The classification test results on the clay strata are summarised below with the two lithologies separated out:

Table 7.3 Summary of Geotechnical Laboratory Classification Testing Peat

Hole	Depth (m)	Moisture Content (%)	% passing 425um sieve	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Modified Plasticity Index	Volume Change Potential	Liquidity Index
CP02	6.0	380	100	473	335	138	138	High	0.326
CP03	1.5	127	100	150	50	100	100	High	0.77
CP03	6.0	421	100	508	400	108	108	High	0.195
CP04	6.0	469	100	679	429	250	250	High	0.16
CP05	6.0	341	100	495	384	111	111	High	-0.388
CP06	6.0	310	100	312	215	97	97	High	0.98
Minimum		**127**	**100**	**150**	**50**	**97**	**97**	**High**	**-0.388**
Average		**341**	**100**	**436**	**302**	**134**	**134**	**High**	**0.341**
Maximum		**469**	**100**	**679**	**429**	**250**	**250**	**High**	**0.98**

None of these results indicated any degree of desiccation with the exception of CP05, however this may be due to the presence of wood fragments. They also indicated a high volume change potential. This material was mainly found at depth across the site and is unlikely to have any direct effect on shallow structures. However, the high plasticity and presence of decaying wood fragments does indicate that the material will be subject to decay and movement over time which may affect both ground levels and structures penetrating through the strata such as piles. Significant movement may also occur is dewatering occurs either from engineering practices or drainage.

The average results indicate that the peat is of very low to extremely low strength.

7.1.5 Coarse Alluvium

SPT N-values were recorded throughout each borehole and are summarised below for the alluvial granular materials encountered. The listed N-values have been corrected to the standard Energy Ratio of 60% and are therefore reported below as N_{60} values:

Table 7.4 Summary of SPT N-Values Granular Alluvial

Hole No	Depth (m)	Alluvium Granular
CP1	12.00	8
	13.50	9
	15.00	14
	16.50	33
	18.00	46
	19.50	23
CP2	16.50	8
	18.00	9
CP3	15.00	13
	16.50	9
	18.00	11
	19.50	11

Hole No	Depth (m)	Alluvium Granular
CP4	15.00	7
	16.50	10
CP5	15.00	8
	16.50	9
	18.00	13
CP6	13.50	9
	15.00	9
	16.50	14
	18.00	21
CP7	13.50	8
	15.00	8
	16.50	11
	18.00	10
No of Tests		25
Range of Values		7 - 46
Mean		13.24

The SPT tests undertaken within the alluvial granular deposits indicated them being present from between 12m and 16.5m below ground level. The results identified them as commencing as a loose deposit generally becoming medium dense towds the base of the deposit.

7.1.6 Chalk

Chalk was located within all of the deep boreholes below the alluvial soils. The SPT data indicated it to be relatively consistent in strength although, due to the drilling method, it weas difficult to provide a qualitative description. Standpipe piezometers placed within the strata indicated the piezometric head in the chalk to be close to ground level.

SPT N-values were recorded throughout each borehole and are summarised below for the chalk encountered. The listed N-values have been corrected to the standard Energy Ratio of 60% and are therefore reported below as N_{60} values:

Table 7.5 Summary of SPT N-Values Chalk

Hole No	Depth (m)	Chalk
CP1	21.00	15
	22.50	16
	24.00	31
CP2	19.50	7
	21.00	28
	22.50	7

Hole No	Depth (m)	Chalk
	24.00	14
CP3	21.00	3
	22.50	10
	24.00	13
CP4	18.00	11
	19.50	5
	21.00	5
	22.50	12
CP5	19.50	6
	21.00	11
	22.50	6
	24.00	11
CP6	19.50	16
	21.00	10
	22.50	11
CP7	19.50	10
	21.00	8
	22.50	10
No of Tests		24
Range of Values		3 - 31
Mean		11.50

7.2 Foundation Recommendations

7.2.1 Shallow Foundations

It is understood that the site is to be used as a power station, storing and providing electricity to the Grid. As such the development will include for significant structures although the exact loads are unknown.

The investigation works has identified that the alluvial deposits (specifically the clay) will not be suitable for foundations for any significant structures. It may be possible to place lightly loaded structures onto the deposits either using rafts or ground improvement such as cement/lime stabilisation of the near surface soft materials. Should rafts be used we would recommend a safe allowable bearing pressure 25kN/m^2. However, any structures placed on this typs of foundation would need to be able to tolerate a significant amount of long term settlement, especially if any loadings are eccentric thus potentially leading to differential settlement.

Detailed design of foundations should be carried out in accordance with BSEN 19971 2007 + A1 2013, and BS8004:2015, by a suitably qualified structural enginer.

Any ground improvement should be designed by a specialist contractor.

7.2.2 Deep Foundations

It is recommended that any significant loads, or buildings which do not have a high tolerance for total and differential settlement, should be constructed on piled foundations.

A specialist piling contractor should be contacted with regards to the selection of appropriate pile design and construction method. Geotechnical information within this report should be provided to give design parameters although further, deeper information will likely be required.

Any piles would need to be taken to significant depth through all of the alluvial clay and peat and at least into the underlying alluvial granular deposits at depth. However, it is highly likely that, in order to have suitable loading capacity, the piles will need to be taken into the underlying chalk.

Due to the significant thickness of soft clays and peat and the presence of groundwater the type of pile should be considered. The effect of negative skin friction (downward force on the piles from settlement in the peat and clay) could be significant. Also, if a cast in-situ type pile is adopted, the presence of mobile groundwater could cause washout of the concrete fines leading to necking of the piles. Both of these scenarious could potentially lead to catastrophic loss of bearing capacity and thus failure of the pile. A solution to these effects such as sleeving of the piles through these deposits should be considered.

Driven precast piles taken to such a depth as to equalise the effect of potential negative skin friction could also be considered although such a solution could lead to extremely deep piles and would require the pile to be successfully driven through the granular depsoits abopve the chalk.

Detailed design of piledfoundations should be carried out in accordance with BSEN 19971 2007 + A1 2013, and BS8004:2015, by a suitably qualified structural enginer once the detailed layout and loading of the propsed foundations is known.

Whilst TerraConsult considers the risks to be low for piling, a risk assessment is likely to be necessary to show that the piling will not create additional risks to Controlled Water.

Any piling works undertaken from existing ground levels will require a suitable piling mat/platform constructed in accordance with BRE Report 470 (2004) or TWf2019:02. A geotextile may be incorporated into the platform to reduce the required thickness and the platform could be designed as part of the engineering fill required for any earthworks to alter final site levels. TerraConsult can assist in the design if required once the piling rig type is known.

7.3 Ground Floor Slab

Ground bearing floor slabs would not be recommended on the alluvial deposits. However, placement of slabs onto the underlying natural clay which has been treated with lime and/or cement may be suitable dependent on the proposed loading and its susceptibility to differential settlement.

Fo any heavily loaded structure or any structures which are susceptible to significant settlement, a suspended ground floow slab would be recommended.

7.4 Roads and Hard Standing Areas

No CBR testing was undertaken as part of the site investigation works. However, with regards to the natural strata for initial design purposes, we would recommend that a CBR value of <2.5% would be indicative of the site conditions. However, we would recommend that some in-situ testing is undertaken in areas of proposed hardstanding and this along with ground conditions are reviewed in line with the layout to provide more detailed information for design purposes.

Should the CBR be demonstrated to be <2.5% then engineering solutions such as localised removal and replacement with a suitable imported engineered fill, or stabilisation using lime and cement should be considered to provide a capping layer for pavement construction..

7.5 Groundwater and Excavations

Groundwater will likely be encountered across the site in excavations in excess of 2m depth. It is anticipated that any groundwater in excavations can be controlled by sump pumping due to the clayey nature of the shallow ground.

Excavations through the soils to a depth of about 2.0m should be stable in the short term (up to 3 to 4 hours). All excavations should be carried out in accordance with BSEN16907: 2018 Earthworks, CIRIA Report 97 “Trenching Practice” and BS6031: 2009: Code of Practice for Earthworks. Further guidance on this aspect of site works is given in the British Standards for “Workmanship on Building Sites”, BS 8000, Parts 1 and 14, and in the Construction Industry Training Board’s Site Safety Note 10.

Excavation depths should generally be readily achieved using conventional hydraulic plant (e.g. wheeled JCB or similar) although larger plant (tracked 360^{o} or similar) will have higher excavation rates and generally lower ground bearing pressures.

7.6 Buried Concrete and Pipework

A total of 21 samples were analysed for pH and sulphate values. Therefore in accordance with BRE Digest 1, the mean of the highest 20% of the results should be taken into account for buried concrete classification. Therefore, for this site the highest five results have been used for classification. The results are as presented below:

Table 7.6 Summary of Top 20% Sulphate and pH Analysis

Hole	Depth (m)	Water Soluble Sulphate Content (mg/l)	pH Level	Design Sulphate Class	ACEC Class
CP01	4.5	1,120	8.5	DS2	AC2
CP01	10.0	830	8.4	DS2	AC2
CP02	13.5	740	8.2	DS2	AC2
CP04	3.5	1,480	8.1	DS2	AC2
CP04	5.9	2,080	7.4	DS3	AC3
Average		**1,250**	**8.1**	**DS2**	**AC2**

The results of laboratory pH and sulphate content indicate that a Design Sulphate Class of DS-2 and ACEC Class AC-2 conditions prevail in accordance with BRE Special Digest 1, 2005 (the Design Concrete Class).

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APPENDICES

Appendix A	Service Constraints, Report Limitations and Planning Requirements
Appendix B	Environmental Risk Assessment Methodology and Terminology
Appendix C	Fieldwork Records
Appendix D	Laboratory Analysis Results

Appendix A

Service Constraints, Report Limitations

and Planning Requirements

Service Constraints, Report Limitations and Planning Requirements

This report (the "Services") was compiled and carried out by TerraConsult Limited (TCL) for the client named on the front of the report (the "client") in accordance with the terms of a contract between TCL and the "client". The Services were performed by TCL with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by TCL taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between TCL and the client.

Other than that expressly contained in the above paragraph, TCL provides no other representation or warranty whether express or implied, is made in relation to the Services. Unless otherwise agreed, this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of TCL. If a third party relies on this report, it does so wholly at its own and sole risk and TCL disclaims any liability to such parties.

It is TCL's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon, the report in those circumstances by the client without TCL 's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of TerraConsult Limited.

The report has been prepared at the date shown on the front page and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of TCL. In the absence of such written advice of TCL, reliance on the report in the future shall be at the client's own and sole risk. Should TCL be requested to review the report in the future, TCL shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between TCL and the client.

The observations and conclusions described in this report are based solely upon the Services that were provided pursuant to the agreement between the client and TCL. TCL has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. TCL is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, TCL did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, radon gas or other radioactive or hazardous materials.

The Services are based upon TCL's observations of existing physical conditions at the site gained from existing documents, together with TCL's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst TerraConsult Limited has no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. Further, TCL was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. TCL is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to TCL and including the doing of any independent investigation of the information provided to TCL save as otherwise provided in the terms of the contract between the client and TCL.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and TCL] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geoenvironmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geoenvironmental sections are written in broad agreement with BS 10175:2011+A1 2013. For the geotechnical aspects of the report, the general requirements of Eurocode 7 (BS EN 1997-2:2007) providing a desk study assessment. This report shall not be considered as being a Ground Investigation Report (GIR).

Planning Requirements

The National Planning Policy Framework (NPPF, 2012) has twelve core land-use planning principles, two of which directly relate to the potential for pollution and contaminated land:

- Requirement to *"contribute to conserving and enhancing the natural environment and reducing pollution"* and setting out of a preference for developments to be on land of "*lesser environmental value*"; and
- *"encourage the effective use of land by re-using land that has been previously developed (brownfield land), providing that it is not of high environmental value.".*

In accordance with the core principles of NPPF, Paragraph 109 clarifies that enhancing the natural environment includes:

- *"preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.".*

Paragraph 121 of NPPF states that planning policies and decisions for developments should also ensure that:

- *"the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*
- *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*
- *adequate site investigation information, prepared by a competent person, is presented.".*

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

Unexploded Ordnance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA Report C681 (Stone et al 2009). A non-UXO specialist screening exercise has been carried out for the site by considering any evidence of UK defence activities on or near the site evident from the gathered desk study information and the unexploded aerial delivered bomb (UXB) regional risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experienced in the desk study, field investigation and clearance of UXO/UXB.

Appendix B

Environmental Risk Assessment

Methodology & Terminology

ENVIRONMENTAL RISK ASSESSMENT

METHODOLOGY & TERMINOLOGY

Legislation Overview

This report includes hazard identification and environmental risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach," which is relevant to both the current use of land and also to any proposed future use. The contaminated land regime is the statutory regime for remediation of contaminated land that causes an unacceptable level of risk and is set out in Part 2A of the Environmental Protection Act 1990 ("EPA 1990"). The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health or the wider environment given the current use and circumstances of the land. Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

> *"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:*
>
> *(a) Significant harm is being caused or there is a significant possibility of such harm being caused;*
>
> *or*
>
> *(b) Pollution of controlled waters is being, or is likely to be, caused."*

In order to assist in establishing if there is a "*significant possibility of significant harm*" there must be a "*contaminant linkage"* for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of contaminant-pathway-receptor is termed a "contaminant linkage or CPR linkage."

Part IIA of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations. Key implementing legislation of the Part 2A regime includes the Contaminated Land (England) Regulations 2006 (SI 2006/1380) as recently amended by the overarching legislation for the contaminated land regime, which implements the provisions of Part IIA of the Environmental Protection Act 1990 (as inserted by section 57 of the Environment Act 1995), came into force on 14th July 2000 together with recent amended regulations: Contaminated Land (England) (Amendment) Regulations 2012 (SI 2012/263). Revised and Contaminated Land Statutory Guidance was published by Defra in (Defra, April 2012). Part IIA defines the duties of Local Authorities in dealing with it. Part IIA places contaminated land responsibility as a part of planning and redevelopment process rather than Local Authority direct action except in situations of very high pollution risk.

In the planning process guidance is provided by National Planning Policy Framework (NPPF) of March 2012 which requires that a site which has been developed shall not be capable of being determined "contaminated land" under Part IIA. In practice, Planning Authorities require sites being developed to have a lower level of risk post development than the higher level of risk that is required in order to determine a site as being contaminated in accordance with Part IIA. This is to ensure that there is a suitable zone of safety below the level for Part IIA determination and prevent recently developed sites becoming reclassified as contaminated land if there are future legislative or technical changes (e.g. a substance is subsequently found to be more toxic than previously assessed this increases its hazard)..

The criteria for assessing levels of contaminants and hence determining whether a site represents a hazard are based on a range of techniques, models and guidance. Within this context it is relevant to note that Government objectives are:

(a) to identify and remove unacceptable risks to human health and the environment;

(b) to seek to bring damaged land back into beneficial use;

(c) to seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

(a) *ensuring that land is suitable for its current use* - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land); the contaminated land regime provides the regulatory mechanisms to achieve this;

(b) *ensuring that land is made suitable for any new use, as planning permission is given for that new use* - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and

(c) *limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought* - in other words, recognising that the risks from contaminated land can be satisfactory assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of contaminants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the use that the site has, and will have in the future.

OVERALL METHODOLOGY

The work presented in this report has been carried out in general accordance with recognised best practice as detailed in guidance documents such as in the CLR 11 Model Procedures for the Management of Land Contamination (Environment Agency, 2004), and BS10175:2011+A2 20173. Important aspects of the risk assessment process are transparency and justification. The particular rationale behind the risk assessments presented is given in this appendix.

The first stage of a two-staged investigation and assessment of a site is the Preliminary Investigation (BS 10175:2011), often referred to as the Phase 1 Study, comprising desk study and walk-over survey, which culminates in the Preliminary Risk Assessment. A preliminary conceptual site model (CSM) is developed which identifies potential geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them. From the geo-environmental perspective, the Hazard Identification process uses professional judgement to evaluate all the hazards in terms of potential contaminant linkages (of contaminant source-pathway-receptor). Potential contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment.

The second stage is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The scope of the Ground Investigation is based on the findings of the Preliminary Risk Assessment and is designed to reduce uncertainty in the geotechnical and geoenvironmental hazard identification. The Ground Investigation comprises fieldwork, laboratory testing and usually also on site monitoring. The Ground Investigation may include the Exploratory, Main and Supplementary Investigations described in BS 10175:2011+A1

2013. The result of the Ground Investigation reduces uncertainty in the geotechnical and geoenvironmental risks. Depending on the findings more detailed investigations or assessments may be required.

Preliminary Risk Assessment

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby "risk" is defined as:

"(a) The probability, or frequency, or occurrence of a defined hazard; and

(b) The magnitude (including the seriousness) of the consequences."

The UK's approach to the assessment of environmental risk is set out in by the Department of the Environment Transport and the Regions (2000) publication "A Guide to Risk Assessment and Risk Management for Environmental Protection" (also called Greenleaves II). This established an iterative, systematic staged process which comprises:

(a) Hazard identification;

(b) Hazard assessment;

(c) Risk estimation;

(d) Risk evaluation;

(e) Risk assessment;

At each stage during the development process the above steps are repeated as more detailed information becomes available for the site.

For an environmental risk to be present, all three of the following elements must be present:

- Source/Contaminant: hazardous substance that has the potential to cause adverse impacts;
- Receptor: target that may be affected by contamination: examples include human occupants/users of site, water resources (rivers or groundwater), or structures;
- Pathway: a viable route whereby a hazardous substance may come into contact with the receptor.

The absence of one or more of each component (contaminant, pathway, receptor) would prevent a contaminant linkage being established and there would be no significant environmental risk.

The identification of potential contaminant linkages is based on a Conceptual Model of the site, which is subject to continual refinement as additional data becomes available. As part of a Phase I Investigation (Desk Study and site walk over) a Preliminary Conceptual Site Model (PCSM) is formed. Based on the PCSM, potential contaminant linkages can be assessed. If the PCSM and hazard assessment indicate that a pollution linkage is not of significance then no further assessment or action is required due to this linkage. For each significant and possible linkage a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the Conceptual Site Model and assess the level of risk from each contaminant linkage.

Definition of Risk Assessment Terminology

The criteria used for risk assessment are broadly based on those presented in DETR's "A Guide to Risk Assessment and Risk Management for Environmental Protection" (2000). The Severity of the risk is classified according to the criteria in Table B.1 below:

Table B.1 Severity/Consequence of Risk

Severe	Acute risks to human health. Catastrophic damage to buildings/property (e.g. by explosion). Direct pollution of sensitive water receptors or serious pollution of other controlled water (watercourses or groundwater) bodies.
Medium	Harm to human health from long-term exposure. Slight pollution of sensitive controlled waters (surface waters or aquifers) or pollution of other water bodies. Significant effects on sensitive ecosystems or species.
Mild	No significant harm to human health in either short or long term. No pollution of sensitive controlled waters, no more than slight pollution of non-sensitive waters. Significant damage to buildings or structures. Requirement for protective equipment during site works to mitigate health effects.
Negligible	Damage to non-sensitive ecosystems or species. Minor damage to buildings or structures. No harm or pollution of water.

The probability of the risk occurring is classified according to criteria given in Table B.2 below:

Table B.2: Probability of Risk Occurring	
High likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Medium/Reasonably Foreseeable	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low/Unlikely	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Negligible/ Not credible	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table B.3 below:

Table B.3: Comparison of Severity and Probability					
		Severity			
		Severe	**Medium**	**Mild**	**Negligible**
Probability	**High likelihood**	Very High Risk	High Risk	Medium/Low Risk	Low Risk
	Medium/Reasonably Foreseeable	High Risk	Medium Risk	Low Risk	Near Zero
	Low/Unlikely	High/Medium Risk	Medium/Low Risk	Low Risk	Near Zero
	Negligible/ Not credible	Medium/Low Risk	Low Risk	Low Risk	Near Zero

The various risk rankings provide guidance for recommended actions, whether this is:

AR - Action Required, Remediation or mitigation or site investigation works required

SIR - Site Investigation Required, further assessment is required.

NAR - No Action Required.

A description of the evaluated risk is as follows:

Table B.4 – Description of the Classified Risks and Likely Action Required	
Evaluated Risk	**Recommended Actions**
Very High Risk	AR: There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	AR: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the long term.
Moderate Risk	SIR: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	NAR: It is possible that harm could arise to a designated receptor from an identified hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Near Zero	NAR: There is a negligible possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Definition of Controlled Waters

The term 'controlled waters' is defined in Section 104 of the Water Resources Act 1991 as:

> *"Territorial Waters…which extend seawards for three miles…, coastal waters…, inland freshwaters, waters in any relevant lake or pond or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata."*

Note that the definition of groundwater under the Water Resources Act 1991 includes all water within underground strata (including soil / pore water in the unsaturated zone). The definition of groundwater under the Groundwater Directive however is limited to water in the saturated zone. For the purposes of Part IIA of the Environmental Protection Act 1990, the Environment Agency recommends that the groundwater within the saturated zone only is considered as the receptor (rather than soil / pore water).

Environment Agency's Aquifer Designations

The Environment Agency have classified different types of aquifer from which groundwater can be extracted. The aquifer designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey.

The maps are split into two different types of aquifer designation:

- **Superficial (Drift)** – permeable unconsolidated (loose) deposits.
- **Bedrock (Solid)**– solid permeable formations e.g. sandstone, chalk, limestone.

The aquifer designations displayed on the Environment Agency maps are as follows:

- **Principal Aquifers (formerly termed Major Aquifers) –** These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as a major aquifer.
- **Secondary Aquifers (formerly termed Minor Aquifers) –** These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:
    - **Secondary A** - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers;
    - **Secondary B** - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
    - - **Secondary Undifferentiated** - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
- **Unproductive Strata (formerly termed Non-Aquifer) –** These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

MANAGEMENT OF CONTAMINATED LAND

When risk assessment of the site has been completed and this indicates that remedial works are required, the main guidance in managing this process is set out in the Defra/EA publication CLR11 (2004) “Model Procedures for the Management of Land Contamination.” The stages of managing remediation are as follows:

(a) Options Appraisal and develop Remediation Strategy;

(b) Develop Implementation Plan and Verification Plan;

(c) Remediation, Verification and Monitoring.

The Remediation Strategy sets out the remediation targets, identifies technically feasible remedial solutions and presents an evaluation of the options so that these can be assessed enabling that the most suitable solution is adopted. An outline of the proposed remedial method should be presented. Agreement should be sought of the appropriate statutory bodies for the Remediation Strategy before proceeding to the next stage.

The Implementation Plan is a detailed method statement setting out how the remediation is to be carried out including stating how the site will be managed, welfare procedures, health and safety considerations together with practical measures such as details of temporary works, programme of works, waste management licences and regulatory consents required. Agreement should again be sought of the appropriate statutory bodies for this Plan.

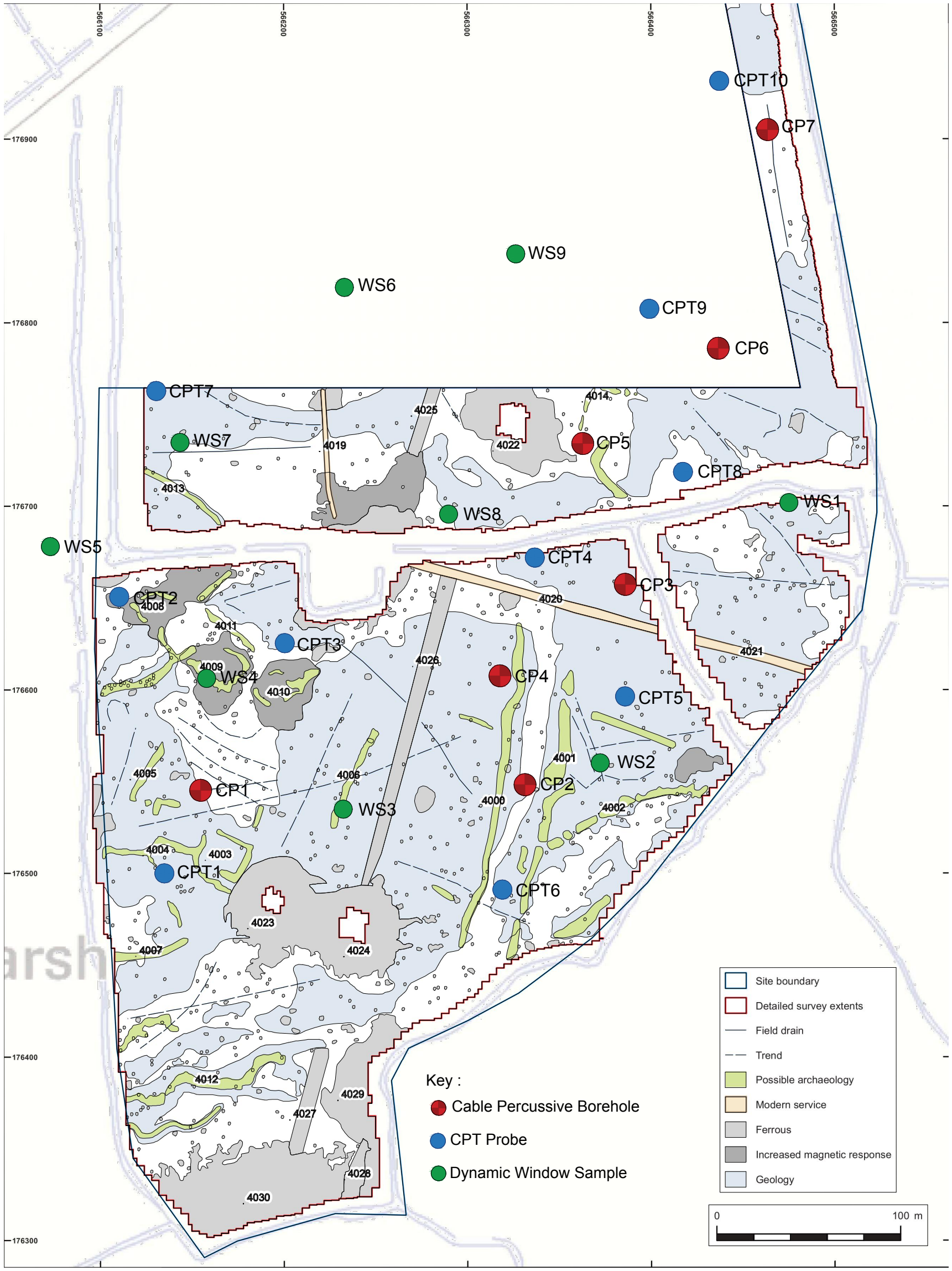
The Verification Plan sets out the requirements for gathering data to demonstrate that the remediation has met the required remediation objectives and criteria. The Verification Plan presents the requirements for a wide range of issues including the level of supervision, sampling and testing regimes for treated materials, waste and imported materials, required monitoring works during and post remediation, how compliance with all licenses and consents will be checked etc. Agreement should again be sought of the appropriate statutory bodies for the Verification Plan. On completion of the remediation a Verification Report should be produced to provide a complete record of all remediation activities on site and the data collected as required in the Verification Plan. The Verification Report should demonstrate that the remediation has met the remedial targets to show that the site is suitable for the proposed use.

GLOSSARY

TERMS		UNITS	
AST	Above Ground Storage Tank	m	Metres
BGS	British Geological Survey	km	Kilometres
BSI	British Standards Institute	%	Percent
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes	%v/v	Percent volume in air
CIEH	Chartered Institute of Environmental Health	mb	Milli Bars (atmospheric pressure)
CIRIA	Construction Industry Research Association		
CLEA	Contaminated Land Exposure Assessment	l/hr	Litres per hour
CSM	Conceptual Site Model	ha	Hectare (10,000 m^2)
DNAPL	Dense Non-Aqueous Phase Liquid (chlorinated solvents, PCB)	µg/l	Micrograms per Litre (parts per billion)
DWS	Drinking Water Standard	ppb	Parts Per Billion
EA	Environment Agency	mg/kg	Milligrams per kilogram (parts per million)
EQS	Environmental Quality Standard		
GAC	General Assessment Criteria	ppm	Parts Per Million
GL	Ground Level	mg/m^3	Milligram per metre cubed
GSV	Gas Screening Value	Mg/m^3	Megagram per metre cubed
HCV	Health Criteria Value	$µg/m^3$	Microgram per metre cubed
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel)	m bgl	Metres Below Ground Level
ND	Not Detected	m bcl	Metre Below Cover Level
LMRL	Lower Method Reporting Limit	mOD	Metres Above Ordnance Datum (sea level)
NR	Not Recorded		
OD	Ordnance Datum	kN/m^2	Kilo Newtons per metre squared
PAH	Poly Aromatic Hydrocarbon		
PCB	Poly-Chlorinated Biphenyl	kPa	Kilo Pascal – same as kN/m^2
PID	Photo Ionisation Detector	µm	Micro metre
PCSM	Preliminary Conceptual Site Model		
SGV	Soil Guideline Value		
TPH (CWG)	Total Petroleum Hydrocarbon (Criteria Working Group)		
SPT	Standard Penetration Test		
SVOC	Semi Volatile Organic Compound		
UST	Underground Storage Tank		
VCCs	Vibro Concrete Columns		
VSCs	Vibro Stone Columns		
VOC	Volatile Organic Compound		

Appendix C

Fieldwork Records



TerraConsult

9 The Courtyard, Phoenix Square,
Wyncolls Road
COLCHESTER, CO4 9PE

Client

Statera

Site

Statera Tilbury

Title

Borehole Location Plan

Scale		Scale Bar	@ A3
Drawing No.		4693-1-001	
Rev	Date	Description	
File	4593-1-001 Borehole Location Plan.dwg		
Date:	27-09-2019	Engineer:	TM
Drawn:	DF	Checked:	AS

Exploratory Hole Key Sheet

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SAMPLES:

Undisturbed:	
U	Driven tube sample
UT	Thin wall driven tube sample
TW	Pushed thin wall tube sample
P	Pushed piston sample
L	Liner sample (from windowless or similar sampler), full recovery unless otherwise stated
CBR	CBR mould sample
BLK	Block sample
C	Core sample (from rotary core) taken for laboratory testing
Disturbed:	
D	Small sample
B	Bulk sample
AMAL	Amalgamated sample
Environmental:	
ES	Environmental soil sample
EW	Environmental water sample

Comments: Sample reference numbers are assigned to every sample taken. A sample reference of 'NR' indicates that an attempt was made to take a tube sample; however, there was no recovery. Sample recovery is given as a percentage.

TESTS:

SPT S or SPT C	Standard Penetration Test, open shoe (S) or solid cone (C)
	The Standard Penetration Test is defined in BS EN ISO 22476-3 (2005). The incremental blow counts are given in the Field Records column; each increment is 75mm unless stated otherwise and any penetration under self weight in mm (SW) is noted. Where the full 300mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach 50 (either in total or for a single increment) the total blow count beyond the seating drive is given (without the N = prefix).
ICBR	In situ CBR
IV	In situ vane shear strength, peak (p) and remoulded (r), kPa
HV	Hand vane shear strength, peak (p) and remoulded (r), kPa
PP	Pocket penetrometer test, converted to shear strength, kPa
KFH, KRH, KPI	Variable head permeability tests (KFH = falling head test, KRH = rising head test, KPI = packer test), permeability value
PID/FID	Photo-ionisation detector/Flame-ionisation detector
	Test results provided in Field Records column

DRILLING RECORDS:

The mechanical indices (TCR/SCR/RQD & If) are defined in BS 5930: 2015 and BS EN ISO 22575-1 (2006)

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm. Minimum, typical and maximum spacings are presented.
NI	Non intact is used where the core is fragmented.
CRF	Core recovered (length in m) in the following run
AZCL	Assessed zone of core loss
NR	Not recovered

GROUNDWATER:

▽ Groundwater strike

▼ Groundwater level after standing period

DEPTH REMARKS:

EoS	End of Shift
SoS	Start of Shift
EoBH	End of Borehole

INSTRUMENTATION:

Details of installations are given on the Record. Legend column shows installed instrument depths including slotted pipe section or tip depth, response zone filter material type and layers of backfill. The type of instrument installed is indicated by a code adjacent to the Legend column at the base of the instrument.

SP	Standpipe
SPIE	Standpipe piezometer
PPIE	Pneumatic piezometer
EPIE	Electronic piezometer
AP	Access pipe
GMP	Gas monitoring standpipe
(xx)	Internal diameter (mm)
ICE	Biaxial inclinometer
ICM	Inclinometer tubing for use with probe
SLIP	Slip indicator
ESET	Electronic settlement cell/gauge
ETM	Magnetic extensometer settlement point
ETR	Rod extensometer

EXPLORATORY HOLE TYPE:

CP	Cable percussion
DP	Dynamic probe
DCP	Dynamic cone penetrometer
HA	Hand auger
IP	Inspection pit
OP	Observation pit/trench
PC	Pavement core
RC	Rotary core
RO	Rotary open hole
SH	Shaft
SNC	Sonic (resonance)
TP	Trial pit/trench
TRAV	Traverse
WLS	Windowless (dynamic) sample
WS	Window (dynamic) sample

AGS

Project: **Tilbury Power**
Project No: **4593**
Client: **Statera Energy Ltd**

Reference

KEY SHEET

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.70	10-09-19	13-09-19	KG/TM	Dando 3000	n/a	n/a	13-09-19	TM	Hammer ID: SI1 Er(%) 72

Location details:

mE:	566123.80
mN:	176594.69
mAOD:	1.54
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing				
						Water	Casing	Depth	Type & No	Results/Remarks
				(0.50)	Greyish brown CLAY. Abundant rootlets. (TOPSOIL)					
			1.04	0.50	Grey mottled brown CLAY. Occasional pockets of dark brownish black organic matter. Occasional selenite crystal. Abundant rootlets. (ALLUVIUM)			0.50 0.60 - 1.10	D1 B1	
				(0.90)						
			0.14	1.40	Very soft grey silty CLAY. (ALLUVIUM)			1.50 - 1.95	U1	8 (100%)
								1.95 - 2.00	D2	
						Dry		2.50 - 2.95 2.50 - 2.95 2.50 - 2.95	S B2 D3	N=0 (0,0/0,0,0,0)
						Dry	3.00	3.50 - 3.95 3.50 - 3.95	S D4	N=0 (0,0/0,0,0,0)
						Dry	4.50	4.50 - 4.95 4.50 - 4.95	S D5	N=0 (1,0/0,0,0,0)
								5.50	D6	
						Dry	6.00	6.00 - 6.45 6.00 - 6.45	S D7	N=0 (0,0/0,0,0,0)
				(9.80)						
								7.00	D8	
						Dry	7.50	7.50 - 7.95 7.50 - 7.95	S D9	N=0 (1,0/0,0,0,0)
								8.00 - 8.50	B3	
						Dry	9.00	9.00 - 9.45 9.00 - 9.45	S D10	N=0 (1,0/0,0,0,0)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	14.00	13.50
150	24.70	24.70

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

CP1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.70	10-09-19	13-09-19	KG/TM	Dando 3000	n/a	n/a	13-09-19	TM	Hammer ID: SI1 Er(%) 72

Location details:

mE: 566123.80
mN: 176594.69
mAOD: 1.54
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing				
						Water	Casing	Depth	Type & No	Results/Remarks
					Very soft grey silty CLAY. (ALLUVIUM)			10.00	D11	
						Dry	10.50	10.50 - 10.95	S	N=0 (0,0/0,0,0,0)
								10.50 - 10.95	B4	
			-9.66	11.20	Loose grey sandy silty GRAVEL of fine to medium subangular to subrounded flint. (ALLUVIUM)			11.40	D12	
				(2.10)		5.84	12.00	12.00 - 12.45	C	N=8 (1,0/1,2,2,3)
								12.00 - 12.45	B5	
			-11.76	13.30	Plastic dark brownish black pseudo-fibrous PEAT. (ALLUVIUM)			13.30	D13	
				(0.40)		11.20	13.50	13.50 - 13.95	S	N=9 (2,3/3,2,2,2)
								13.50 - 13.95	D14	
			-12.16	13.70	Loose grey sandy GRAVEL of subangular to subrounded flint. (ALLUVIUM)			13.70 - 14.20	B6	
				(0.50)						
			-12.66	14.20	Very soft grey silty CLAY. (ALLUVIUM)			14.20 - 15.00	B7	
				(0.80)						
			-13.46	15.00	Medium dense becoming dense grey sandy GRAVEL of subangular to subrounded flint. (ALLUVIUM)	2.80	15.00	15.00 - 15.45	S	N=14 (2,3/3,3,4,4)
								15.00	D15	
								15.00 - 15.50	B8	
				(4.70)		3.00	16.50	16.50 - 16.95	C	N=33 (3,3/5,7,9,12)
								16.50 - 16.95	B9	
						3.00	18.00	18.00 - 18.45	C	N=46 (5,6/7,9,13,17)
								18.00 - 18.45	B10	
						3.00	19.50	19.50 - 19.95	S	N=23 (3,4/6,6,5,6)
			-18.16	19.70	Recovered as: structureless CHALK composed of slightly silty GRAVEL. Gravel is weak medium density angular to subrounded white chalk and			19.70 - 20.00	B11	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
11.20	5.79		

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	14.00	13.50
150	24.70	24.70

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.70	10-09-19	13-09-19	KG/TM	Dando 3000	n/a	n/a	13-09-19	TM	Hammer ID: SI1 Er(%) 72

Location details:

mE:	566123.80
mN:	176594.69
mAOD:	1.54
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Recovered as: structureless CHALK composed of slightly silty GRAVEL. Gravel is weak medium density angular to subrounded white chalk and rare medium subrounded flint. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)					
						2.70	21.00	21.00 - 21.45 21.00 - 21.45	S D16	N=15 (1,2/4,4,3,4)
				(5.00)						
						2.70	22.50	22.50 - 22.95 22.50 - 22.95	S D17	N=16 (4,3/4,4,4,4)
						2.70	24.00	24.00 - 24.45 24.00 - 24.45	S D18	N=31 (4,5/7,7,8,9)
	(19)									
	SPIE (19)		-23.16	24.70	Borehole ends at 24.70m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	14.00	13.50
150	24.70	24.70

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

CP1

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	10-09-19	11-09-19	SH	Dando 3000	n/a	n/a	11-09-19	TM	

Location details:

mE: 566343.77
mN: 176576.84
mAOD: 1.36
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing				
						Water	Casing	Depth	Type & No	Results/Remarks
			1.26	0.10	Greyish brown CLAY. Abundant rootlets. (TOPSOIL)			0.10 - 0.50	B1	
				(1.20)	Greyish brown slightly gravelly CLAY. Gravel is fine subrounded flint. Abundant rootlets. (ALLUVIUM)			0.50 0.50 - 1.00	D1 B2	
			0.06	1.30	Very soft grey mottled orangish brown silty peaty CLAY. (ALLUVIUM)			1.30 1.50 1.50 - 2.00	D3 U1 B3	 20 (66%)
						Dry	2.50	2.50 - 2.95 2.50 - 2.95	S D4	N=0 (0,0/0,0,0,0)
				(4.70)				3.50 3.50 3.90 4.00 - 4.50	D5 U2 D6 B4	11 (66%)
						Dry	4.50	4.50 - 4.95 4.50 - 4.95	S D7	N=0 (0,0/0,0,0,0)
			-4.64	6.00	Plastic black and brownish black pseudo-fibrous PEAT. Laminations of plant remains. (ALLUVIUM)			6.00	U3	40 (88%)
				(1.20)				6.50 6.50 - 7.00	D8 B5	
			-5.84	7.20	Very soft grey mottled orangish brown peaty CLAY. (ALLUVIUM)			7.20	D9	
						Dry	7.50	7.50 - 7.95 7.50 - 7.95	S D10	N=0 (0,0/0,0,0,0)
				(1.80)						
			-7.64	9.00	Very soft grey CLAY. (ALLUVIUM)	Dry	9.00	9.00 - 9.45 9.00 - 9.45	S D11	N=0 (0,0/0,0,0,0)
	Inst (Ø)			(2.00)		Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	19.50	19.50
150	24.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP2

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	10-09-19	11-09-19	SH	Dando 3000	n/a	n/a	11-09-19	TM	

Location details:

mE: 566343.77
mN: 176576.84
mAOD: 1.36
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing				
						Water	Casing	Depth	Type & No	Results/Remarks
					Very soft grey CLAY. (ALLUVIUM)	Dry	10.50	10.50 - 10.95	S	N=0 (1,0/0,0,0,0)
			-9.64	11.00	Very soft grey sandy CLAY. (ALLUVIUM)	4.10	12.00	12.00 - 12.45 12.00 - 12.45 12.00 - 12.50	S D13 B6	N=0 (0,0/0,0,0,0)
				(5.10)		5.90	13.50	13.50 - 13.95 13.50 - 13.95	S D14	N=2 (1,0/0,1,0,1)
						6.80	15.00	15.00 - 15.45 15.00 - 15.45	S D15	N=2 (1,0/0,1,1,0)
			-14.74	16.10	Loose grey sandy GRAVEL of subangular to subrounded flint and occasional cobbles. (ALLUVIUM)	5.10	16.50	16.50 - 16.95 16.50 16.50 - 17.00	C D16 B7	N=8 (1,1/2,2,2,2)
				(2.90)		3.10	18.00	18.00 - 18.45 18.00 18.00 - 18.50	C D17 B8	N=9 (1,1/2,2,2,3)
			-17.64	19.00	Recovered as: structureless CHALK composed of slightly silty gravel and occasional cobbles. Clasts are weak low and medium density angular to subrounded white with occasional fine to medium subangular to subrounded flint. Matrix is white. Occasional gravel of fine to medium subangular to subrounded flint. (Grade Dc) (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK			19.00 - 19.50	B9	
						4.90	19.50	19.50 - 19.95 19.50 - 19.95	S D18	N=7 (1,2/1,2,2,2)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	19.50	19.50
150	24.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP2

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	10-09-19	11-09-19	SH	Dando 3000	n/a	n/a	11-09-19	TM	

Location details:

mE:	566343.77
mN:	176576.84
mAOD:	1.36
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Recovered as: structureless CHALK composed of slightly silty gravel and occasional cobbles. Clasts are weak low and medium density angular to subrounded white with occasional fine to medium subangular to subrounded flint. Matrix is white. Occasional gravel of fine to medium subangular to subrounded flint. (Grade Dc) (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)	3.00	21.00	21.00 - 21.45 21.00 - 21.45	S D19	N=28 (2,4/13,5,5,5)
				(5.45)		2.80	22.50	22.50 - 22.95 22.50 - 22.95	S D20	N=7 (1,2/2,2,2,1)
	(19) SPIE (19)					2.60	24.00	24.00 - 24.45 24.00 - 24.45	S D21	N=14 (3,3/3,3,4,4)
			-23.09	24.45	Borehole ends at 24.45m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	19.50	19.50
150	24.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

CP2

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	25.00	12-09-19	13-09-19	SH	Dando 3000	n/a	n/a	13-09-19	TM	

Location details:

mE: 566394.74
mN: 176654.51
mAOD: 1.29
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				(0.50)	Brown CLAY. Abundant rootlets. (TOPSOIL)					
			0.79	0.50	Firm orangish brown mottled grey CLAY. Occasional rootlet. (ALLUVIUM)			0.50 0.50 - 1.00	D1 B1	
				(0.70)						
			0.09	1.20	very soft brown peaty CLAY. (ALLUVIUM)			1.20	D2	
				(0.30)						
			-0.21	1.50	Plastic black and brownish black pseudo-fibrous PEAT. Laminations of plant remains. (ALLUVIUM)			1.50 1.50	D3 U1	9 (66%)
				(0.30)						
			-0.51	1.80	Very soft, grey laminated orangish brown slightly silty peaty CLAY. Bands of black organic CLAY. Occasional decayed wood and selenite crystal. (ALLUVIUM)			2.00 2.00 - 2.50	D4 B2	
						Dry	2.50	2.50 - 2.95 2.50 - 2.95	S D5	N=0 (0,0/0,0,0,0)
				(3.50)		Dry	3.50	3.50 - 3.95 3.50 - 3.95	S D6	N=0 (0,0/0,0,0,0)
						Dry	4.50	4.50 - 4.95 4.50 - 4.95	S D7	N=0 (0,0/0,0,0,0)
			-4.01	5.30				5.30	D8	
				(0.50)	Very soft, grey laminated orangish brown slightly silty peaty CLAY. Bands of black organic CLAY. Occasional decayed wood and selenite crystal. Drier than above.					
			-4.51	5.80	(ALLUVIUM)					
	▼				Plastic brown pseudo-fibrous PEAT. (ALLUVIUM)			6.00 6.00	D9 U2	35 (88%)
				(1.70)				6.50	D10	
			-6.21	7.50	Very soft grey peaty CLAY. (ALLUVIUM)	Dry	7.50	7.50 - 7.95 7.50 - 7.95	S D11	N=0 (0,0/0,0,0,0)
				(1.00)						
			-7.21	8.50	Very soft light grey CLAY. (ALLUVIUM)			8.50 - 9.00	B3	
						8.50	9.00	9.00 - 9.45 9.00	S D12	N=0 (0,0/0,0,0,0)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	21.00	21.00
150	25.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP3

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	25.00	12-09-19	13-09-19	SH	Dando 3000	n/a	n/a	13-09-19	TM	

Location details:

mE: 566394.74
mN: 176654.51
mAOD: 1.29
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				(4.50)	Very soft light grey CLAY. (ALLUVIUM)	10.00	10.50	10.50 - 10.95 10.50	S D13	N=0 (0,0/0,0,0,0)
						10.50	12.00	12.00 - 12.45 12.00 - 12.45	S D14	N=0 (1,0/0,0,0,0)
			-11.71	13.00				13.00	D15	
				(1.50)	Very soft grey peaty CLAY. (ALLUVIUM)	12.80	13.50	13.50 - 13.95 13.50 - 13.95 13.50 - 14.00	S D16 B4	N=1 (1,0/0,1,0,0)
			-13.21	14.50				14.50	D17	
				(0.50)	Soft grey very peaty CLAY. (ALLUVIUM)					
	▽		-13.71	15.00	Medium dense grey coarse SAND and GRAVEL of angular to subrounded flint. (ALLUVIUM)	9.10	15.00	15.00 - 15.45 15.00	S D18	N=13 (1,2/2,2,4,5)
								15.50 - 16.00	B5	
								16.00	D19	
						5.40	16.50	16.50 - 16.95 16.50 - 17.00	C B6	N=9 (1,1/2,2,2,3)
				(5.30)						
						3.60	18.00	18.00 - 18.45 18.00 18.00 - 18.50	C D20 B7	N=11 (1,0/2,2,3,4)
						3.00	19.50	19.50 - 19.95 19.50 19.50 - 20.00	C D21 B8	N=11 (1,2/2,3,3,3)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
15.00	6.20	15.00	

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	21.00	21.00
150	25.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP3

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	25.00	12-09-19	13-09-19	SH	Dando 3000	n/a	n/a	13-09-19	TM	

Location details:

mE:	566394.74
mN:	176654.51
mAOD:	1.29
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
			-19.01	20.30	Medium dense grey coarse SAND and GRAVEL of angular to subrounded flint. (ALLUVIUM)			20.30	D22	
					Recovered as: structureless CHALK composed of slightly silty gravel and occasional cobbles. Clasts are weak low and medium density angular to subrounded white with occasional fine to medium subangular to subrounded flint. Matrix is white. Occasional gravel of fine to medium subangular to subrounded flint. (Grade Dc) (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)	2.80	21.00	21.00 - 21.45 21.00 - 21.45	S D23	N=3 (1,0/0,1,1,1)
				(4.70)		1.70	22.50	22.50 - 22.95 22.50 - 22.95	S D24	N=10 (3,2/2,2,3,3)
	(19)					1.50	24.00	24.00 - 24.45 24.00 - 24.45	S D25	N=13 (2,3/3,3,3,4)
	SPIE (19)		-23.71	25.00	Borehole ends at 25.00m (Target depth)			25.00	D26	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	21.00	21.00
150	25.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **CP3**

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.10	16-09-19	17-09-19	SH	Dando 3000	n/a	n/a	17-09-19	TM	

Location details:

mE: 566327.41
mN: 176621.19
mAOD: 1.41
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
			1.31	0.10	Brown CLAY. Abundant roots and rootlets. (TOPSOIL)			0.00 - 0.50	B1	
				(0.80)	Firm brownish grey CLAY. Abundant rootlets. (ALLUVIUM)			0.50	D1	
								0.50 - 1.00	B2	
			0.51	0.90	Soft grey mottled orangish brown laminated CLAY. Occasional iron stained laminations. Occasional rootlets. (ALLUVIUM)			1.00	D2	
				(1.00)				1.50	D3	14 (88%)
								1.50	U1	
			-0.49	1.90	Very soft dark grey slightly silty peaty CLAY. (ALLUVIUM)			2.00	D4	
								2.00 - 2.50	B3	
						Dry	2.50	2.50 - 2.95	S	N=0 (0,0/0,0,0,0)
								2.50 - 2.95	D5	
								3.50	D6	12 (88%)
				(3.60)				3.50	U2	
								4.00	D7	
						Dry	4.50	4.50 - 4.95	S	N=0 (0,0/0,0,0,0)
								4.50 - 4.95	D8	
			-4.09	5.50	Soft dark grey slightly silty very peaty CLAY. (ALLUVIUM)			5.50	D9	
				(0.40)						
			-4.49	5.90	Plastic dark brownish black pseudo-fibrous PEAT. (ALLUVIUM)			5.90	D10	
								6.00	U3	42 (88%)
				(1.30)				6.50	D11	
			-5.79	7.20	Very soft dark grey silty peaty CLAY. (ALLUVIUM)					
						Dry	7.50	7.50 - 7.95	S	N=0 (0,0/0,0,0,0)
								7.50	D12	
				(1.30)				7.50 - 8.00	B4	
			-7.09	8.50	Very soft dark grey silty peaty CLAY. (ALLUVIUM)					
						Dry	9.00	9.00 - 9.45	S	N=0 (0,0/0,0,0,0)
								9.00 - 9.45	D13	
				(2.50)						
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.10	23.10

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP4

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.10	16-09-19	17-09-19	SH	Dando 3000	n/a	n/a	17-09-19	TM	

Location details:

mE: 566327.41
mN: 176621.19
mAOD: 1.41
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Very soft dark grey silty peaty CLAY. (ALLUVIUM)	Dry	10.50	10.50 - 10.95 10.50	S D14	N=0 (0,0/0,0,0,0)
			-9.59	11.00						
					Very soft dark grey silty very peaty CLAY. (ALLUVIUM)					
				(1.00)						
			-10.59	12.00		3.00	12.00	12.00 - 12.45 12.00	S D15	N=0 (1,0/0,0,0,0)
					Very soft grey peaty CLAY. (ALLUVIUM)					
				(2.50)						
						3.40	13.50	13.50 - 13.95 13.50 - 13.95	S D16	N=1 (1,0/0,0,1,0)
			-13.09	14.50				14.50 - 15.00	B5	
					Very soft grey sandy peaty CLAY. (ALLUVIUM)					
				(0.70)		2.40	15.00	15.00 - 15.45 15.00 - 15.45	S D17	N=7 (1,1/1,1,2,3)
			-13.79	15.20						
					Loose grey coarse SAND and GRAVEL of subangular to subrounded flint. (ALLUVIUM)					
				(2.90)		2.50	16.50	16.50 - 16.95 16.50 16.50 - 17.00	C D18 B6	N=10 (1,2/2,2,3,3)
			-16.69	18.10		2.30	18.00	18.00 - 18.45 18.00 18.10 18.10 - 18.60	C D19 D20 B7	N=11 (1,1/2,3,4,2)
					Recovered as: structureless CHALK composed of slightly silty GRAVEL. Gravel is weak medium density angular to subrounded white chalk and rare medium subrounded flint. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)					
				(1.90)						
						4.30	19.50	19.50 - 19.95 19.50 - 19.95	S D21	N=5 (1,1/1,1,1,2)
	Inst (Ø)		-18.59	20.00		Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.10	23.10

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP4

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.10	16-09-19	17-09-19	SH	Dando 3000	n/a	n/a	17-09-19	TM	

Location details:

mE:	566327.41
mN:	176621.19
mAOD:	1.41
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Structureless CHALK recovered as medium to coarse gravel of subangular white chalk. Occasional gravel of fine to medium subangular to subrounded flint. (Grade Dc) (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)					
				(3.10)		4.70	21.00	21.00 - 21.45 21.00 - 21.45	S D22	N=5 (1,0/1,1,1,1,2)
	(19)					3.00	22.50	22.50 - 22.95 22.50 - 22.95	S D23	N=12 (3,2/2,3,3,3,4)
	SPIE (19)		-21.69	23.10	Borehole ends at 23.10m (Target depth)			23.10	D24	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.10	23.10

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **CP4**

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	18-09-19	19-09-19	SH	Dando 3000	n/a	n/a	19-09-19	TM	

Location details:

mE: 566384.14
mN: 176752.40
mAOD: 1.22
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
			1.02	0.20	Greyish brown mottled orangish brown slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded flint. Abundant roots and rootlets. (TOPSOIL)			0.20 - 1.00	B1	
								0.50	D1	
				(1.10)	Firm grey mottled dark orange and orangish brown CLAY. Lighter grey and dark orange gleying. (ALLUVIUM)					
								1.00	D2	
			-0.08	1.30						
				(0.30)	Plastic brown pseudo-fibrous PEAT. (ALLUVIUM)			1.50	D3	11 (88%)
			-0.38	1.60				1.50	U1	
					Very soft grey silty peaty laminated CLAY. Laminations are orangish brown, dark grey and light grey. (ALLUVIUM)					
								2.00	D4	
								2.00 - 2.50	B2	
	▼					Dry	2.50	2.50 - 2.95	S	N=0 (0,0/0,0,0,0)
								2.50 - 2.95	D5	
				(2.40)						
								3.50	D6	14 (88%)
								3.50	U2	
			-2.78	4.00	Very soft dark grey silty peaty CLAY. (ALLUVIUM)			4.00	D7	
						Dry	4.50	4.50 - 4.95	S	N=0 (0,0/0,0,0,0)
								4.50 - 4.95	D8	
				(1.80)						
			-4.58	5.80				5.80	D9	
					Firm black and dark brown pseudo-fibrous PEAT. Frequent laminations of plant remains. Occasional relic roots. (ALLUVIUM)			6.00	U3	65 (88%)
				(0.70)						
			-5.28	6.50				6.50	D10	
					Spongy brown and orangish brown fibrous PEAT. Abundant small shells and shell fragments. (ALLUVIUM)					
				(0.70)						
			-5.98	7.20				7.20	D11	
					Very soft grey and dark grey peaty CLAY. (ALLUVIUM)					
						Dry	7.50	7.50 - 7.95	S	N=0 (0,0/0,0,0,0)
								7.50 - 7.95	D12	
				(1.10)						
			-7.08	8.30				8.30	D13	
					Very soft grey silty CLAY. (ALLUVIUM)					
						Dry	9.00	9.00 - 9.45	S	N=0 (0,0/0,0,0,0)
								9.00 - 9.45	D14	
				(2.70)						
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	24.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP5

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	18-09-19	19-09-19	SH	Dando 3000	n/a	n/a	19-09-19	TM	

Location details:

mE: 566384.14
mN: 176752.40
mAOD: 1.22
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Very soft grey silty CLAY. (ALLUVIUM)	Dry	10.50	10.50 - 10.95 10.50	S D15	N=0 (0,0/0,0,0,0)
			-9.78	11.00	Very soft grey silty peaty CLAY. (ALLUVIUM)			11.00 11.00 - 11.50	D16 B3	
				(3.50)		Dry	12.00	12.00 - 12.45 12.00 - 12.45	S D17	N=0 (1,0/0,0,0,0)
						Dry	13.50	13.50 - 13.95 13.50 - 13.95	S D18	N=2 (1,0/0,1,0,1)
			-13.28	14.50	Loose grey medium to coarse SAND and GRAVEL of subangular to rounded flint with occasional cobble. (ALLUVIUM)			14.50	D19	
						2.40	15.00	15.00 - 15.45 15.00 15.00 - 15.50	C D20 B4	N=8 (1,1/1,2,3,2)
				(4.50)		2.30	16.50	16.50 - 16.95 16.50	C D21	N=9 (1,0/1,2,3,3)
						2.10	18.00	18.00 - 18.45 18.00 18.00 - 18.50	C D22 B5	N=13 (1,1/2,3,3,5)
			-17.78	19.00	Recovered as: structureless CHALK composed of slightly silty gravel. Gravel is weak medium density angular to subrounded white chalk and rare medium subrounded flint. Flint becomes rare with depth. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)			19.00	D23	
						2.40	19.50	19.50 - 19.95 19.50	S D24	N=6 (1,1/2,2,1,1)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
14.50	2.40	14.50	

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	24.00	24.00

Depth related remarks:

From: To: Remarks:

Chiselling details:

From: to: Duration: Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP5

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	24.45	18-09-19	19-09-19	SH	Dando 3000	n/a	n/a	19-09-19	TM	

Location details:

mE:	566384.14
mN:	176752.40
mAOD:	1.22
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Recovered as: structureless CHALK composed of slightly silty gravel. Gravel is weak medium density angular to subrounded white chalk and rare medium subrounded flint. Flint becomes rare with depth. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)	2.50	21.00	21.00 - 21.45 21.00 - 21.45	S D25	N=11 (1,1/1,4,3,3)
								21.50 - 22.00	B6	
				(5.45)		2.60	22.50	22.50 - 22.95 22.50 - 22.95	S D26	N=6 (1,1/1,1,2,2)
	(19)									
	SPIE (19)					2.40	24.00	24.00 - 24.45 24.00 - 24.45	S D27	N=11 (1,1/2,2,3,4)
			-23.23	24.45	Borehole ends at 24.45m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	24.00	24.00

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

CP5

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	19-09-19	20-09-19	SH	Dando 3000	n/a	n/a	20-09-19	TM	

Location details:

mE: 566453.65
mN: 176779.81
mAOD: 1.37
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
			1.17	0.20	Greyish brown mottled orangish brown slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded flint. Abundant roots and rootlets. (TOPSOIL)			0.50	D1	
				(0.80)	Firm greyish brown mottled orangish brown CLAY. (ALLUVIUM)			0.50 - 1.50	B1	
			0.37	1.00	Soft grey mottled orangish brown silty peaty CLAY. Occasional relic roots. (ALLUVIUM)			1.50	D2	12 (88%)
								1.50	U1	
				(1.50)				2.00	D3	
	▼		-1.13	2.50	Very soft grey silty slightly peaty CLAY. (ALLUVIUM)	Dry	2.50	2.50 - 2.95	S	N=0 (0,0/0,0,0,0)
								2.50 - 2.95	D4	
								3.00 - 3.50	B2	
								3.50	D5	14 (88%)
								3.50	U2	
				(3.00)						
						Dry	4.50	4.50 - 4.95	S	N=0 (0,0/0,0,0,0)
								4.50 - 4.95	D6	
			-4.13	5.50	Firm dark brownish black pseudo-fibrous PEAT. Occasionally clayey. (ALLUVIUM)			5.50	D7	
				(1.00)				6.00	U3	61 (88%)
			-5.13	6.50	Firm dark brownish black pseudo-fibrous PEAT. (ALLUVIUM)			6.50	D8	
				(0.50)						
			-5.63	7.00	Very soft grey occasionally mottled dark grey silty peaty CLAY. (ALLUVIUM)			7.00	D9	
						Dry	7.50	7.50 - 7.95	S	N=0 (0,0/0,0,0,0)
				(1.30)				7.50 - 7.95	D10	
			-6.93	8.30	Very soft grey silty CLAY. (ALLUVIUM)			8.30	D11	
						Dry	9.00	9.00 - 9.45	S	N=0 (0,0/0,0,0,0)
								9.00	D12	
				(2.90)						
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.50	23.50

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP6

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	19-09-19	20-09-19	SH	Dando 3000	n/a	n/a	20-09-19	TM	

Location details:

mE: 566453.65
mN: 176779.81
mAOD: 1.37
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Very soft grey silty CLAY. (ALLUVIUM)	Dry	10.50	10.50 - 10.95 10.50 - 10.95	S D13	N=0 (0,0/0,0,0,0)
			-9.83	11.20	Very soft grey silty slightly sandy peaty CLAY. (ALLUVIUM)			11.20	D14	
				(1.30)		Dry	12.00	12.00 - 12.45 12.00 - 12.45	S D15	N=0 (0,0/0,0,0,0)
	▽		-11.13	12.50	Loose becoming medium dense grey coarse SAND and GRAVEL of subangular to rounded flint. (ALLUVIUM)			12.50	D16	
						2.70	13.50	13.50 - 13.95 13.50 13.50 - 14.00	C D17 B3	N=9 (1,0/1,2,3,3)
						2.40	15.00	15.00 - 15.45 15.00 15.00 - 15.50	C D18 B4	N=9 (1,1/2,2,3,2)
				(6.00)						
						2.70	16.50	16.50 - 16.95 16.50 16.50 - 17.00	C D19 B5	N=14 (2,2/2,3,4,5)
						2.30	18.00	18.00 - 18.45 18.00 18.00 - 18.50	C D20 B6	N=21 (2,3/5,5,6,5)
			-17.13	18.50	Recovered as: structureless CHALK composed of slightly silty gravel. Gravel is weak medium density subangular white chalk and rare medium subrounded flint. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)			18.50	D21	
						2.40	19.50	19.50 - 19.95 19.50	S D22	N=16 (1,0/2,3,4,7)
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
12.50	2.60	12.50	

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.50	23.50

Depth related remarks:

From: To: Remarks:

Chiselling details:

From: to: Duration: Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP6

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	19-09-19	20-09-19	SH	Dando 3000	n/a	n/a	20-09-19	TM	

Location details:

mE: 566453.65
mN: 176779.81
mAOD: 1.37
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				(4.00)	Recovered as: structureless CHALK composed of slightly silty gravel. Gravel is weak medium density subangular white chalk and rare medium subrounded flint. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)	2.30	21.00	21.00 - 21.45	S	N=10 (1,2/2,2,3,3)
								21.00 - 21.45	D23	
								21.50 - 22.00	B7	
	(19)		-21.13	22.50	Recovered as: structureless CHALK composed of slightly silty gravel. Gravel is weak medium density subangular white chalk. Matrix is white. (Grade Dc).	2.30	22.50	22.50 - 22.95	S	N=11 (2,2/2,2,3,4)
				(1.00)	(LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)			22.50 - 22.95	D24	
	SPIE (19)		-22.13	23.50	Borehole ends at 23.50m (Target depth)			23.50	D25	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	12.00	12.00
150	23.50	23.50

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP6

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	23-09-19	24-09-19	SH	Dando 3000	n/a	n/a	24-09-19	TM	

Location details:

mE: 566477.01
mN: 176884.00
mAOD: 1.32
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
			1.12	0.20	Greyish brown mottled orangish brown slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded flint. Abundant roots and rootlets. (TOPSOIL)			0.50	D1	
								0.50 - 1.50	B1	
				(1.70)	Firm grey mottled orangish brown slightly silty CLAY. Occasional sandy laminations and occasional selenite crystal. (ALLUVIUM)			1.50	D2	19 (88%)
								1.50	U1	
			-0.58	1.90				2.00	D3	
				(0.60)	Soft grey mottled orangish brown slightly silty peaty CLAY. Occasional light grey sandy laminations. (ALLUVIUM)			2.00 - 2.50	B2	
			-1.18	2.50		Dry	2.50	2.50 - 2.95	S	N=0 (0,0/0,0,0,0)
					Very soft dark grey silty peaty CLAY. (ALLUVIUM)			2.50 - 2.95	D4	
				(1.50)				3.50	D5	11 (88%)
								3.50	U2	
			-2.68	4.00				4.00	D6	
					Very soft light grey silty peaty CLAY. (ALLUVIUM)	Dry	4.50	4.50 - 4.95	S	N=0 (0,0/0,0,0,0)
								4.50 - 4.95	D7	
								5.50	D8	
								6.00	U3	19 (88%)
				(4.50)				6.50	D9	
								7.00 - 7.50	B3	
						Dry	7.50	7.50 - 7.95	S	N=0 (0,0/0,0,0,0)
								7.50 - 7.95	D10	
			-7.18	8.50	Very soft grey slightly sandy peaty CLAY. (ALLUVIUM)					
						Dry	9.00	9.00 - 9.45	S	N=1 (0,0/0,0,1,0)
								9.00 - 9.45	D11	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	11.00	10.50
150	23.50	23.50

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP7

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	23-09-19	24-09-19	SH	Dando 3000	n/a	n/a	24-09-19	TM	

Location details:

mE: 566477.01
mN: 176884.00
mAOD: 1.32
Grid: OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
				(3.30)	Very soft grey slightly sandy peaty CLAY. (ALLUVIUM)	Dry	10.50	10.50 - 10.95 10.50 - 10.95	S D12	N=0 (0,0/0,0,0,0)
			-10.48	11.80						
				(1.70)	Firm dark brownish black fibrous slightly clayey PEAT. Wood and plant remains throughout. (ALLUVIUM)	Dry	12.00	12.00 - 12.45 12.00 - 12.45	S D13	N=4 (1,1/1,1,1,1)
	▽		-12.18	13.50						
				(3.00)	Loose grey sandy GRAVEL of subangular to rounded flint. (ALLUVIUM)	2.80	13.50	13.50 - 13.95 13.50 13.50 - 14.00	C D14 B4	N=8 (1,0/1,1,2,4)
						2.40	15.00	15.00 - 15.45 15.00	C D15	N=8 (1,2/2,2,2,2)
			-15.18	16.50						
				(1.50)	Medium dense grey sandy GRAVEL of subangular to rounded flint and COBBLES of subangular flint. (ALLUVIUM)	2.30	16.50	16.50 - 16.95 16.50 16.50 - 17.00	C D16 B5	N=11 (1,0/2,3,2,4)
			-16.68	18.00						
				(0.50)	Loose brownish grey gravelly medium to coarse SAND. Gravel is subangular to subrounded flint and very fine chalk. (ALLUVIUM)	2.10	18.00	18.00 - 18.45 18.00 18.00 - 18.50	C D17 B6	N=10 (1,2/2,3,2,3)
			-17.18	18.50				18.50	D18	
				(1.00)	Recovered as: structureless CHALK composed of subangular gravel. Gravel is weak low density white with black flecks and medium to coarse subangular flint. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)					
			-18.18	19.50		2.40	19.50	19.50 - 19.95 19.50 - 19.95	S D19	N=10 (1,1/2,3,3,2)
					Recovered as: strucureless CHALK composed of subangular gravel. Gravel is weak low density white. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:
13.50	3.00	13.30	

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	11.00	10.50
150	23.50	23.50

Depth related remarks:

From: To: Remarks:

Chiselling details:

From: to: Duration: Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL
Scale: 1:50

Project: Tilbury Power
Project No: 4593
Client: Statera Energy Ltd

Exploratory position reference:

CP7

Borehole Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Barrel type:	Drill Bit:	Logged:	Logger:	Remarks:
CP	0.00	23.50	23-09-19	24-09-19	SH	Dando 3000	n/a	n/a	24-09-19	TM	

Location details:

mE:	566477.01
mN:	176884.00
mAOD:	1.32
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results/Remarks
					Recovered as: strucureless CHALK composed of subangular gravel. Gravel is weak low density white. Matrix is white. (Grade Dc). (LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION AND NEWHAVEN CHALK FORMATION)	2.50	21.00	21.00 - 21.45 21.00 - 21.45	S D20	N=8 (1,1/1,2,3,2)
				(4.00)		2.30	22.50	22.50 - 22.95 22.50 - 22.95	S D21	N=10 (1,1/2,2,2,4)
	(19)									
	SPIE (19)		-22.18	23.50	Borehole ends at 23.50m (Target depth)			23.50	D22	
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Diameter & casing:

Dia (mm):	Depth:	Casing:
200	11.00	10.50
150	23.50	23.50

Depth related remarks:

From:	To:	Remarks:

Chiselling details:

From:	to:	Duration:	Tool:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

CP7

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	19-09-19	19-09-19	HD	Dando Terrier 2002	TM	19-09-19	

Location details:

mE:	566475.91
mN:	176704.22
mAOD:	1.53
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.40)	Brown slightly gravelly CLAY. Gravel is fine to medium subangular flint. Abundant roots and rootlets. (TOPSOIL)			0.30	ES1	
			1.13	0.40	Greyish brown mottled orangish brown fissured CLAY. Occasional light grey sandy lamination. Abundant roots and rootlets. (ALLUVIUM)					
	(50)			(1.40)		Dry		1.00 - 1.45	S	N=2 (0,0/0,0,1,1)
								1.50	D1	
			-0.27	1.80	Soft grey silty CLAY. Abundant plant matter. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
						Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(3.65)						
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=1 (0,0/0,0,0,1)
	SP (50)		-3.92	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Duration: Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

WS1

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	19-09-19	19-09-19	HD	Dando Terrier 2002	TM	19-09-19	

Location details:

mE:	566373.84
mN:	176598.87
mAOD:	1.33
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
			1.13	0.20	Brown mottled greyish brown and orangish brown fissured CLAY. Abundant roots and rootlets. (TOPSOIL)			0.20	ES1	
				(0.45)				0.50	D1	
			0.68	0.65	Firm grey mottled orangish brown and yellowish brown fissured CLAY. Abundant rootlets and occasional relic roots. (ALLUVIUM)					
				(0.35)						
	(50)		0.33	1.00	*0.48 - 0.53 m: Occasional small white shell fragments.* Soft grey mottled orangish brown and yellowish brown fissured CLAY. Abundant rootlets and occasional relic roots. (ALLUVIUM)	Dry		1.00 - 1.45	S	N=0 (0,0/0,0,0,0)
				(0.66)						
			-0.33	1.66	Soft grey mottled orangish brown and yellowish brown fissured CLAY. Abundant relic roots. (ALLUVIUM)					
			-0.40	1.73						
			-0.67	2.00	Dark brownish black very peaty CLAY. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					Grey mottled orangish brown silty CLAY. Occasional relic roots. (ALLUVIUM)					
					Soft grey silty CLAY. Abundant plant matter. (ALLUVIUM)					
						Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(3.45)						
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
	SP (50)		-4.12	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck: Rose to: Casing: Sealed:

Casing:

Cased to: Diameter (mm):

Depth related remarks:

From to: Remarks

Run details:

From: to: Duration: Recovery:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

WS2

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	19-09-19	19-09-19	HD	Dando Terrier 2002	TM	19-09-19	

Location details:

mE:	566252.44
mN:	176544.19
mAOD:	1.56
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.95)	Greyish brown mottled orangish brown fissured CLAY. Abundant rootlets. (TOPSOIL)			0.40	ES1	
			0.61	0.95						
			0.56	1.00	Firm black amorphous PEAT. (ALLUVIUM)	Dry		1.00 - 1.45	S	N=1 (0,0/0,0,0,1)
				(0.80)	Grey mottled orangish brown, brown and yellowish brown slightly silty peaty CLAY. Abundant rootlets. (ALLUVIUM)					
			-0.24	1.80						
			-0.44	2.00	Grey mottled orangish brown, brown and yellowish brown very silty peaty CLAY. Rare rootlets. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					Soft grey silty CLAY. Abundant plant matter. (ALLUVIUM)	Dry		3.00 - 3.45	S	N=1 (0,0/0,0,1,0)
				(3.45)		Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
			-3.89	5.45	Dynamic sample ends at 5.45 m (Target depth)					

	Inst (Ø)	Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **WS3**

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	19-09-19	19-09-19	HD	Dando Terrier 2002	TM	19-09-19	

Location details:

mE:	566131.12
mN:	176637.90
mAOD:	1.77
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.65)	Greyish brown slightly gravelly CLAY. Abundant roots and rootlets. Gravel is fine to medium subangular brick. (MADE GROUND)			0.40	ES1	
			1.12	0.65						
				(0.35)	Greyish brown mottled orangish brown CLAY. Abundant roots and rootlets. (ALLUVIUM)					
	(50)		0.77	1.00		Dry		1.00 - 1.45	S	N=4 (1,1/1,1,1,1)
				(0.54)	Grey mottled orangish brown, brown and yellowish brown slightly silty peaty CLAY. Abundant rootlets. (ALLUVIUM)					
			0.23	1.54						
			0.17	1.60	Firm black amorphous PEAT. Frequent selenite crystals. (ALLUVIUM)					
				(0.50)						
			-0.33	2.10	Grey mottled dark grey, orangish brown and yellowish brown silty CLAY. Occasional iron spot and dark grey gleying. Occasional selenite crystal. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					1.70 m: Seeds present.					
					Very soft grey silty CLAY. (ALLUVIUM)					
						Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(3.35)						
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
	SP (50)		-3.68	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **WS4**

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	4.45	19-09-19	19-09-19	HD	Dando Terrier 2002	TM	19-09-19	

Location details:

mE:	566093.32
mN:	176692.57
mAOD:	1.27
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.30)	Greyish brown slightly gravelly CLAY. Abundant roots and rootlets.			0.20	ES1	
			0.97	0.30	Gravel is fine to coarse subangular to rounded flint and occasional brick fragments. (MADE GROUND)					
			0.77	0.50	Very loose grey clayey GRAVEL of subangular to subrounded flint. (MADE GROUND)					
				(0.43)						
			0.34	0.93	Grey mottled orangish brown, brown and yellowish brown slightly silty peaty CLAY. Abundant rootlets. (ALLUVIUM)	Dry		1.00 - 1.45	S	N=0 (0,0/0,0,0,0)
			0.27	1.00						
				(0.50)						
			-0.23	1.50	Firm dark brownish black pseudo-fibrous PEAT. Abundant iron spots. Abundant rootlets. (ALLUVIUM)					
					Grey mottled orangish brown and yellowish brown very silty CLAY. Occasional rootlet and relic roots. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					Very soft grey silty CLAY. (ALLUVIUM)					
				(2.95)		Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
			-3.18	4.45	Dynamic sample ends at 4.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet.
All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

WS5

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	20-09-19	20-09-19	HD	Dando Terrier 2002	TM	20-09-19	

Location details:

mE:	566233.72
mN:	176814.70
mAOD:	1.26
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.40)	Firm greyish brown slightly gravelly CLAY. Gravel is fine subangular brick and chalk. Abundant rootlets. (MADE GROUND)			0.30	ES1	
			0.86	0.40						
				(0.60)	Greyish brown mottled orangish brown and grey fissured CLAY. Frequent light grey sandy laminations. Occasional white and black flecks. Abundant rootlets. (TOPSOIL)					
	(50)		0.26	1.00		Dry		1.00 - 1.45	S	N=2 (0,0/0,0,1,1)
				(1.00)	Soft grey mottled orangish brown slightly silty peaty CLAY. Occasional light grey sandy laminations. Occasional selenite crystals. (ALLUVIUM)					
			-0.74	2.00		Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					Very soft grey silty CLAY. Occasional lamination of reeds. (ALLUVIUM)			2.90	D1	
						Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(3.45)						
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
	SP (50)		-4.19	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **WS6**

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	20-09-19	20-09-19	HD	Dando Terrier 2002	TM	20-09-19	

Location details:

mE:	566146.24
mN:	176744.71
mAOD:	1.68
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
			1.43	0.25	Firm greyish brown slightly gravelly CLAY. Gravel is fine to medium subrounded flint and brick. Abundant rootlets. (MADE GROUND)			0.15	ES1	
	(50)			(1.57)	Greyish brown mottled orangish brown and grey fissured CLAY. Occasional sandy laminations. Occasional white and black flecks. Abundant rootlets. (TOPSOIL)	Dry		1.00 - 1.45	S	N=3 (1,1/1,1,1,0)
			-0.14	1.82				1.80	D1	
			-0.32	2.00	Soft grey mottled orangish brown slightly silty peaty CLAY. Occasional light grey sandy laminations. Occasional selenite crystals. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
					Very soft grey silty CLAY. Occasional lamination of reeds. (ALLUVIUM)	Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(3.45)		Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
	SP (50)		-3.77	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference: **WS7**

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	20-09-19	20-09-19	HD	Dando Terrier 2002	TM	20-09-19	

Location details:

mE:	566273.73
mN:	176686.68
mAOD:	1.53
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
			1.38	0.15	Firm greyish brown slightly gravelly CLAY. Gravel is fine subangular brick and chalk. Abundant rootlets. (MADE GROUND)			0.10	ES1	
	(50)			(1.15)	Greyish brown mottled orangish brown and grey fissured CLAY. Occasional sandy laminations. Occasional white and black flecks. Abundant rootlets. (TOPSOIL)	Dry		1.00 - 1.45	S	N=4 (0,0/1,1,1,1)
			0.23	1.30						
				(0.40)	Greyish brown mottled orangish brown and grey fissured CLAY. Occasional sandy laminations and selenite crystals. Occasional relic root and plant remains. (ALLUVIUM)					
			-0.17	1.70						
				(0.80)	Very soft grey mottled orangish brown silty CLAY. Occasional plant remains. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
			-0.97	2.50	Very soft grey silty CLAY. Occasional lamination of reeds. (ALLUVIUM)					
						Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
				(2.95)		Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
	SP (50)		-3.92	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

AGS

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

WS8

Dynamic Sample Log

TerraConsult

Borehole formation details:

Type:	From:	To:	Start date:	End date:	Crew:	Plant:	Logger:	Logged:	Remarks:
WLS	0.00	5.45	20-09-19	20-09-19	HD	Dando Terrier 2002	TM	20-09-19	

Location details:

mE:	566306.66
mN:	176821.13
mAOD:	1.23
Grid:	OSGB

Backfill/ Instal'n	Water-strike	Legend	Level	Depth (thick-ness)	Stratum Description	Samples & In Situ Testing: Water	Casing	Depth	Type & No	Results
				(0.90)	Brown and greyish brown mottled orangish brown fissured CLAY. Rare gravel of fine chalk. Abundant rootlets. (TOPSOIL)			0.25	ES1	
			0.33	0.90						
				(0.90)	Greyish brown mottled orangish brown fissured CLAY. Occasional light grey sandy lamination. Occasional rootlets. (ALLUVIUM)	Dry		1.00 - 1.45	S	N=4 (0,0/1,1,1,1)
			-0.57	1.80						
				(0.60)	Very soft grey mottled dark grey and orangish brown silty CLAY. Occasional plant remains. (ALLUVIUM)	Dry		2.00 - 2.45	S	N=0 (0,0/0,0,0,0)
			-1.17	2.40						
				(3.05)	Very soft grey mottled dark grey silty CLAY. Rare plant remains. (ALLUVIUM)	Dry		3.00 - 3.45	S	N=0 (0,0/0,0,0,0)
						Dry		4.00 - 4.45	S	N=0 (0,0/0,0,0,0)
						Dry		5.00 - 5.45	S	N=0 (0,0/0,0,0,0)
			-4.22	5.45	Dynamic sample ends at 5.45 m (Target depth)					
	Inst (Ø)					Water	Casing	Depth	Type & No	Results

Groundwater entries:

Struck:	Rose to:	Casing:	Sealed:

Casing:

Cased to:	Diameter (mm):

Depth related remarks:

From	to:	Remarks

Run details:

From:	to:	Duration:	Recovery:

Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in metres.

Log issue: FINAL

Scale: 1:50

Project: Tilbury Power

Project No: 4593

Client: Statera Energy Ltd

Exploratory position reference:

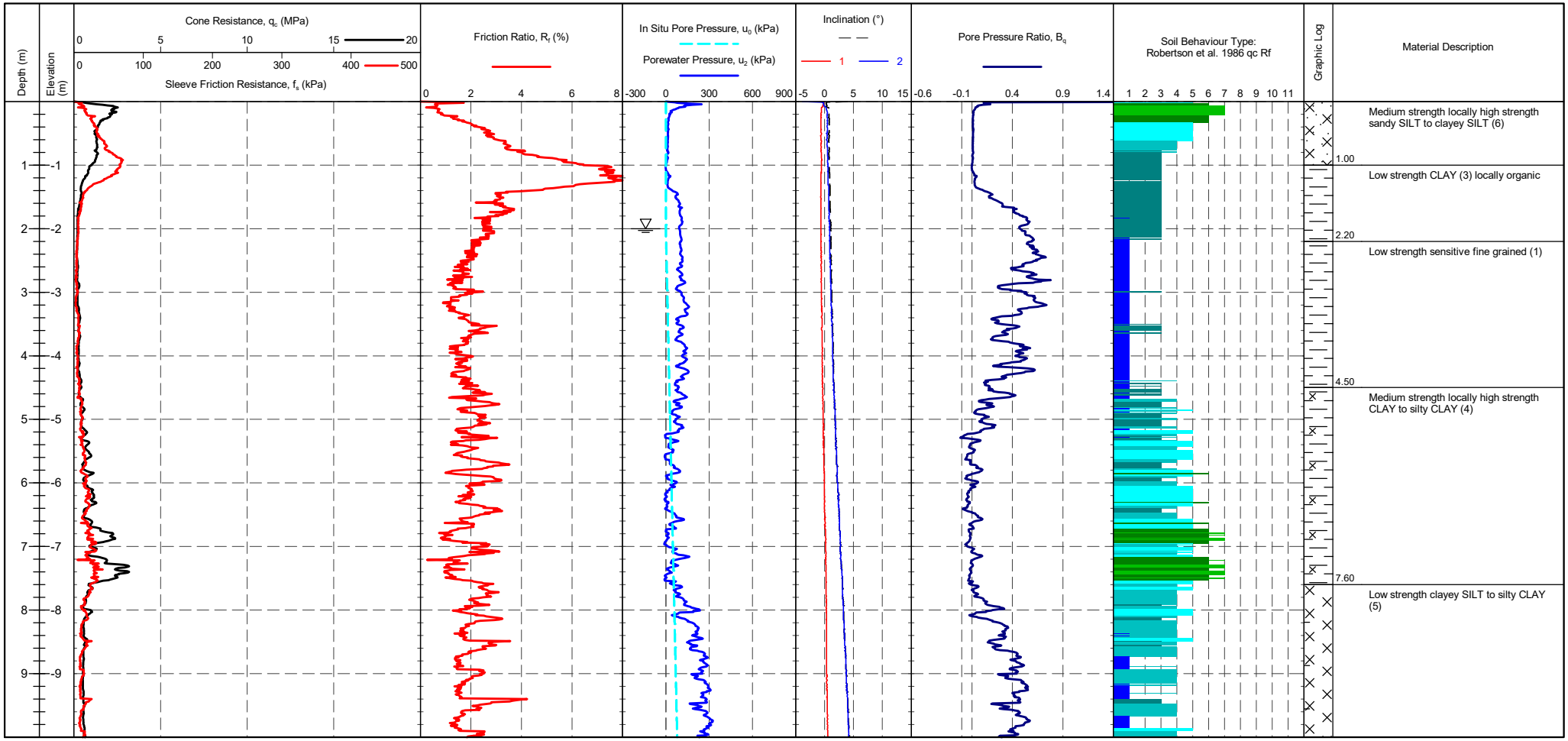
WS9

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 01

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV

Difference
0.011 MPa
0.002 kPa
0.004 kPa

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

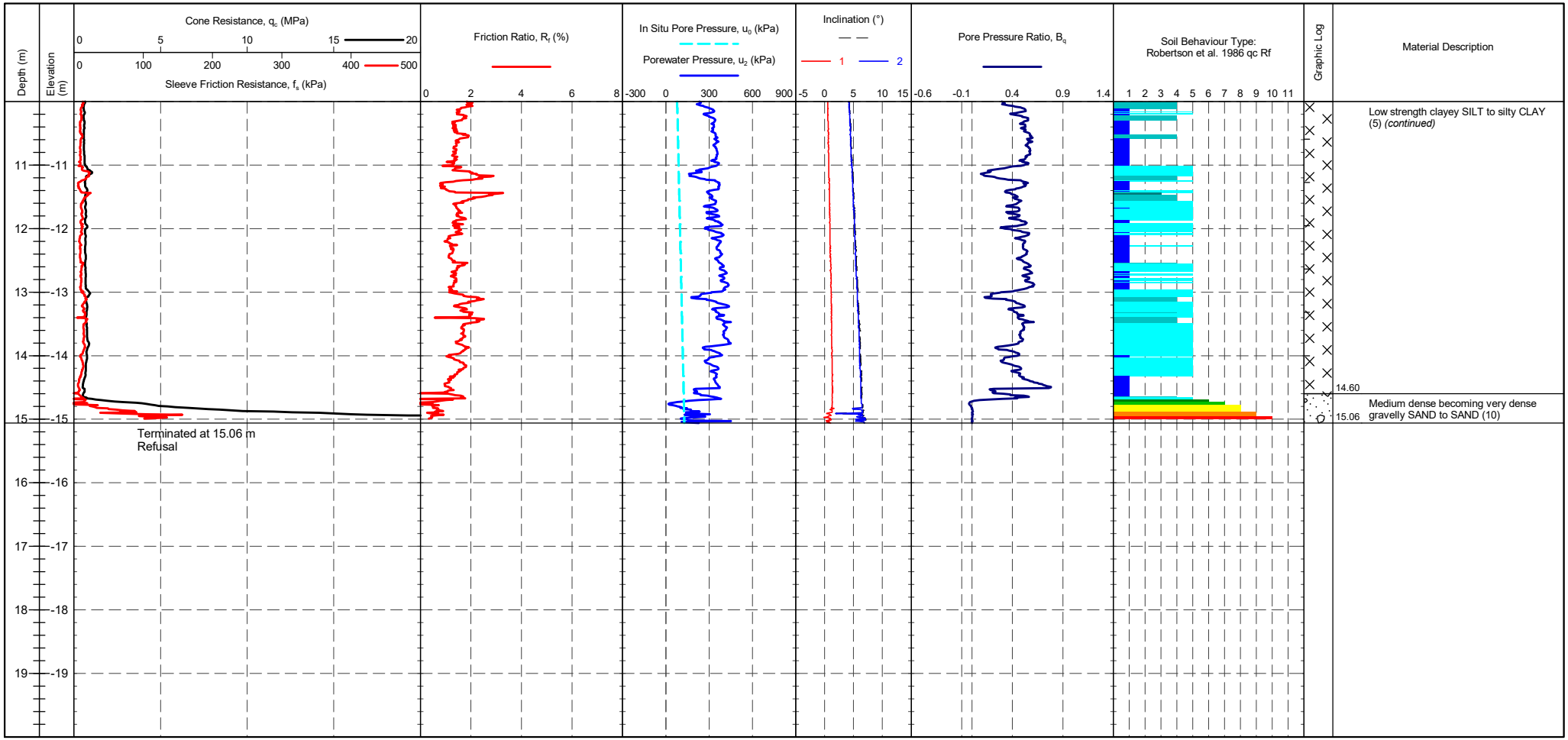
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 01

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

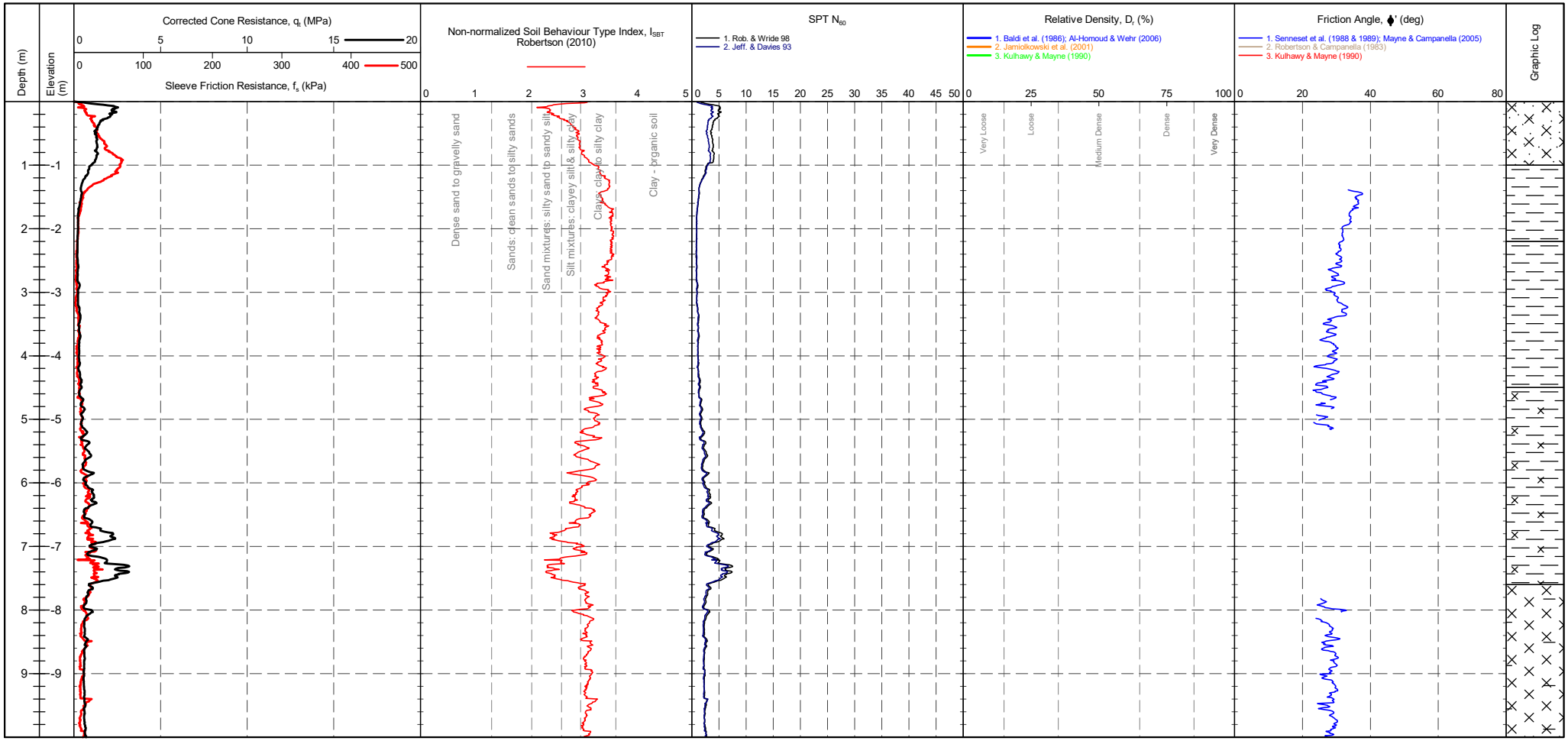
PointID
CPT 01

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

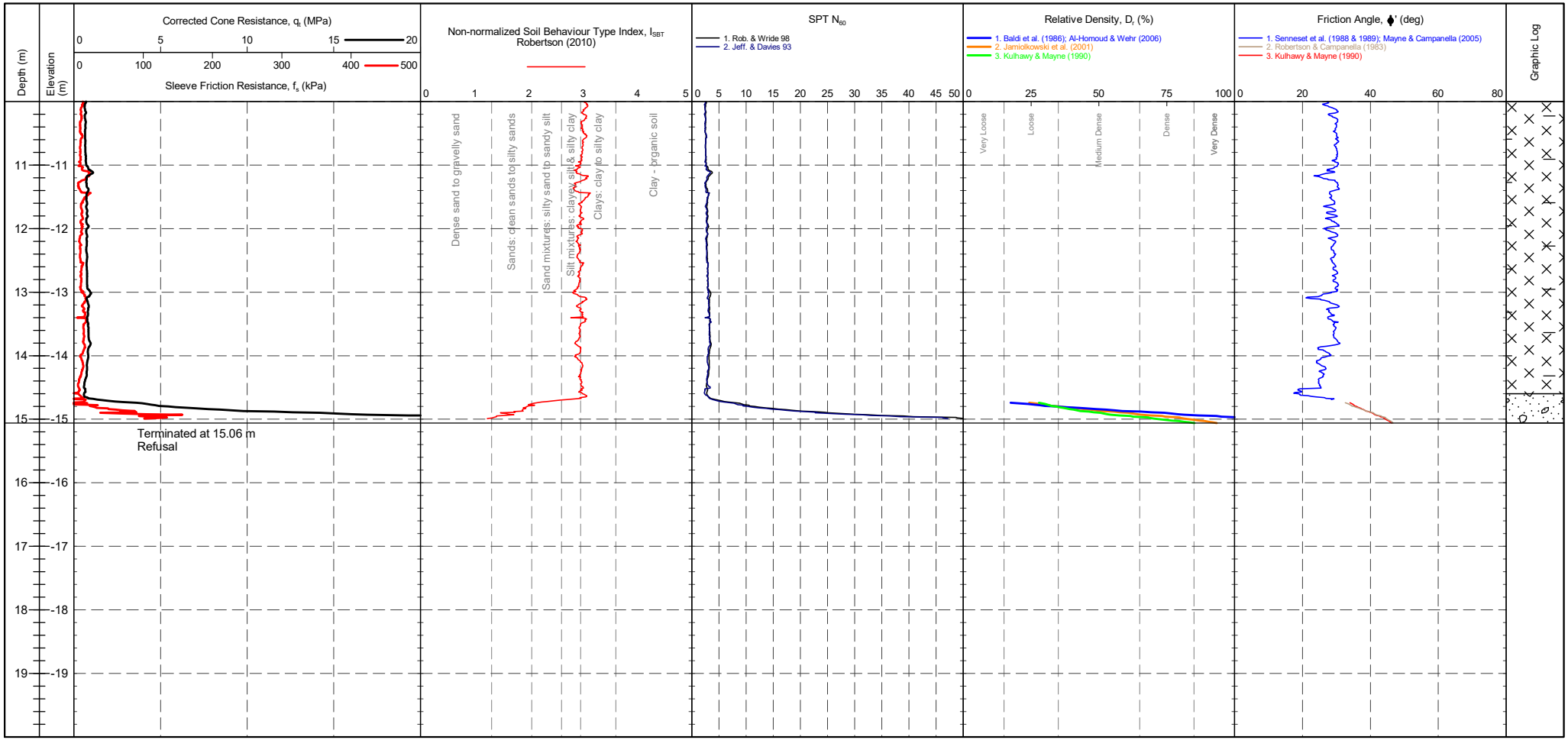
PointID
CPT 01

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV	

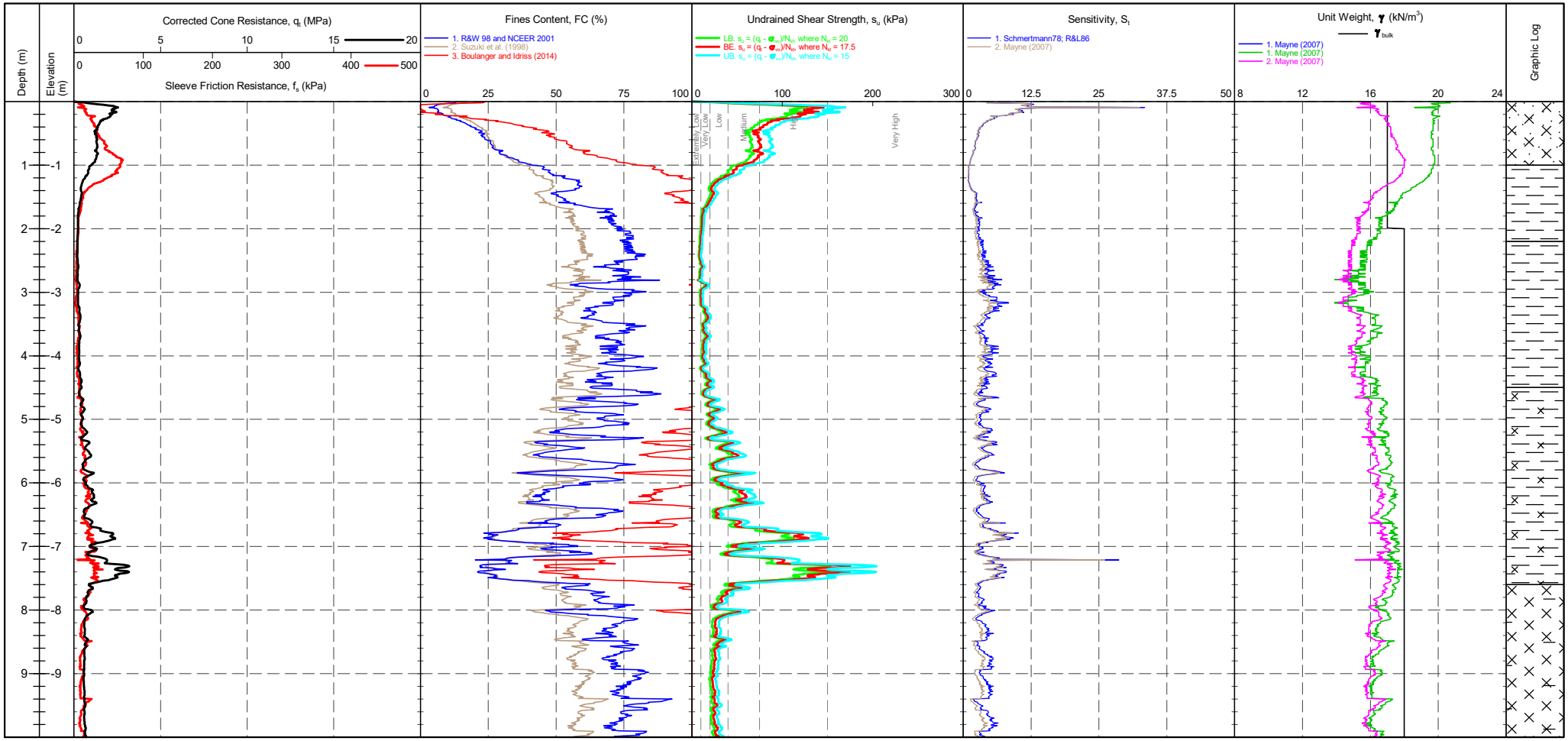
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 01

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

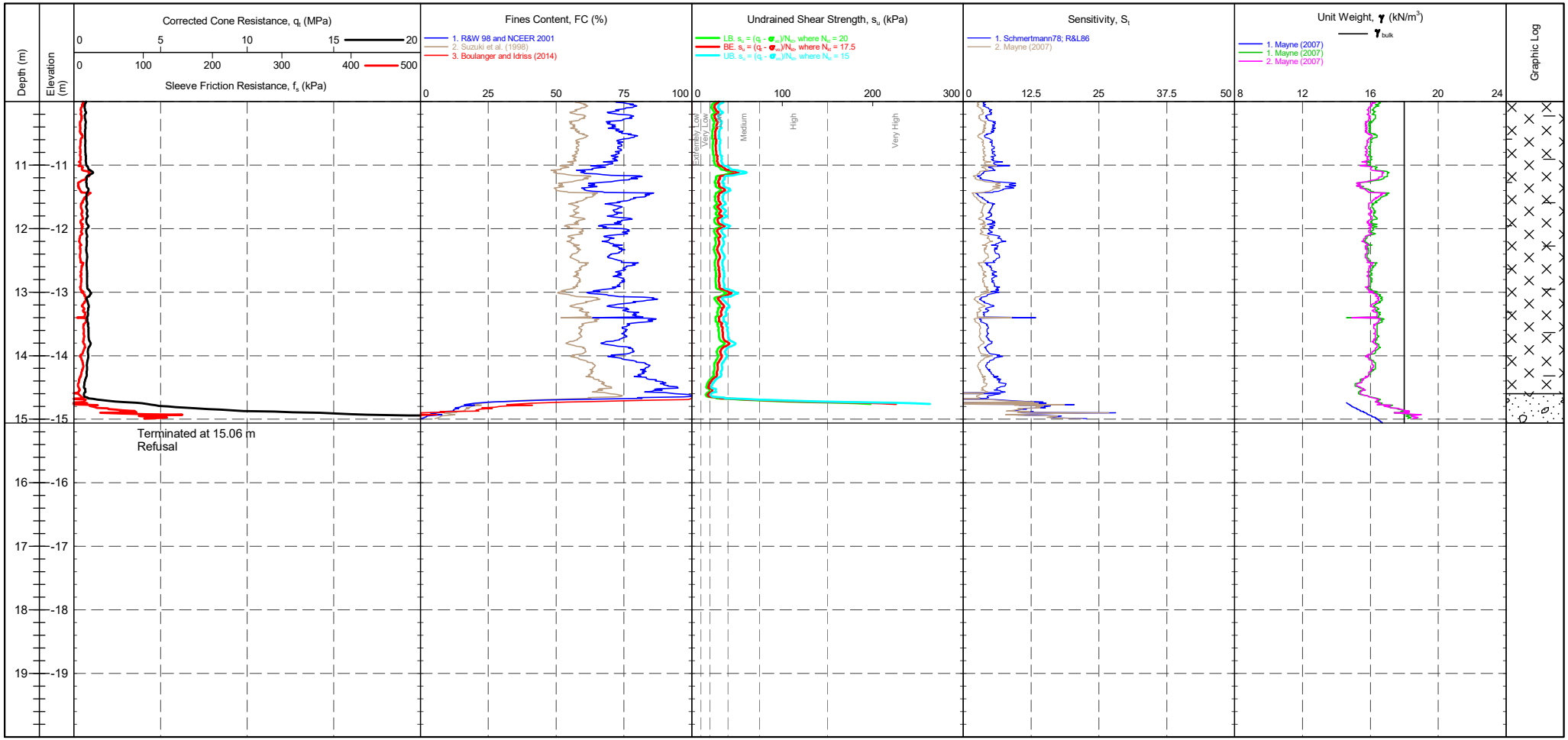
PointID
CPT 01

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

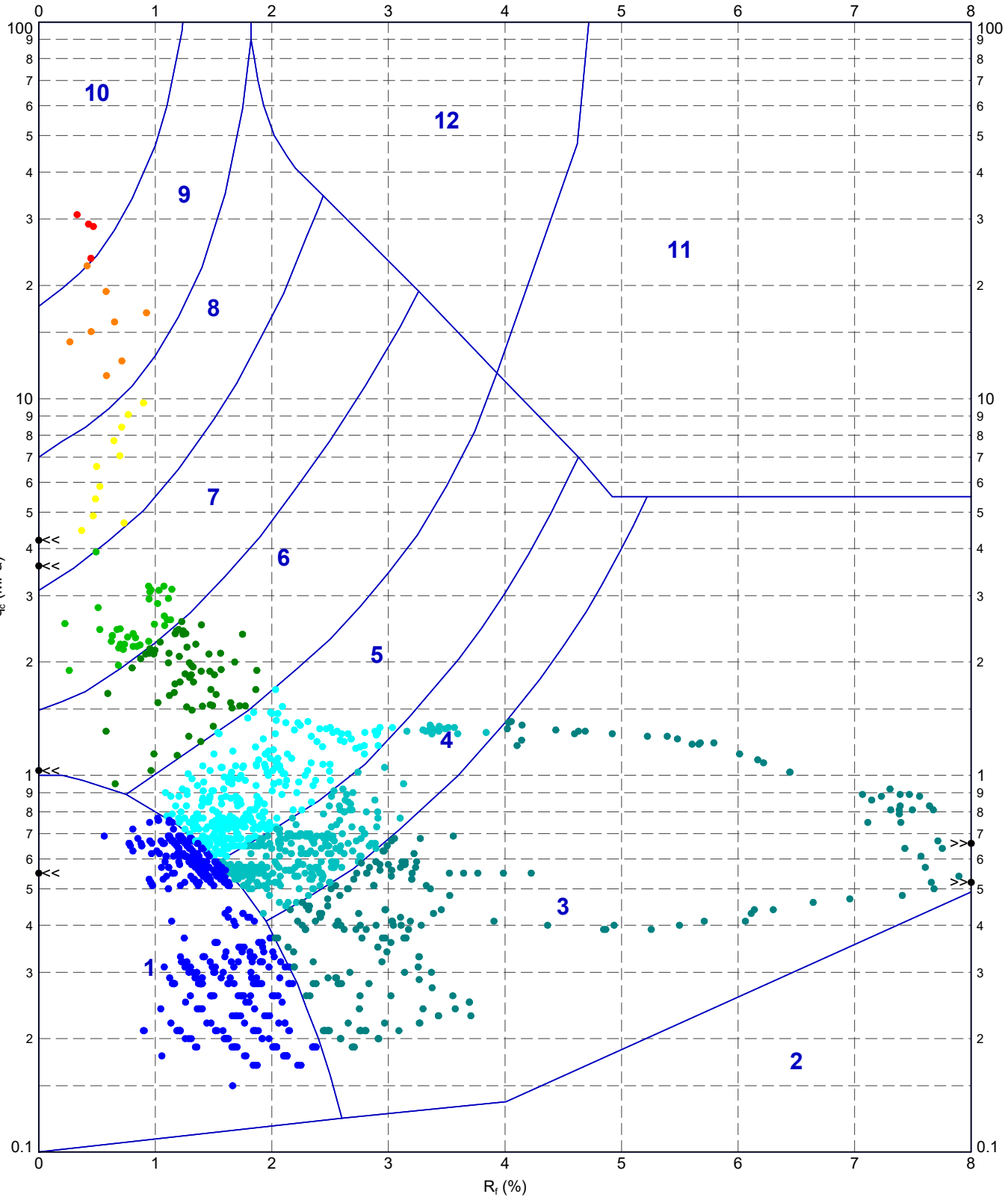
Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	294 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	299 mV	302 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 01	Pore Pressure 2	273 mV	286 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2351 mV	2470 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 01

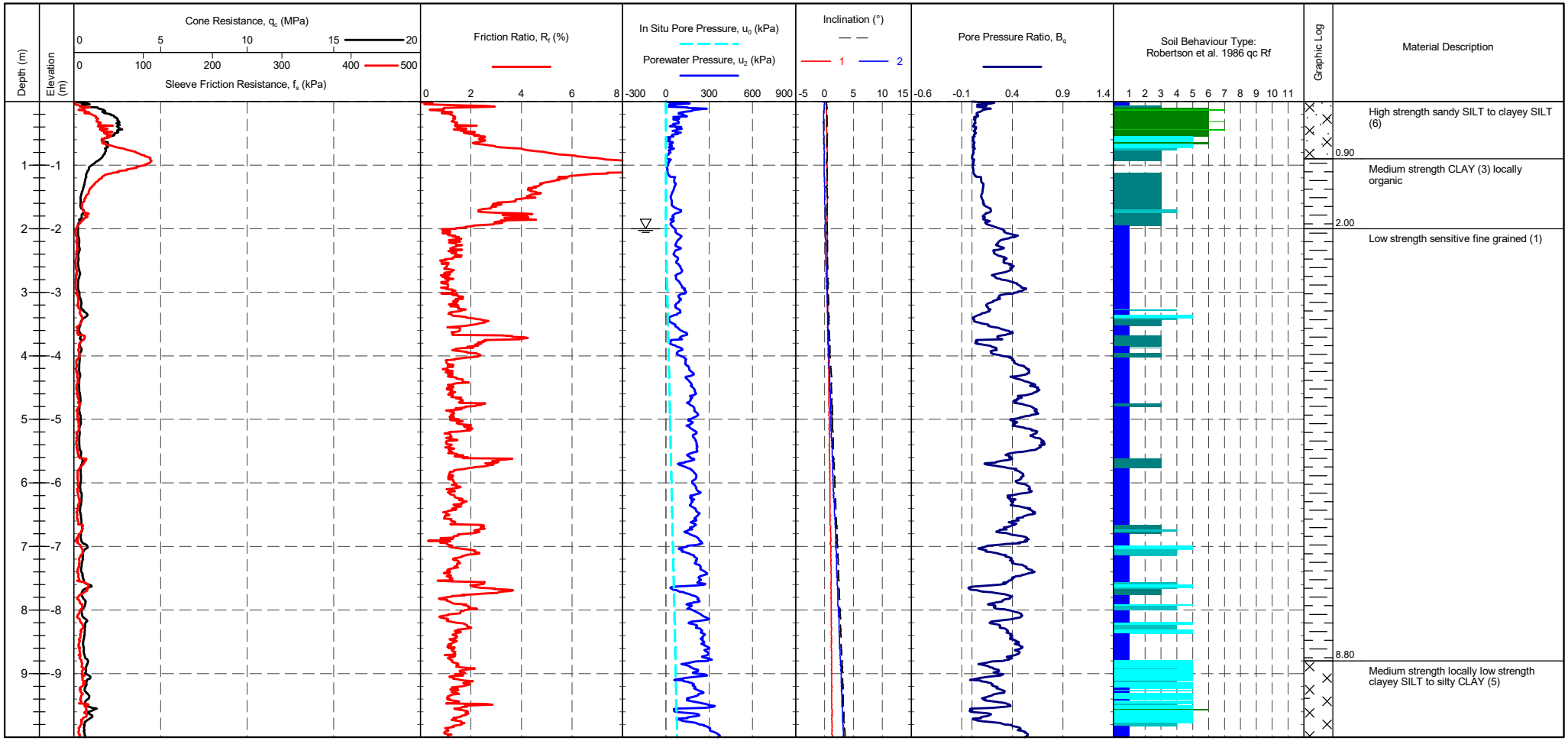
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 02

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2		
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2		
CONE AREA RATIO	: 0.79	RIG	: CPT 007		
FILTER POSITION	: u2	OPERATOR	: AC		
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02		
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	293 mV	298 mV	0.055 MPa
Sleeve	301 mV	307 mV	0.004 kPa
Pore Pressure 2	283 mV	308 mV	0.007 kPa
X-Y Inclinometer	2513 mV	2479 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

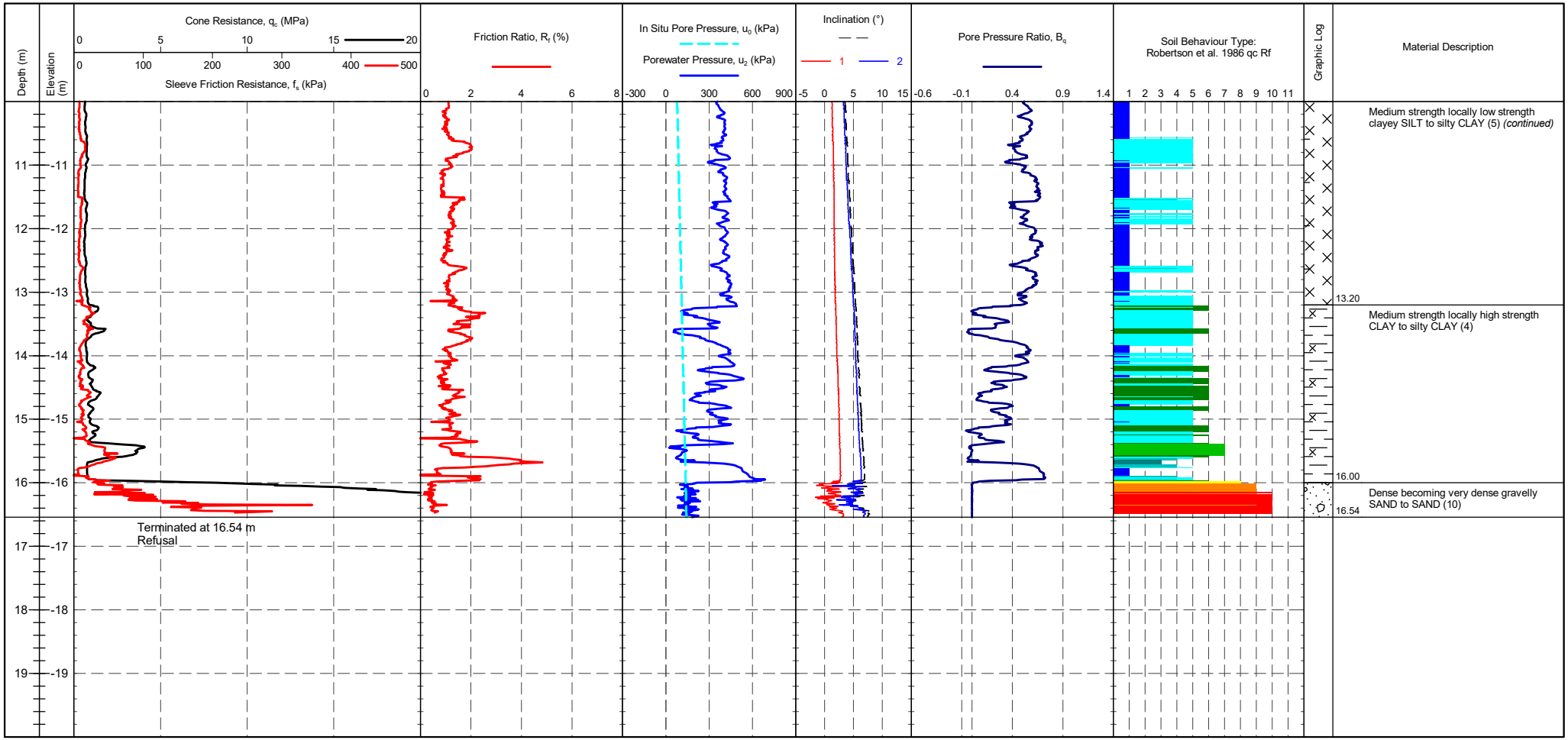
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 02

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	298 mV
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	301 mV	307 mV
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02	Pore Pressure 2	283 mV	308 mV
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2513 mV	2479 mV

Difference
0.055 MPa
0.004 kPa
0.007 kPa

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

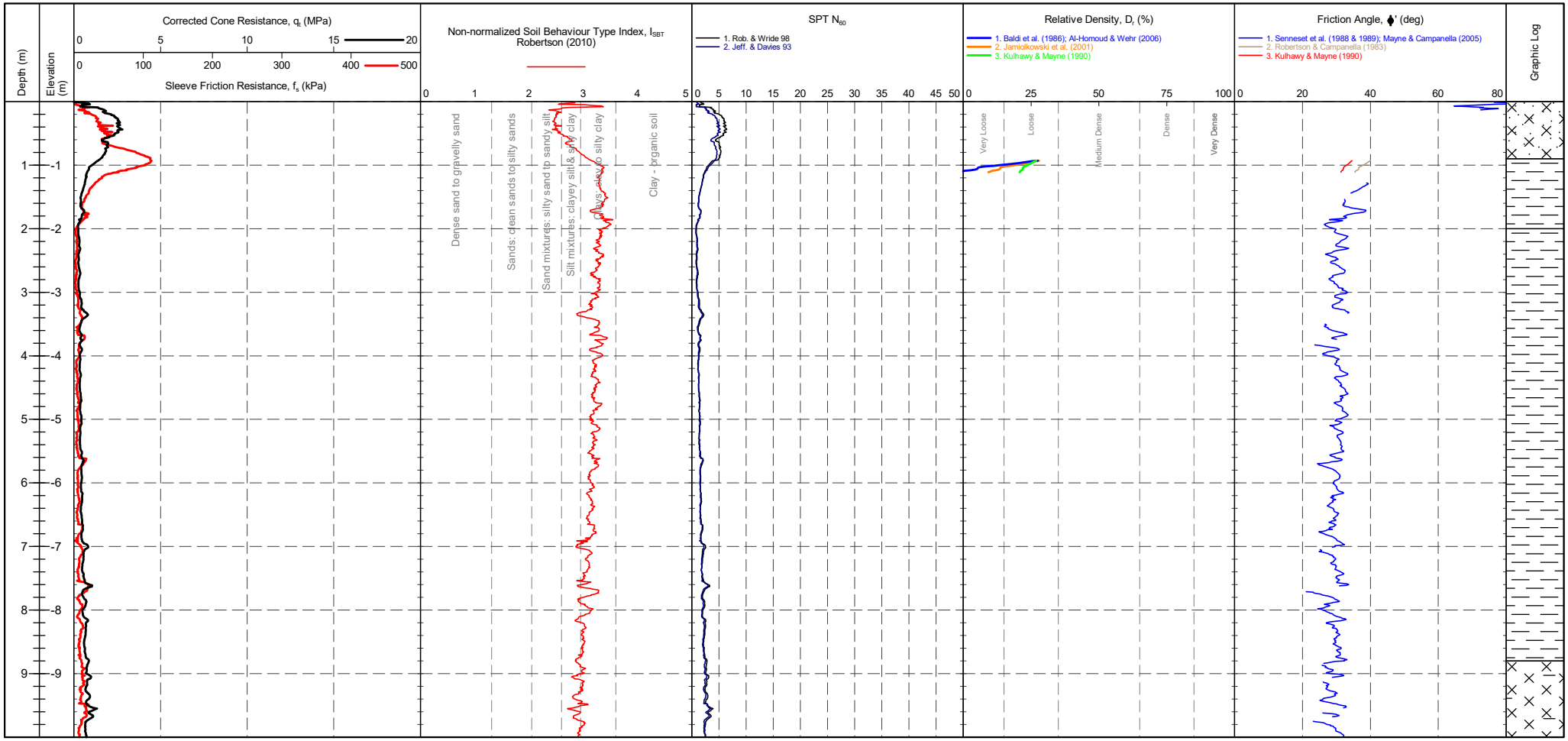
PointID
CPT 02

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2		
CONE AREA RATIO	: 0.79	RIG	: CPT 007		
FILTER POSITION	: u2	OPERATOR	: AC		
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02		
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	293 mV	298 mV	0.055 MPa
Sleeve	301 mV	307 mV	0.004 kPa
Pore Pressure 2	283 mV	308 mV	0.007 kPa
X-Y Inclinometer	2513 mV	2479 mV	

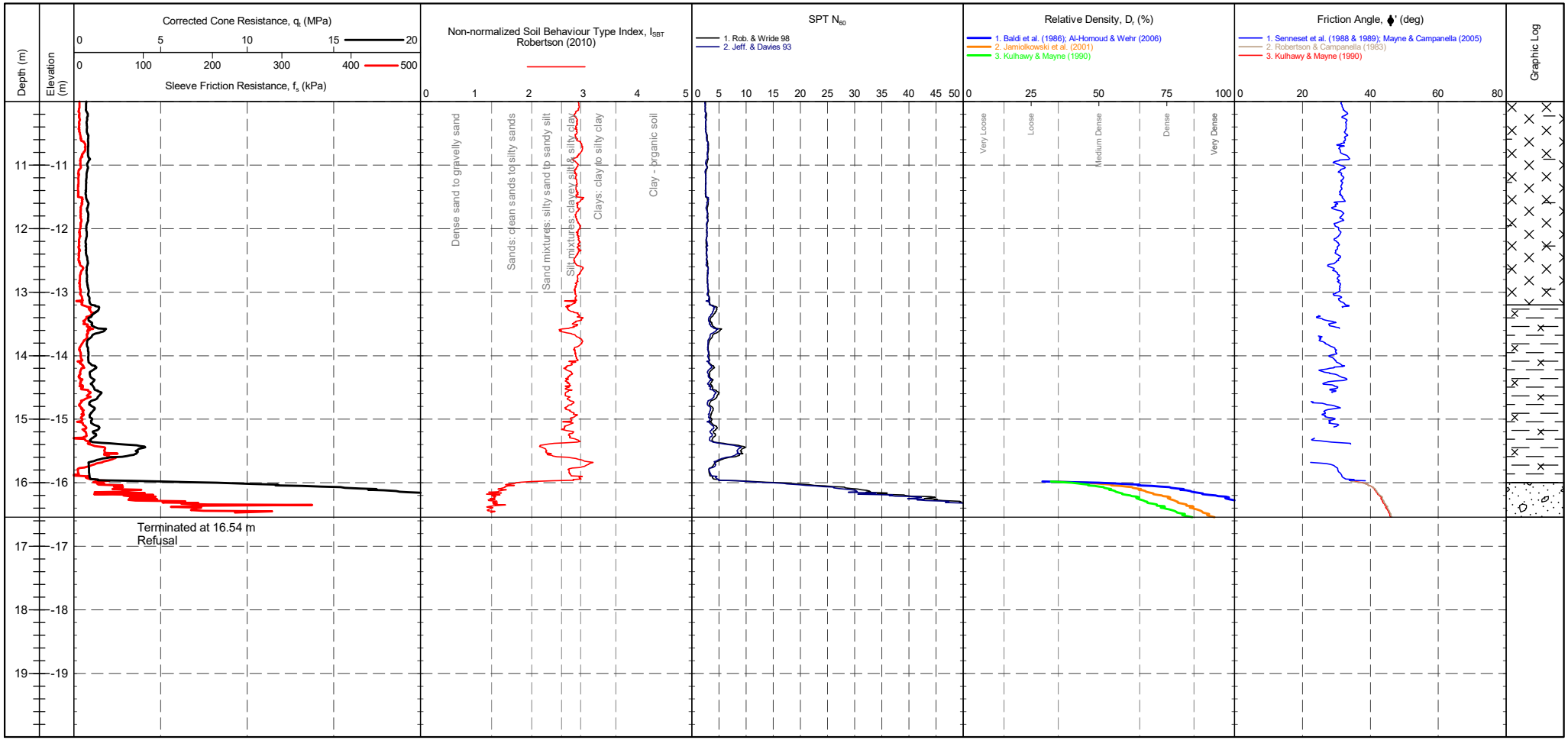
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

PointID
CPT 02

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Tip	293 mV	298 mV	0.055 MPa
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Sleeve	301 mV	307 mV	0.004 kPa
FILTER POSITION	: u2	OPERATOR	: AC	Pore Pressure 2	283 mV	308 mV	0.007 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02	X-Y Inclinometer	2513 mV	2479 mV	
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild				

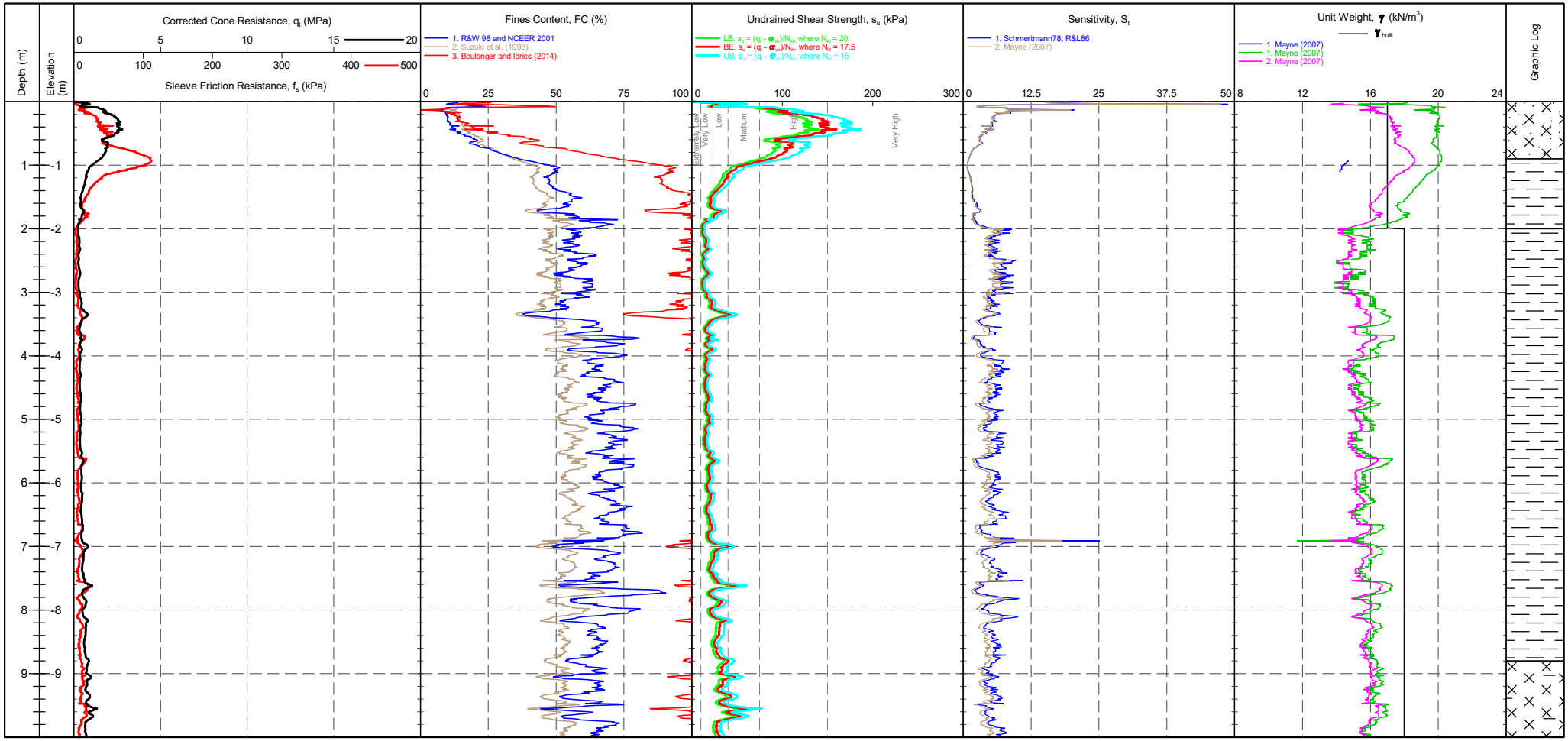
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 02

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	298 mV / 0.055 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	301 mV	307 mV / 0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02	Pore Pressure 2	283 mV	308 mV / 0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2513 mV	2479 mV

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

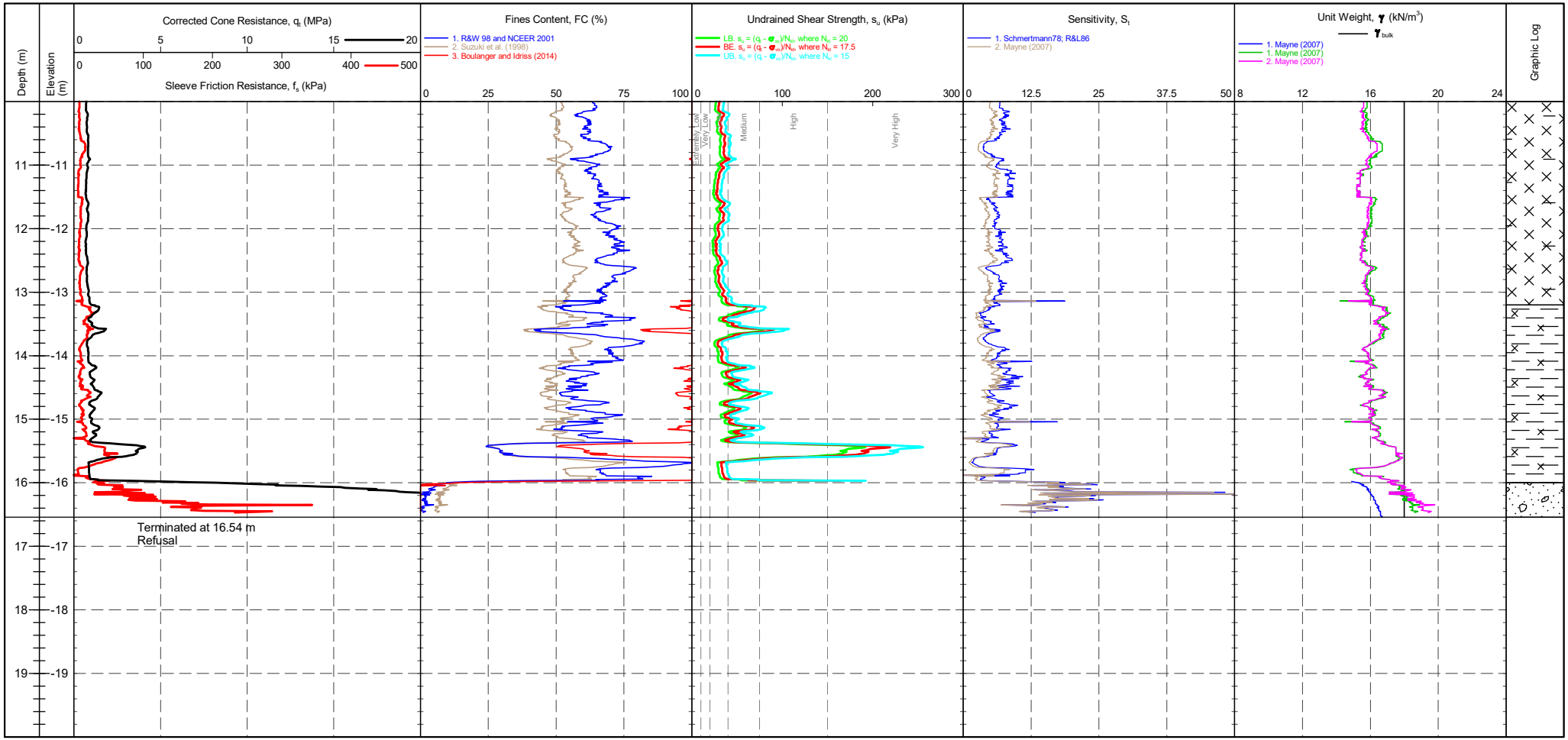
PointID
CPT 02

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

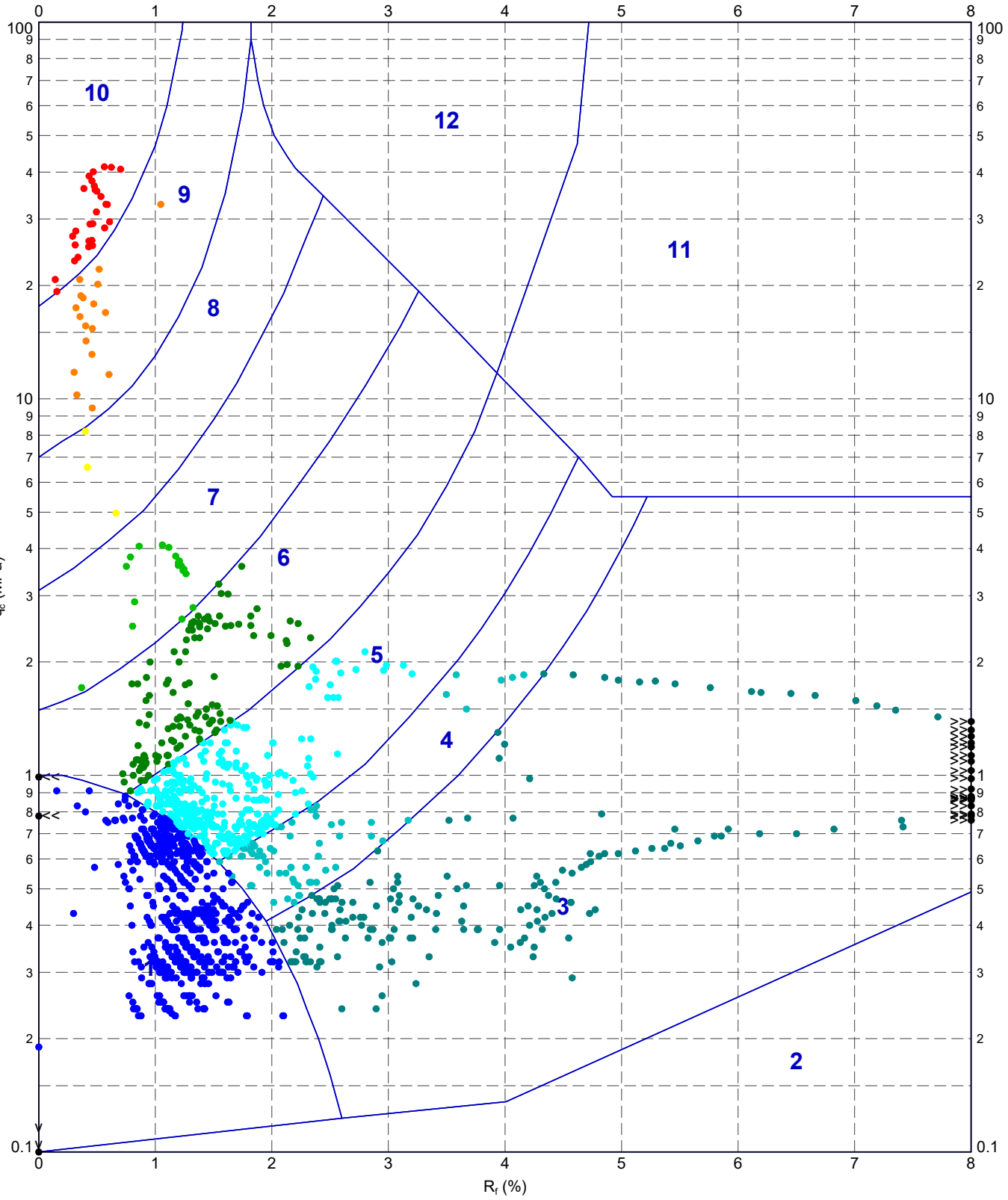
Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	298 mV	0.055 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	301 mV	307 mV	0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 02	Pore Pressure 2	283 mV	308 mV	0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2513 mV	2479 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 02

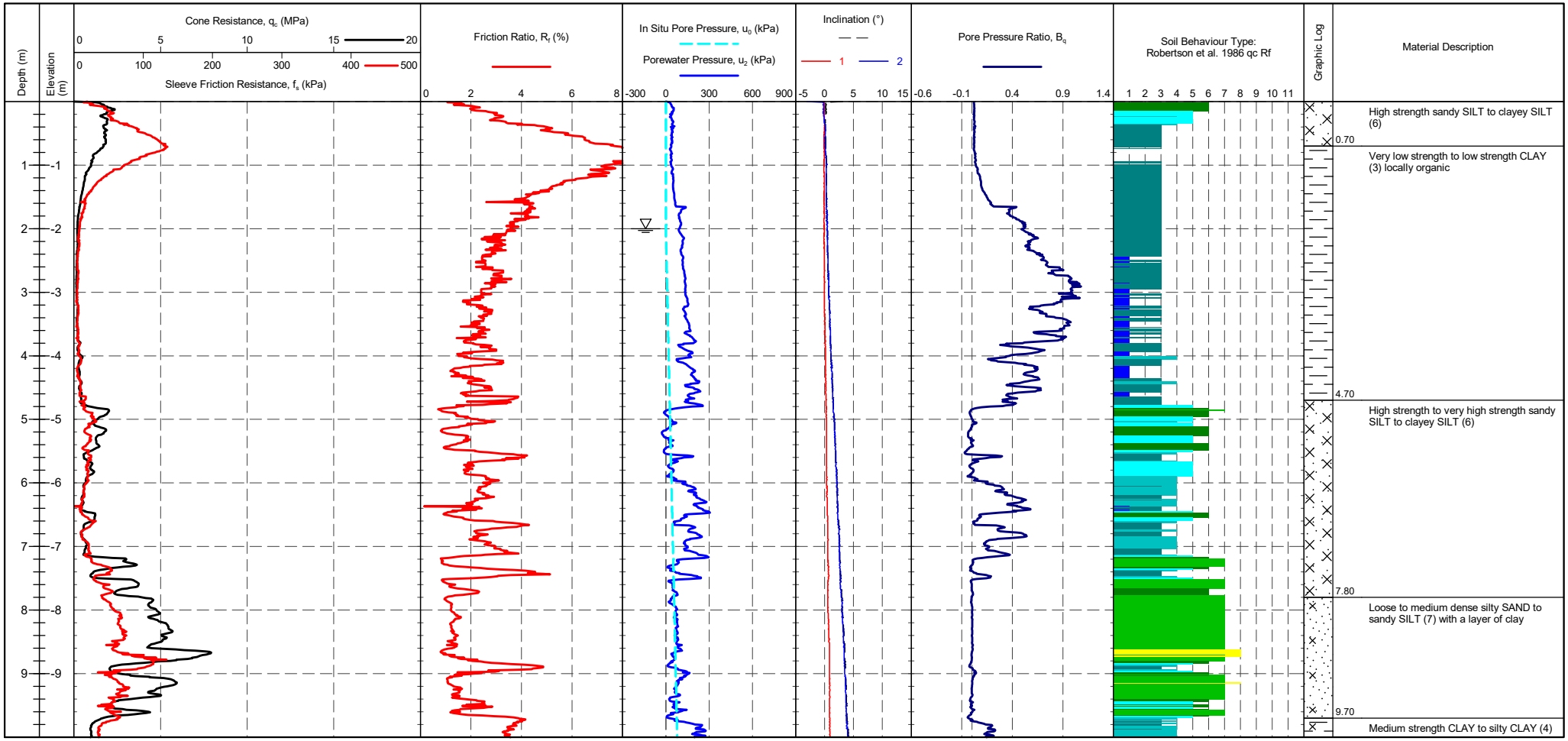
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 03

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID : S15-CFIP.1486	TEST TYPE : TE2	CPTU ZERO VALUES		
CONE AREA : 15cm²	APPLICATION CLASS : 2	Transducer	Pre	Post	Difference
CONE AREA RATIO : 0.79	RIG : CPT 007	Tip	294 mV	298 mV	0.044 MPa
FILTER POSITION : u2	OPERATOR : AC	Sleeve	303 mV	306 mV	0.002 kPa
FILTER TYPE : HDPE	FILE NAME : 1190415-CPT 03	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FRICTION REDUCER : None	WEATHER : Sunny & Mild	X-Y Inclinometer	2401 mV	2431 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

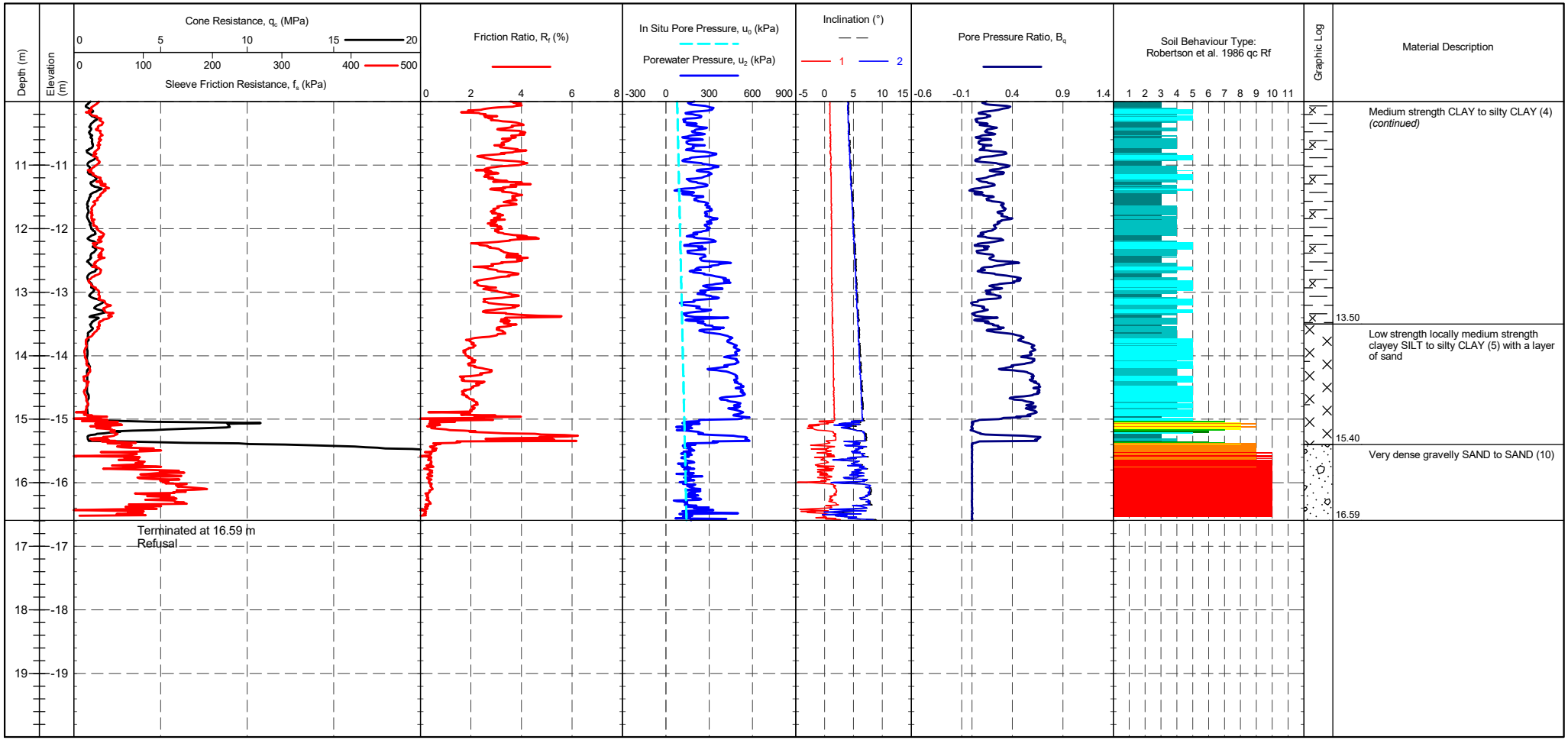
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 03

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	298 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	306 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 03	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2401 mV	2431 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

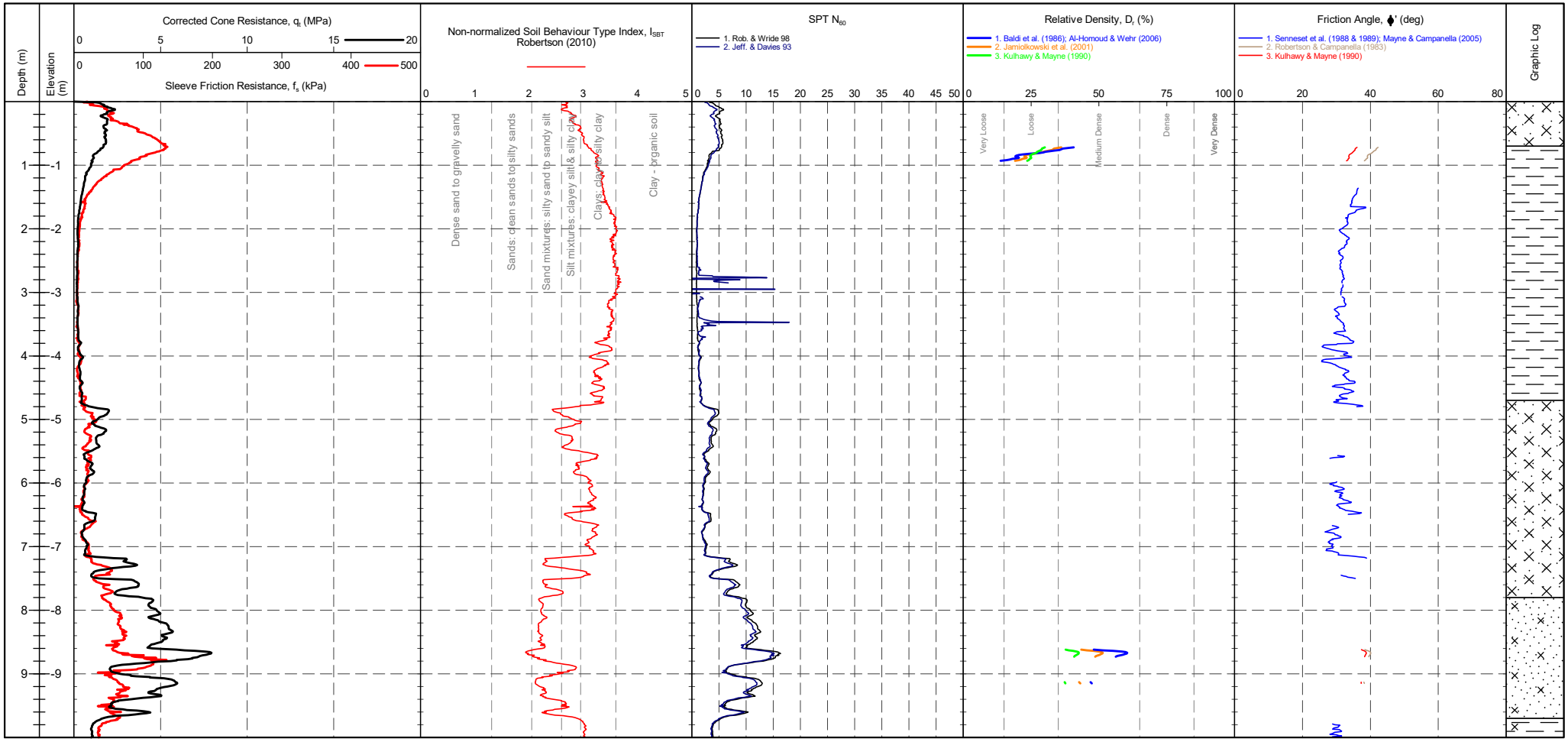
PointID
CPT 03

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	298 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	306 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 03	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2401 mV	2431 mV	

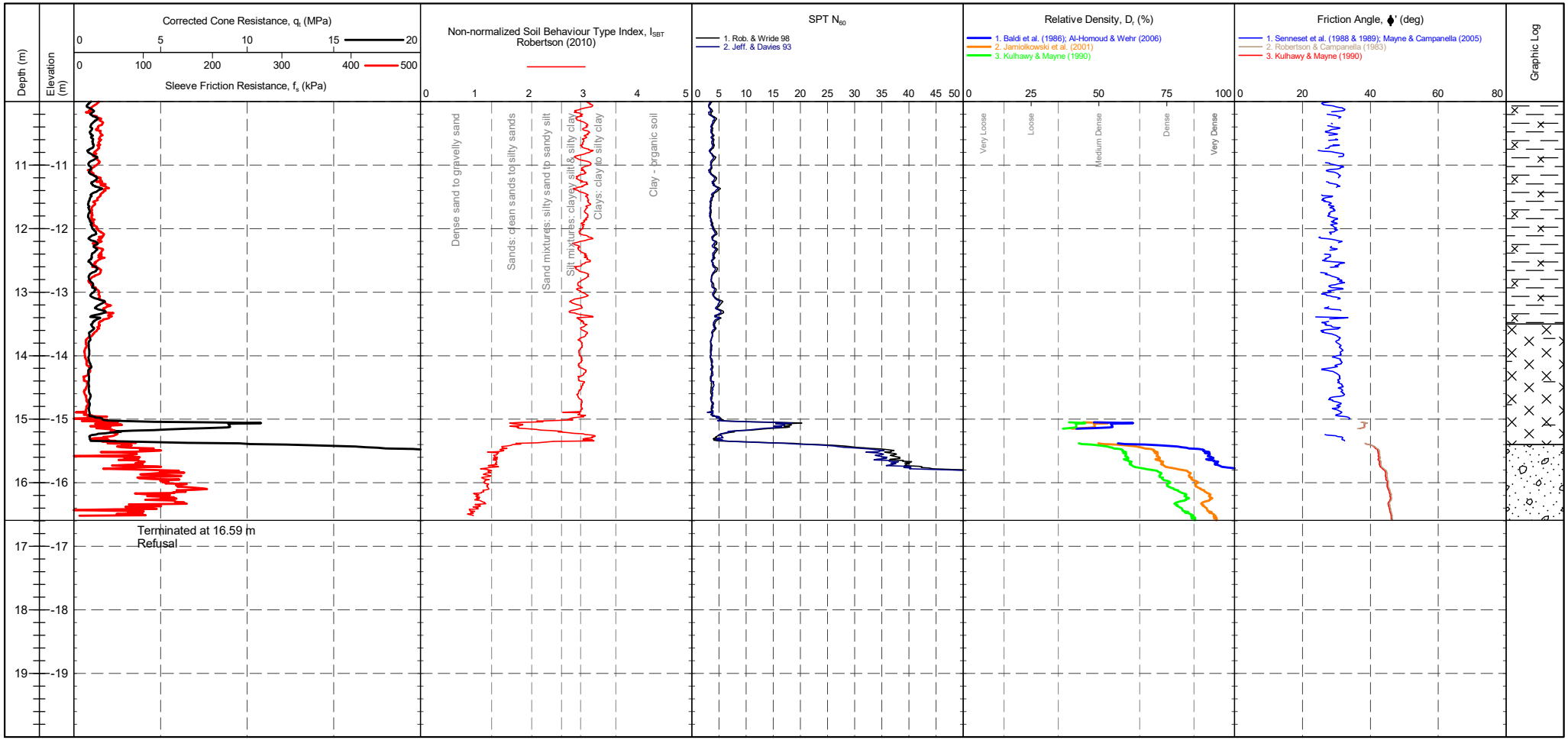
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

PointID
CPT 03

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	298 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	306 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 03	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2401 mV	2431 mV	

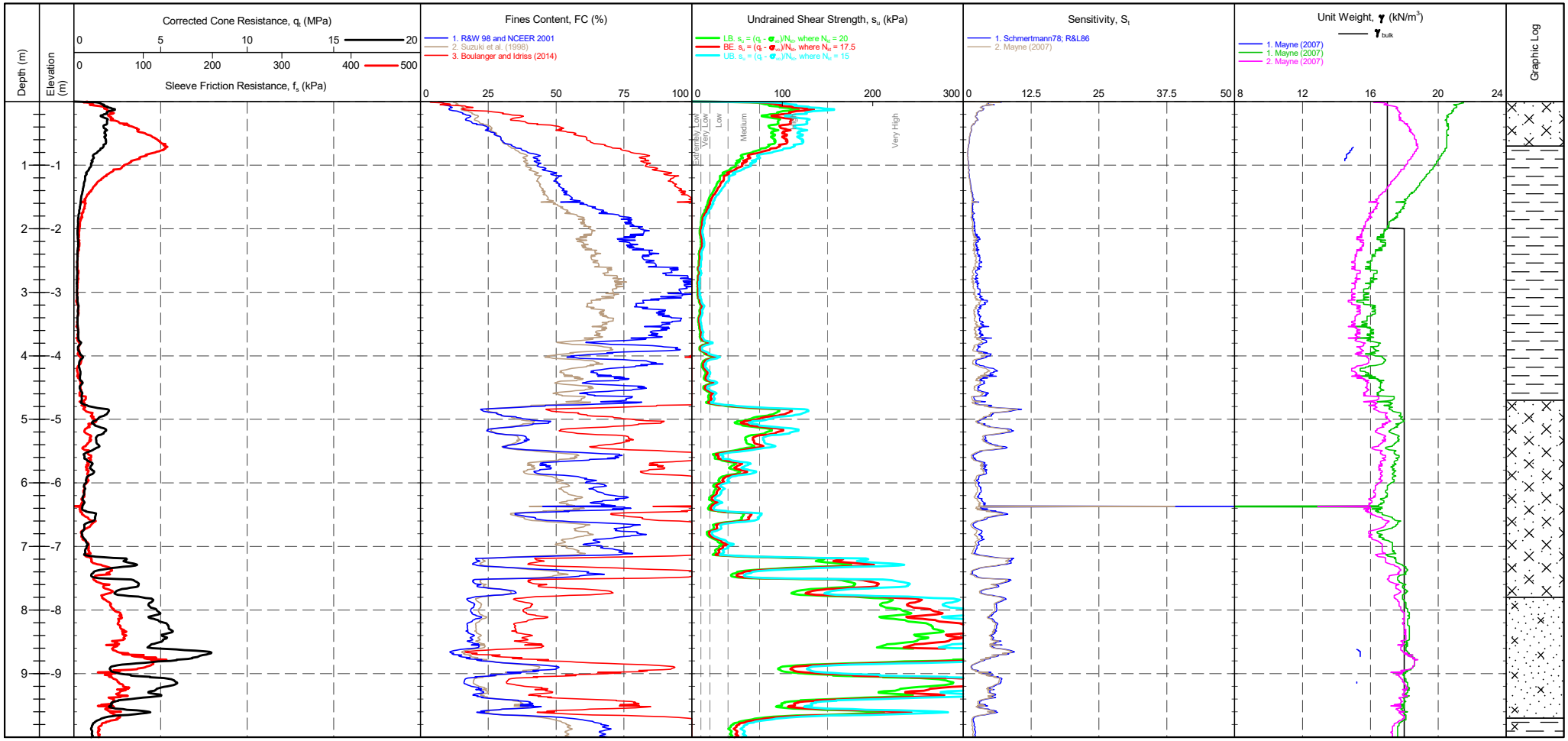
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 03

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Tip	294 mV	298 mV	0.044 MPa
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Sleeve	303 mV	306 mV	0.002 kPa
FILTER POSITION	: u2	OPERATOR	: AC	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 03	X-Y Inclinometer	2401 mV	2431 mV	
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild				

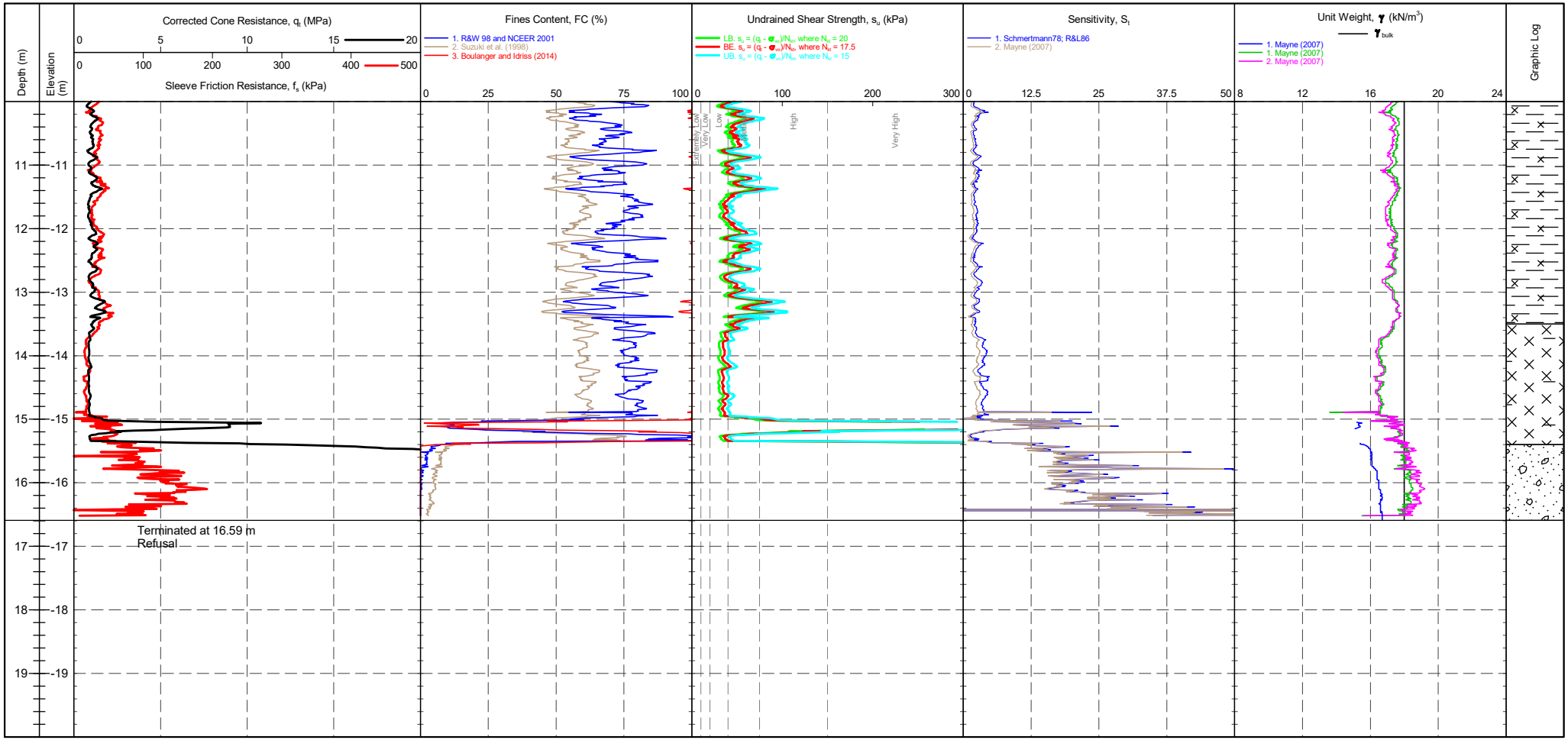
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

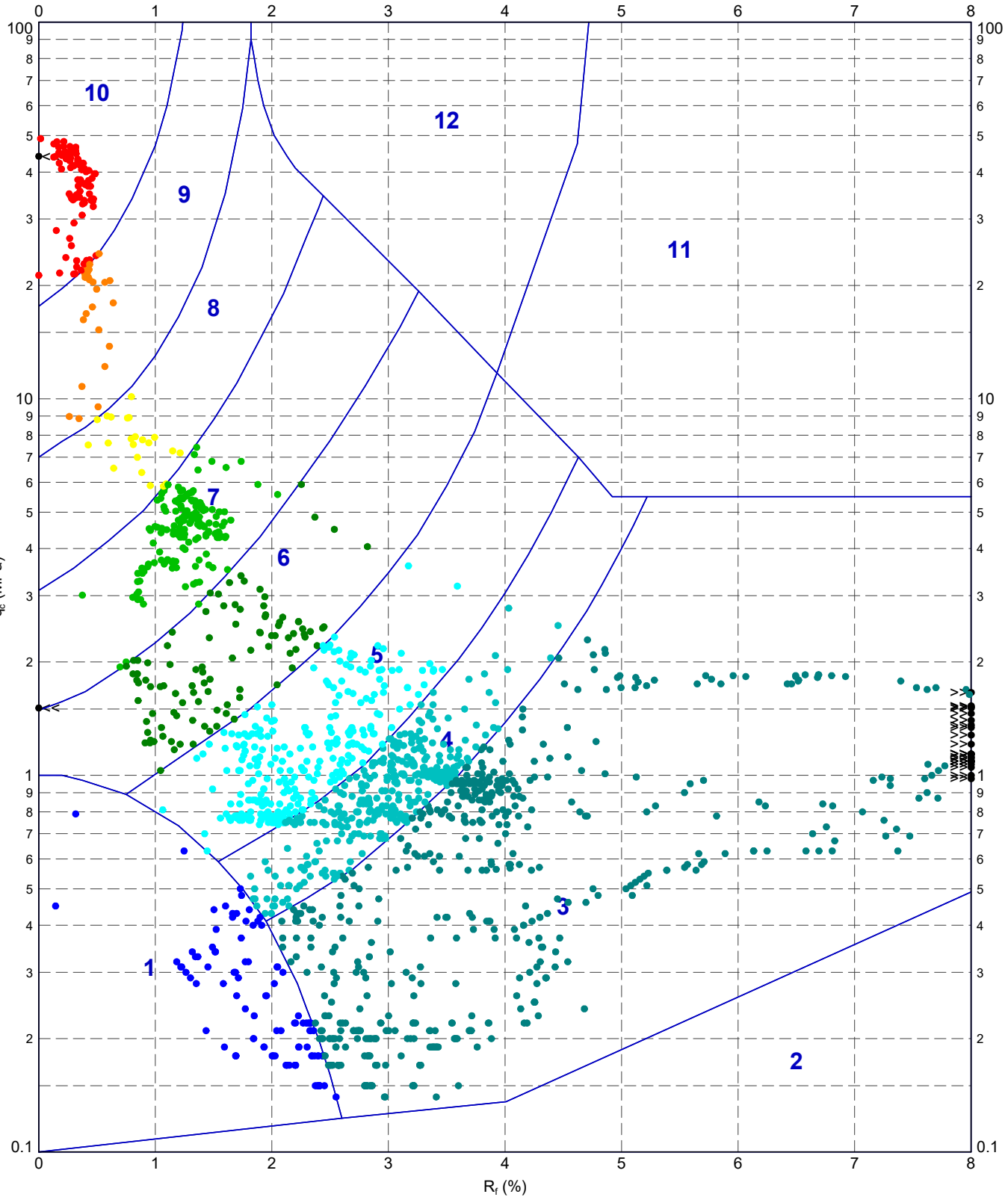
PointID
CPT 03

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	298 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	306 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 03	Pore Pressure 2	275 mV	299 mV	0.007 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2401 mV	2431 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 03

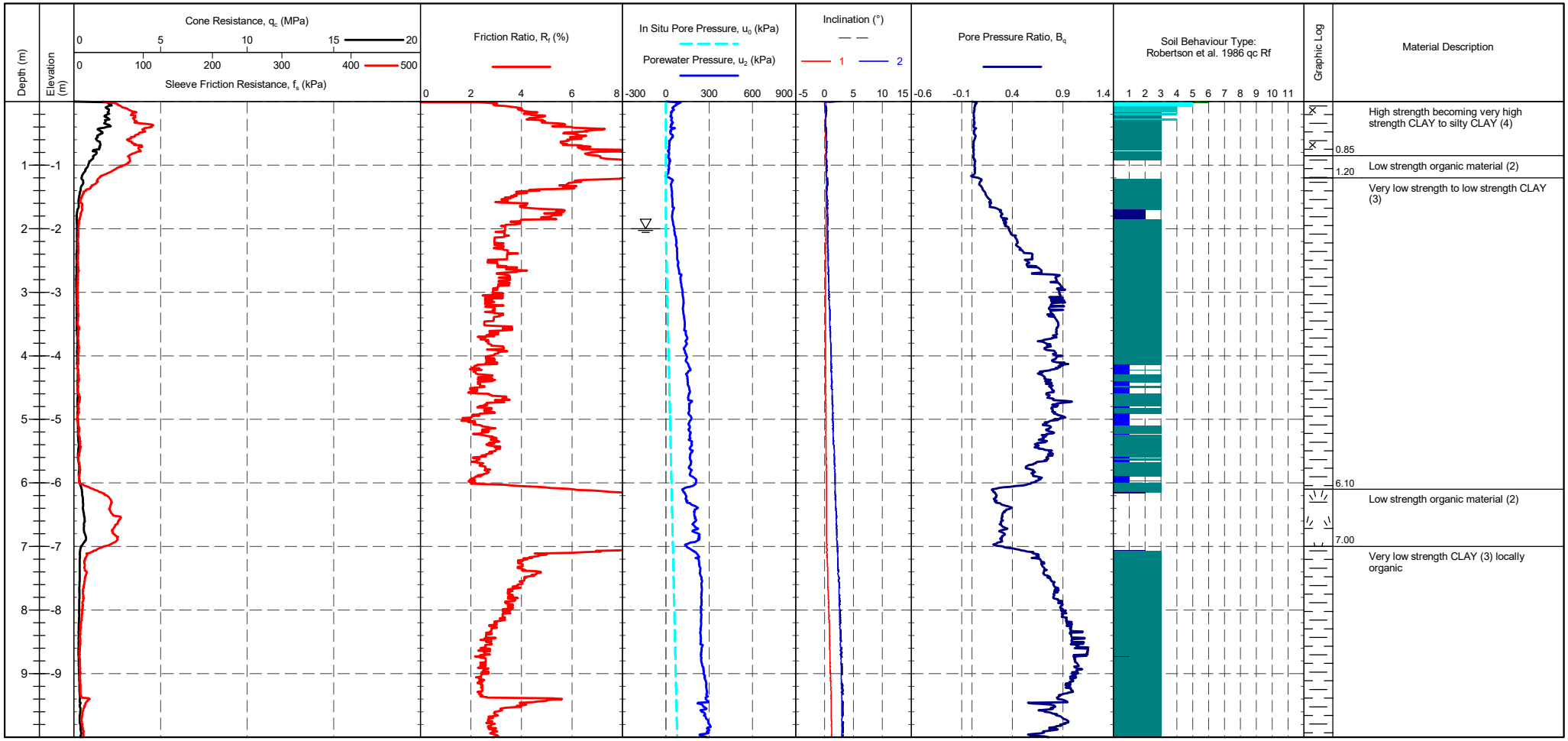
DRAWN	DATE 19/09/2019	
CHECKED	DATE 19/09/2019	
SCALE Not To Scale		A4
PROJECT No 1190415	FIGURE No	

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 04

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV

Difference
0.011 MPa
0.001 kPa
0.001 kPa

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

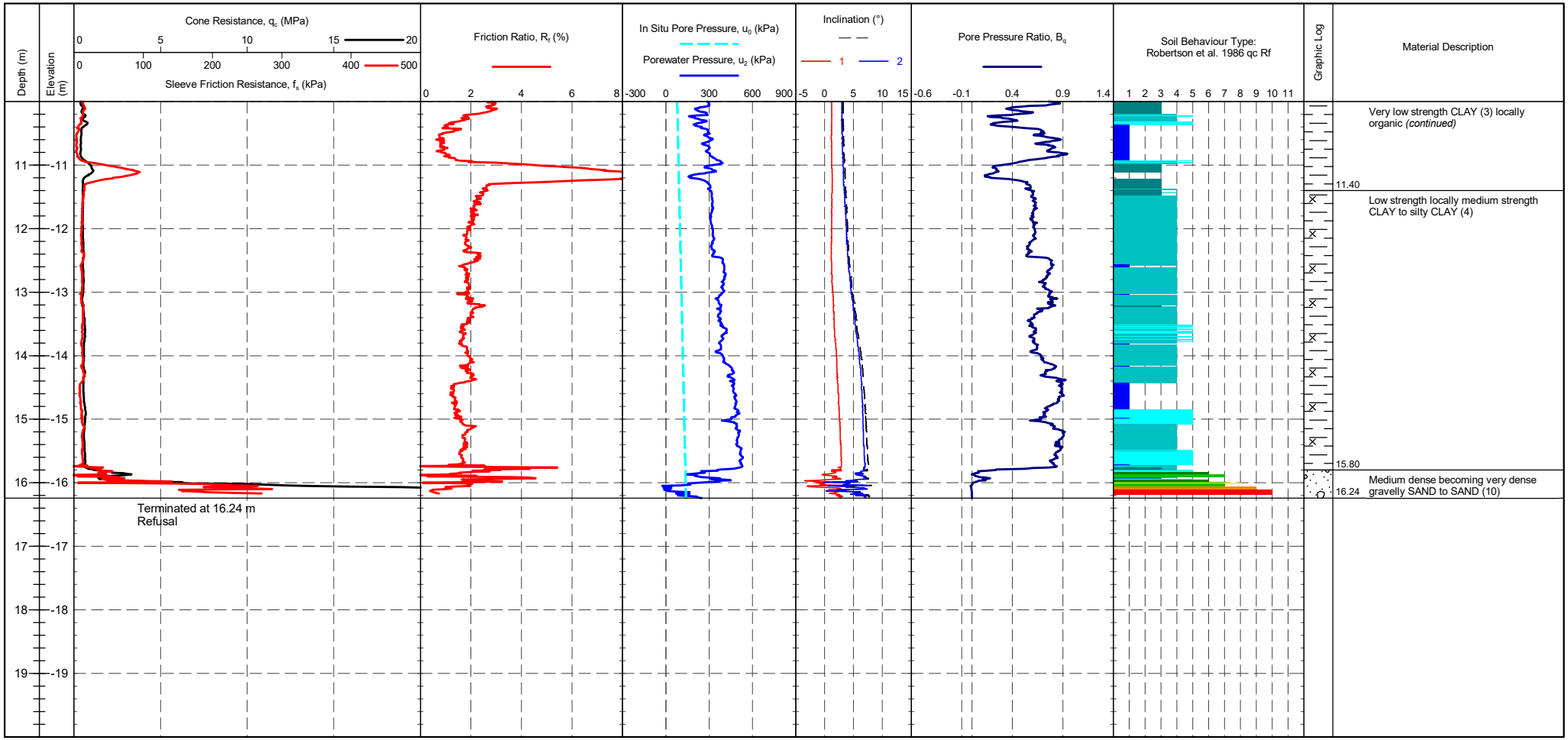
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 04

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

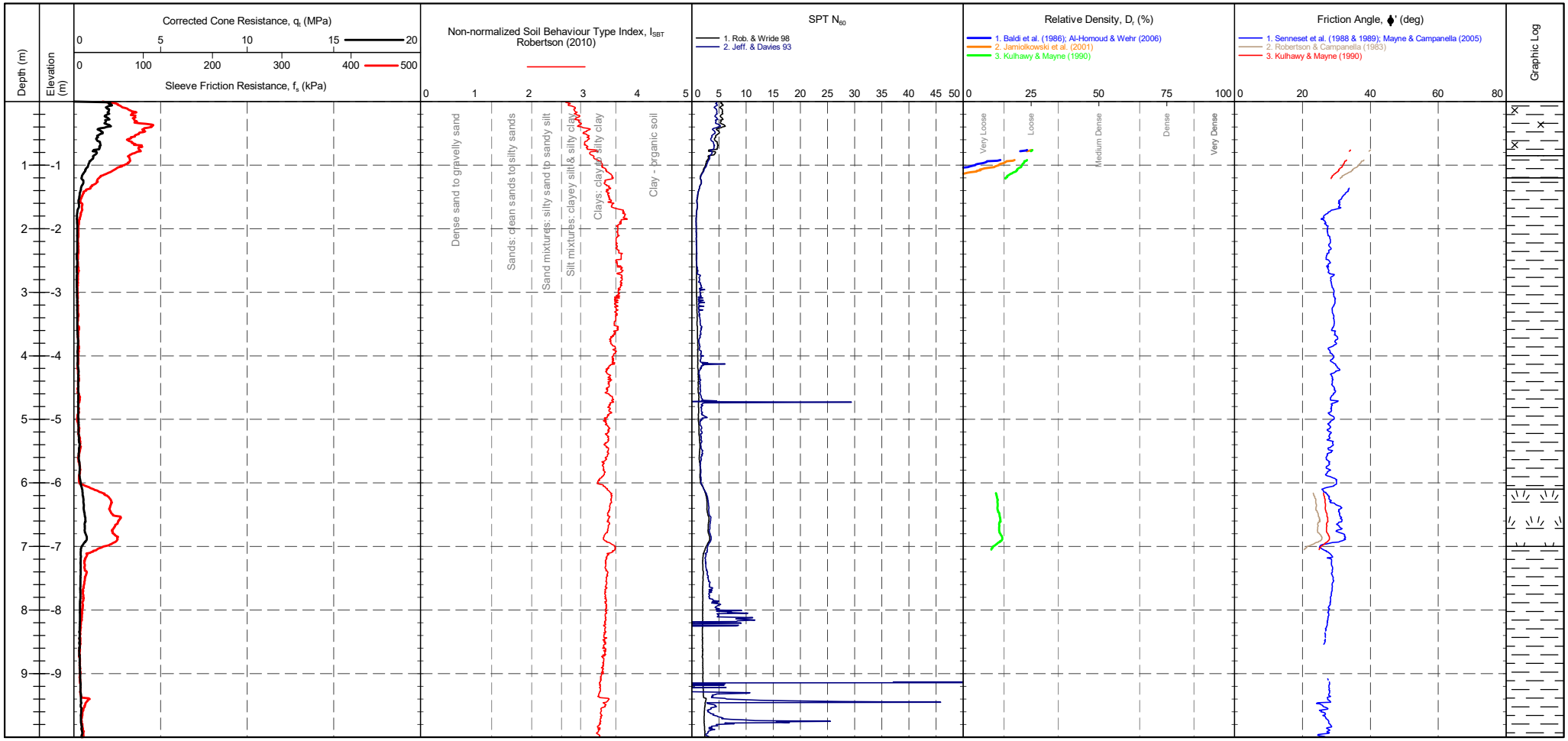
PointID
CPT 04

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

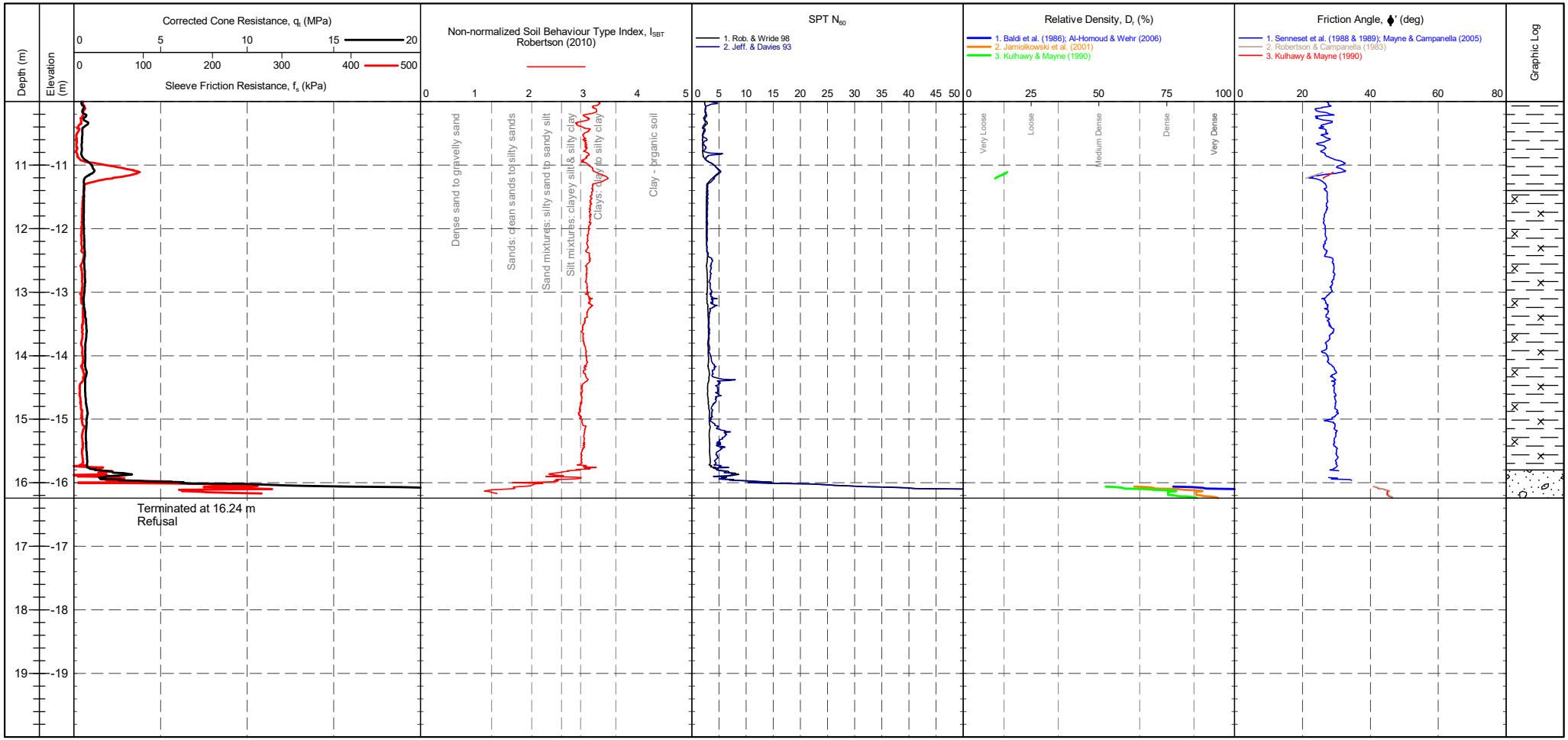
PointID
CPT 04

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

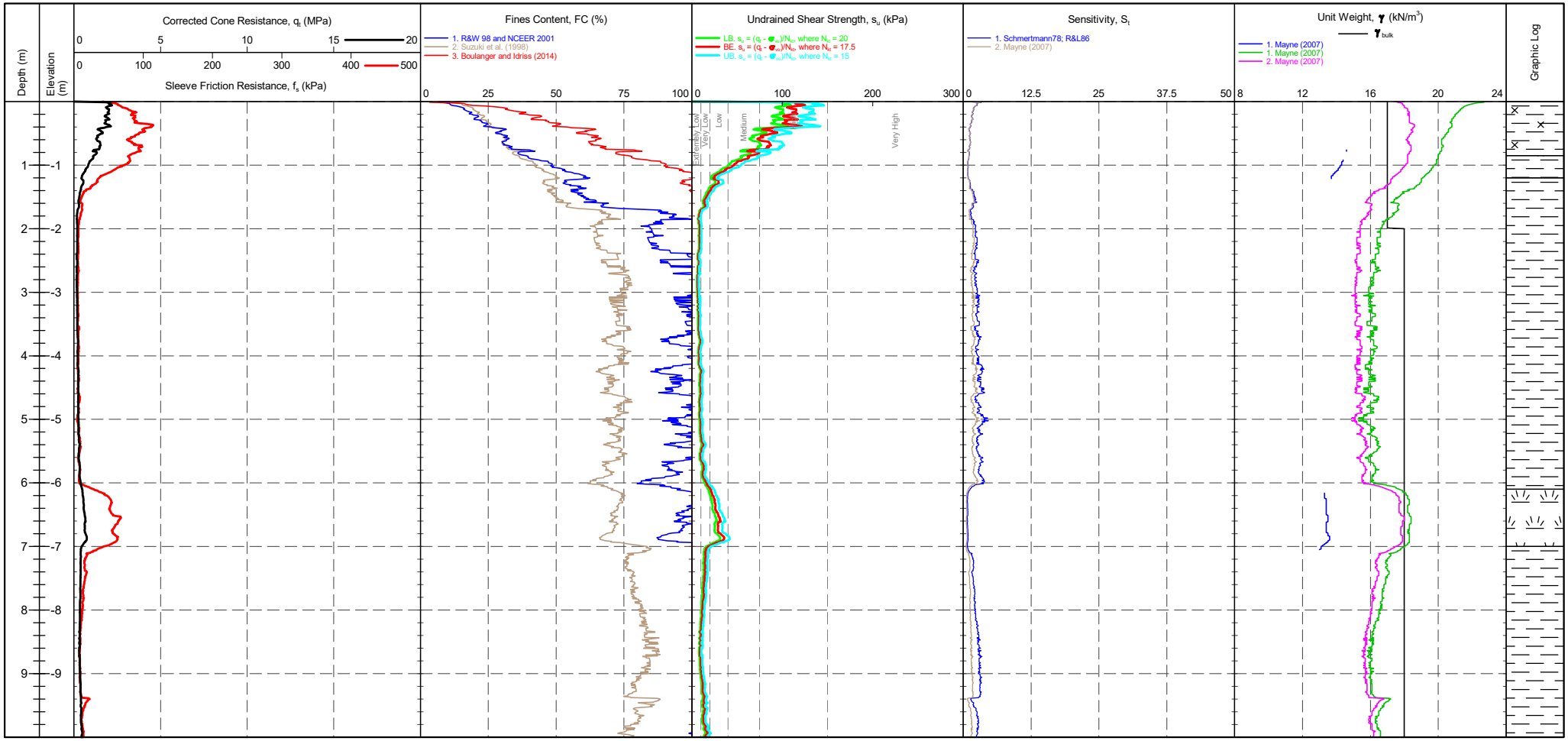
PointID
CPT 04

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

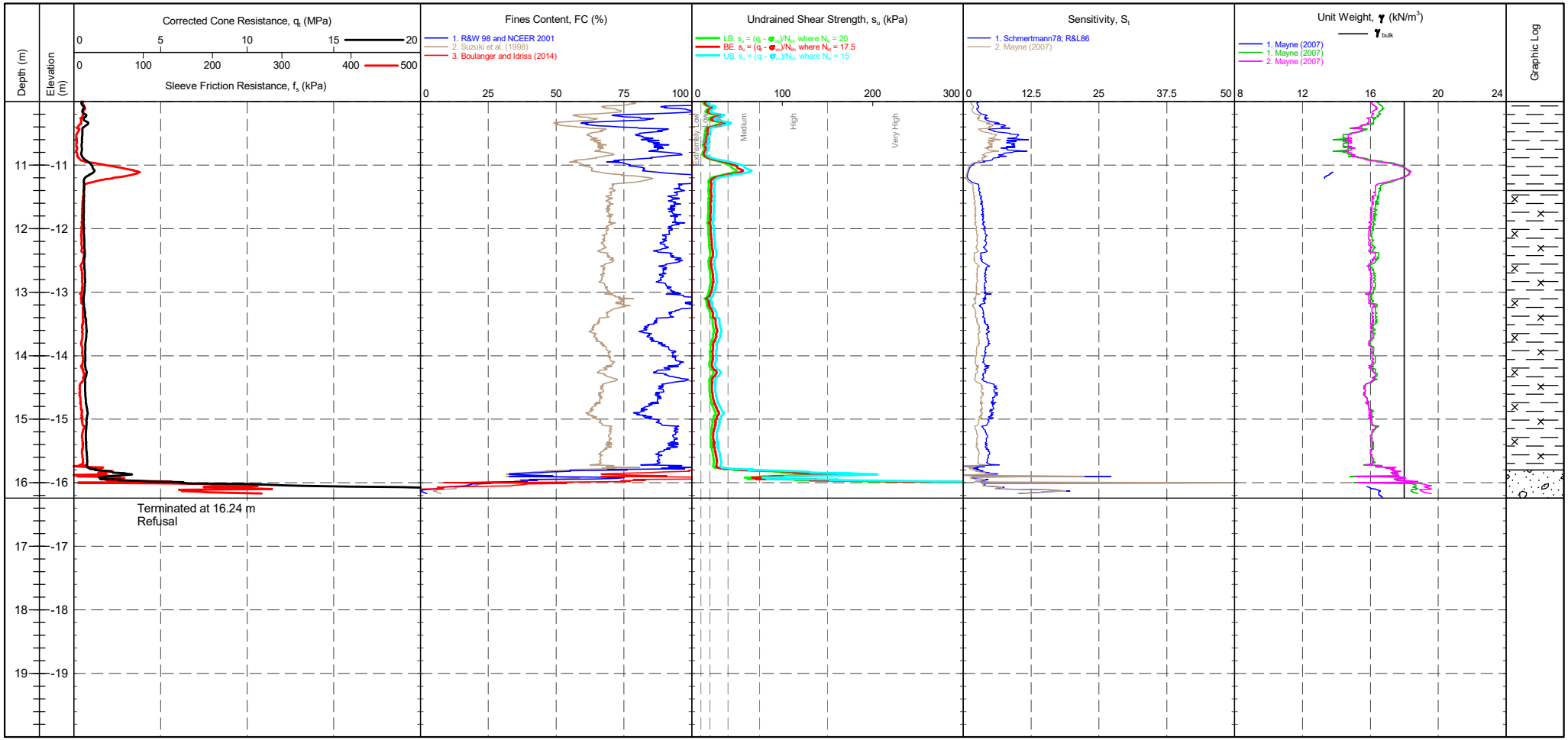
PointID
CPT 04

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

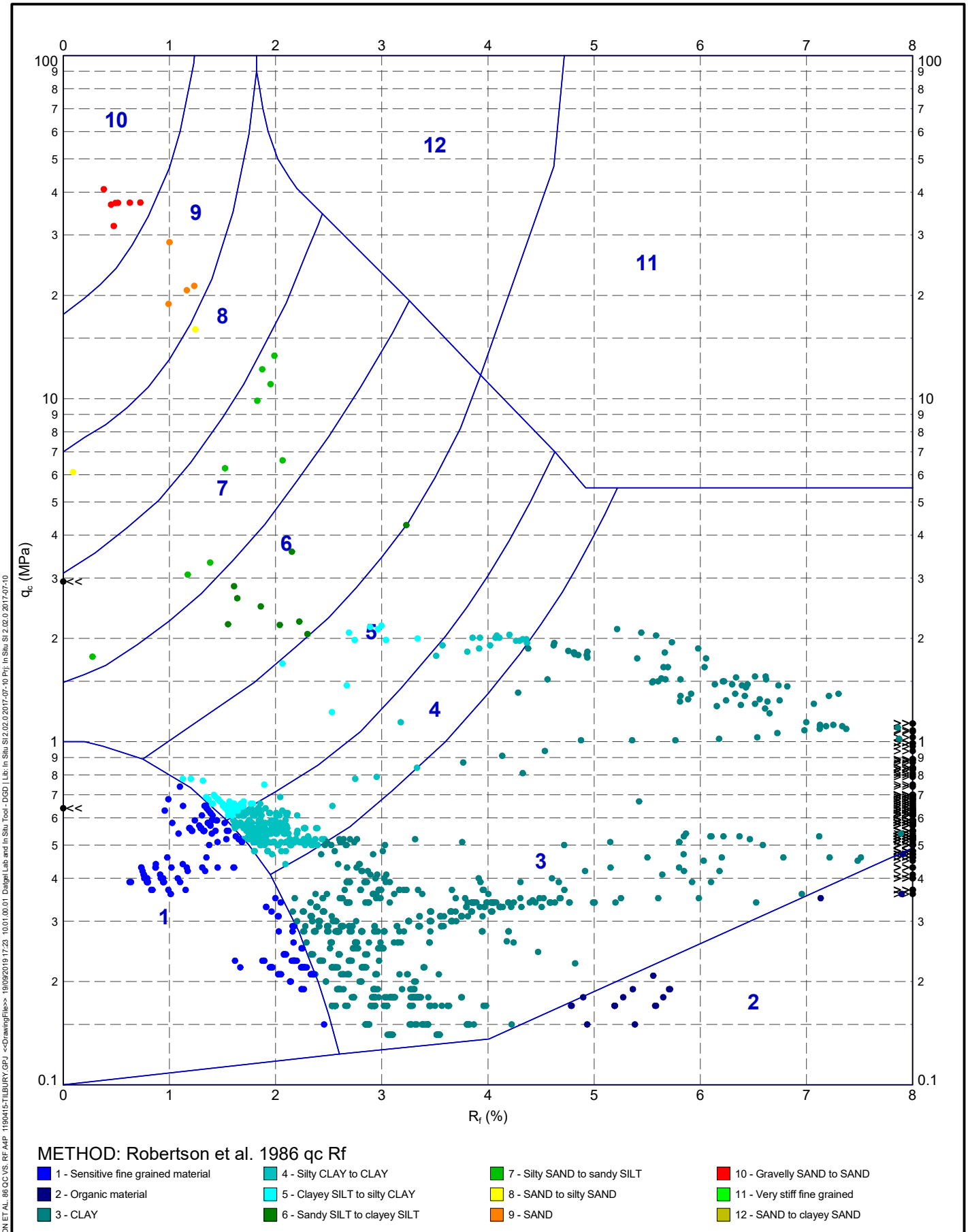
Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	295 mV	0.011 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 04	Pore Pressure 2	283 mV	285 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2391 mV	2499 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 04

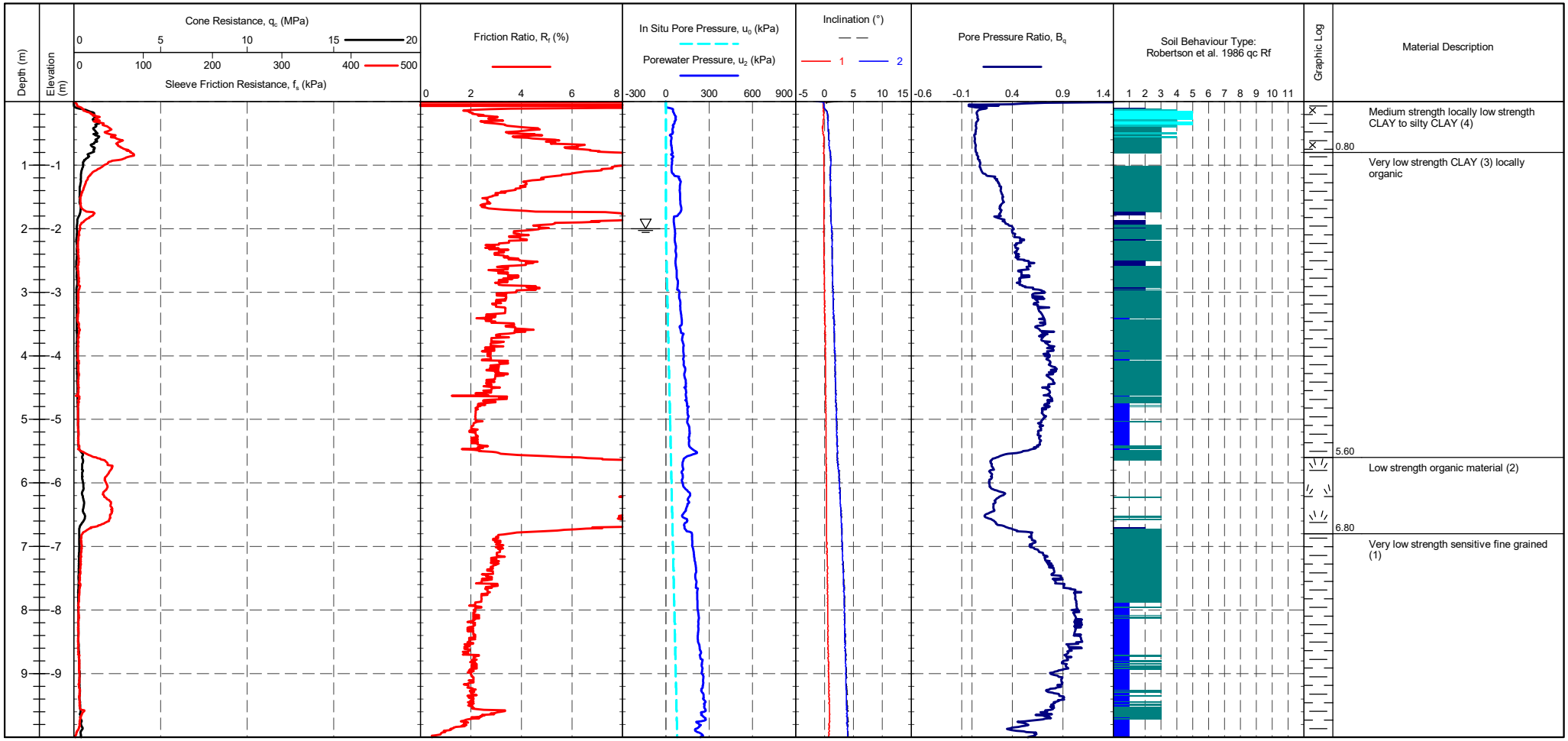
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 05

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2		
CONE AREA RATIO	: 0.79	RIG	: CPT 007		
FILTER POSITION	: u2	OPERATOR	: AC		
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05		
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	295 mV	295 mV	0 MPa
Sleeve	304 mV	303 mV	-0.001 kPa
Pore Pressure 2	277 mV	292 mV	0.004 kPa
X-Y Inclinometer	2598 mV	2414 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

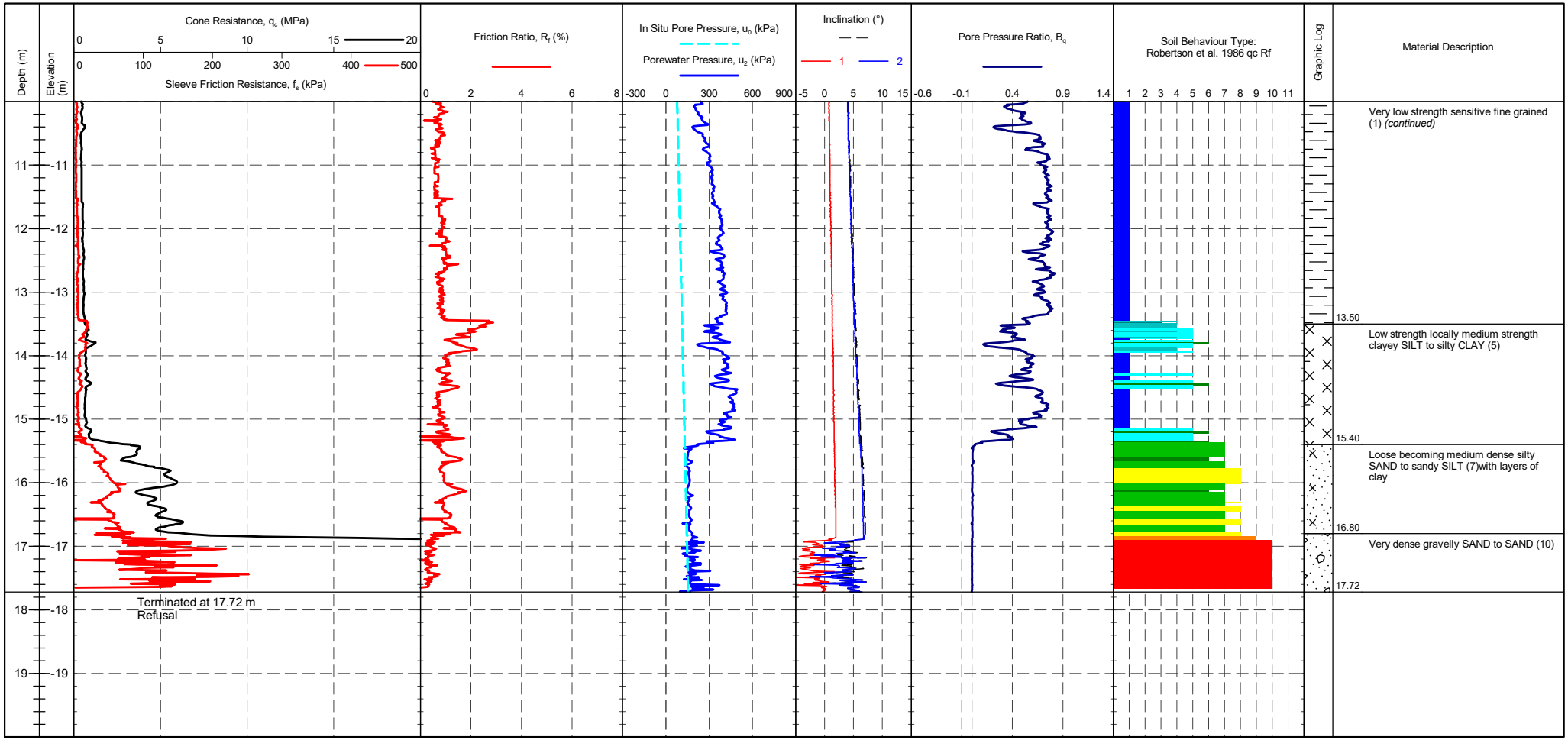
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 05

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	295 mV	295 mV
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	304 mV	303 mV
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05	Pore Pressure 2	277 mV	292 mV
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2598 mV	2414 mV

Difference
0 MPa
-0.001 kPa
0.004 kPa

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

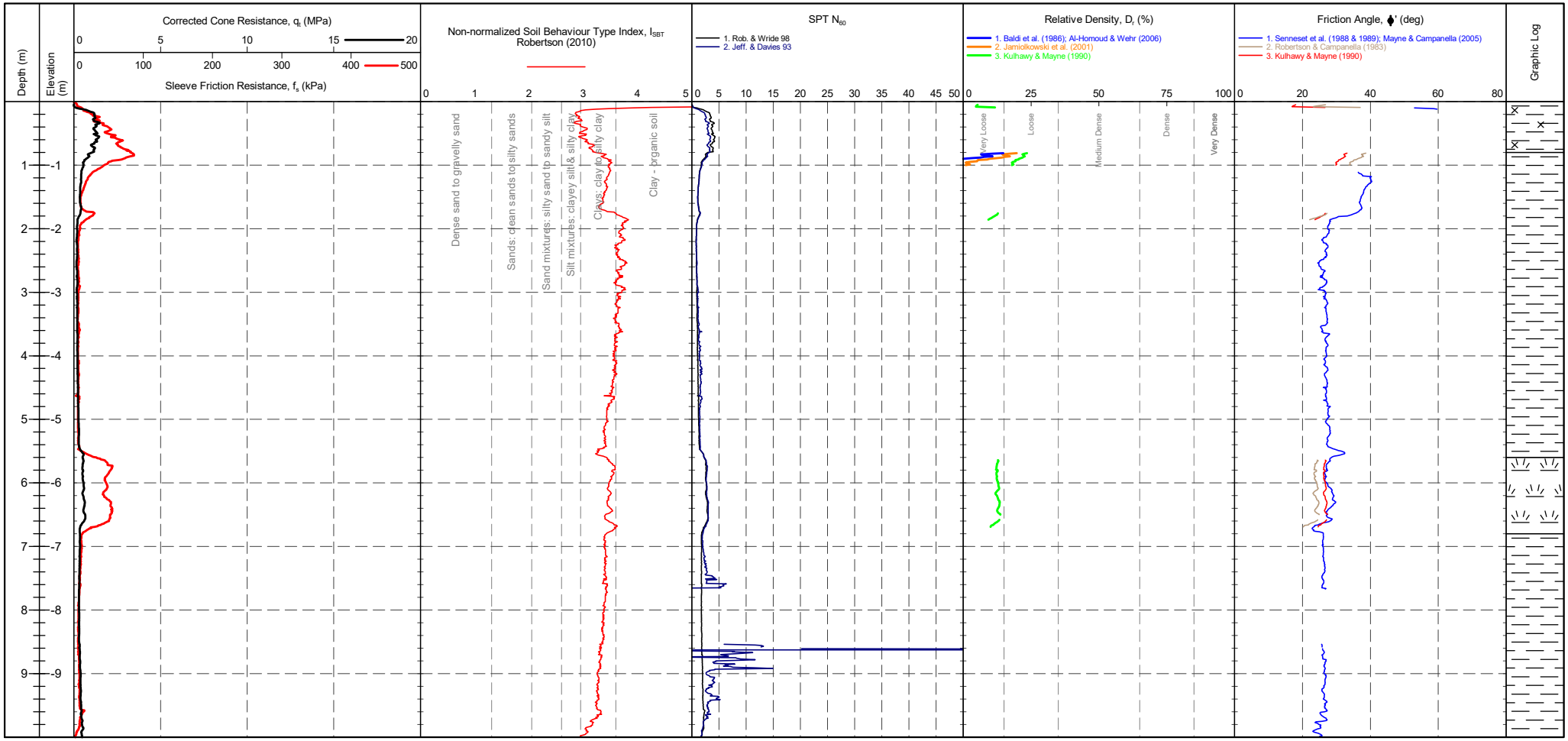
PointID
CPT 05

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	295 mV	295 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	304 mV	303 mV	-0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05	Pore Pressure 2	277 mV	292 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2598 mV	2414 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

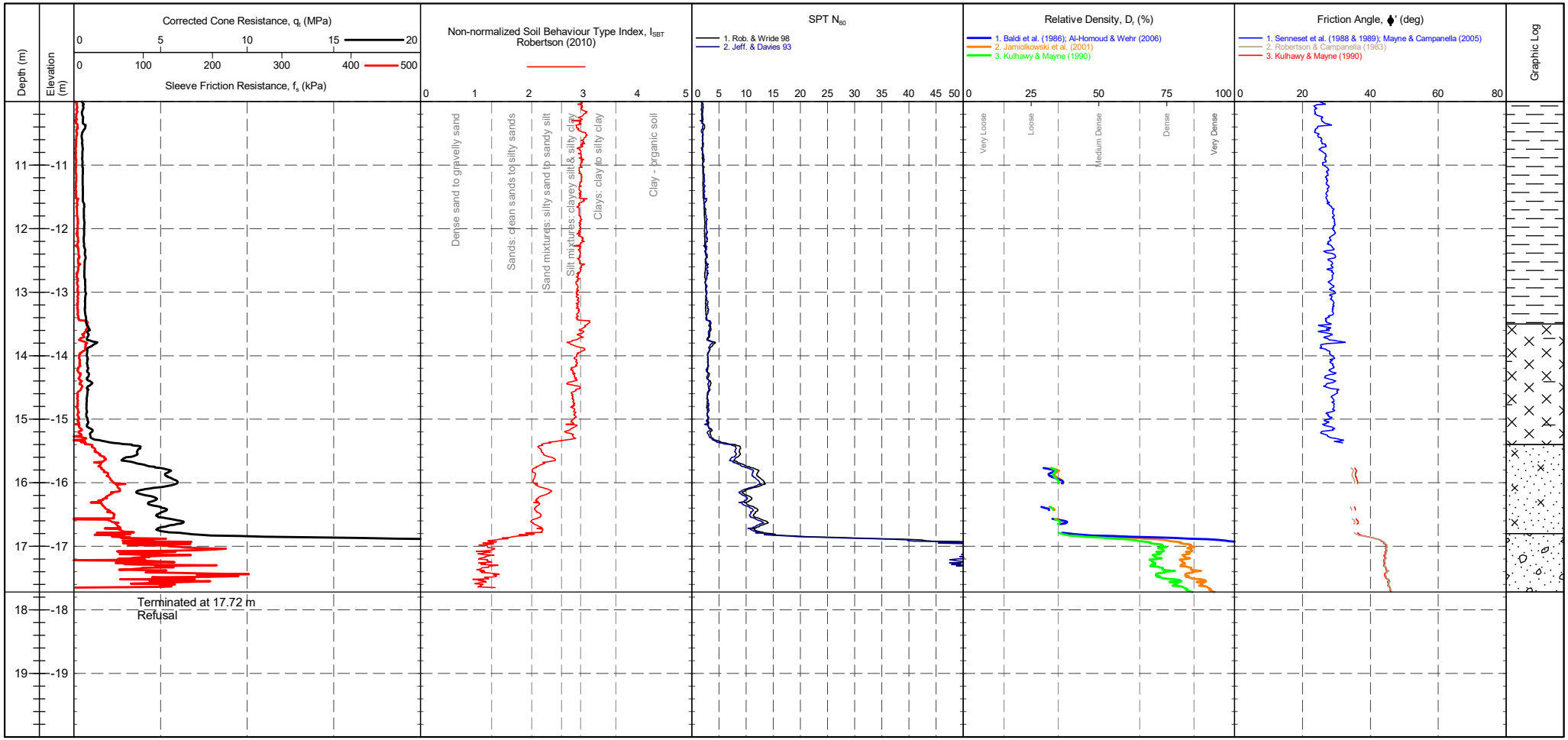
PointID
CPT 05

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	295 mV	295 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	304 mV	303 mV	-0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05	Pore Pressure 2	277 mV	292 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2598 mV	2414 mV	

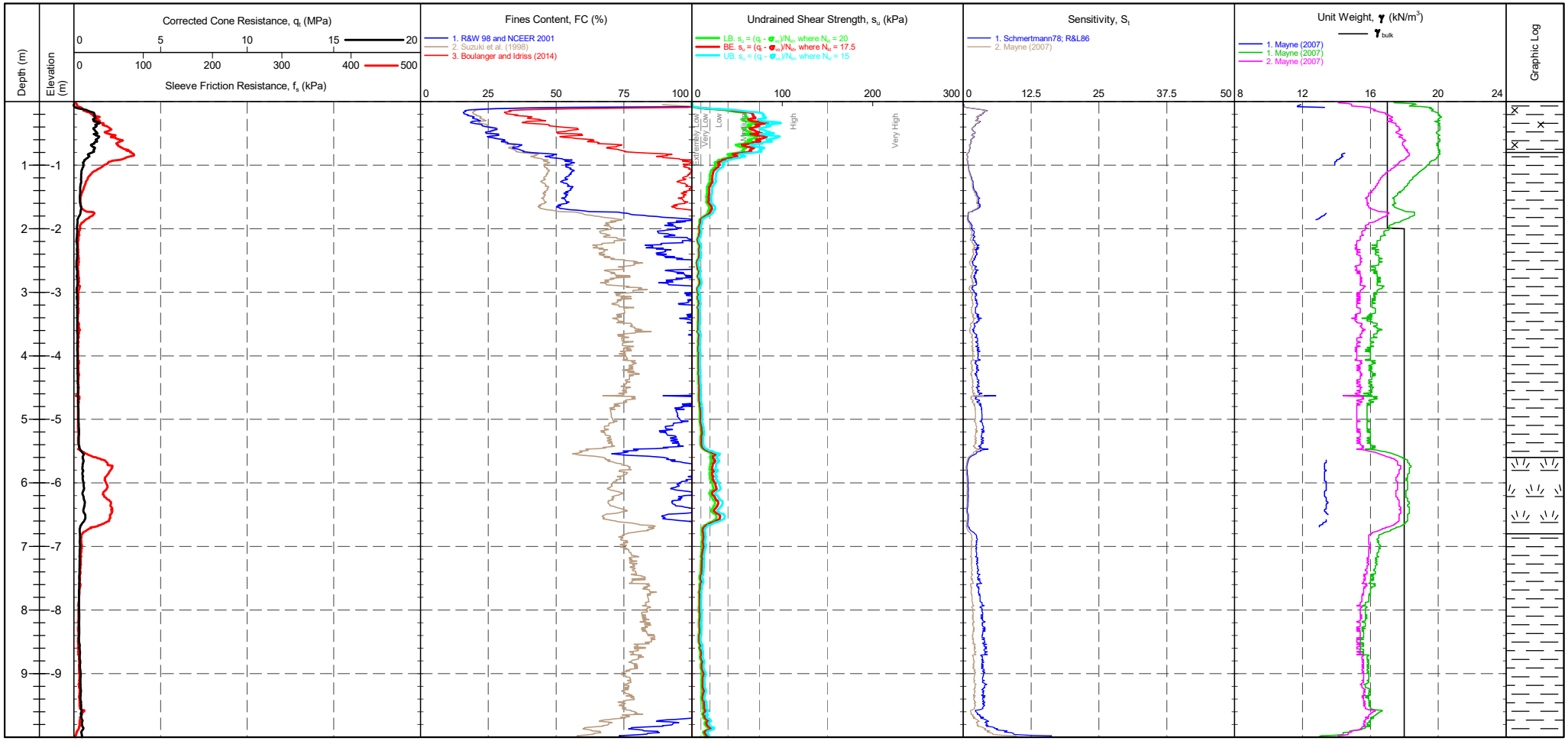
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 05

CLIENT : Terra Consult PROJECT : Tilbury LOCATION : Tilbury PROJECT No. : 1190415	EASTING : NORTHING : ELEVATION : 0.000 m OD CHECKED BY : LD TERMINATION REASON : Refusal	Remark: Test refused on tip resistance.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 17/09/2019 PLOT DATE : 19/09/2019 METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	295 mV	295 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	304 mV	303 mV	-0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05	Pore Pressure 2	277 mV	292 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2598 mV	2414 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

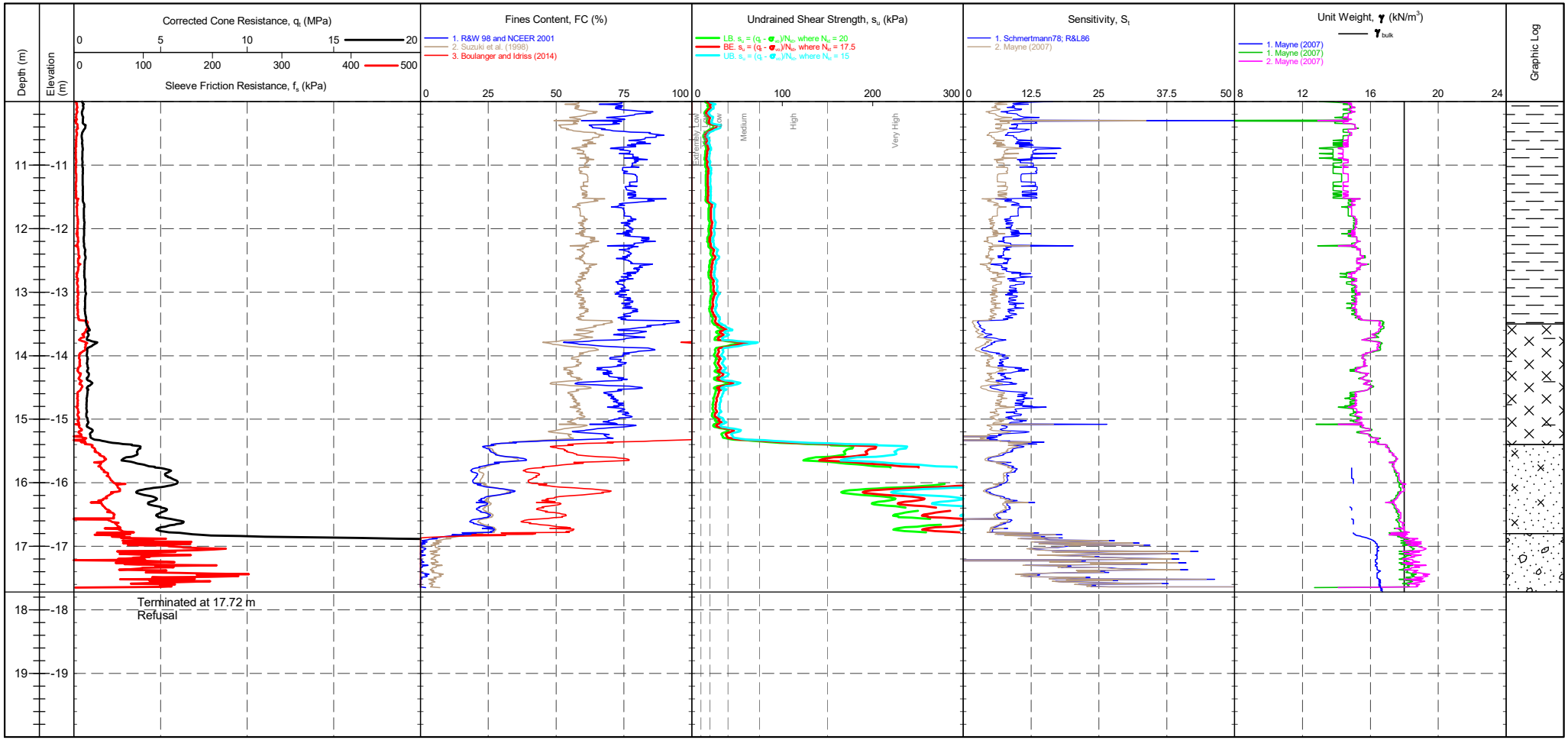
PointID
CPT 05

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

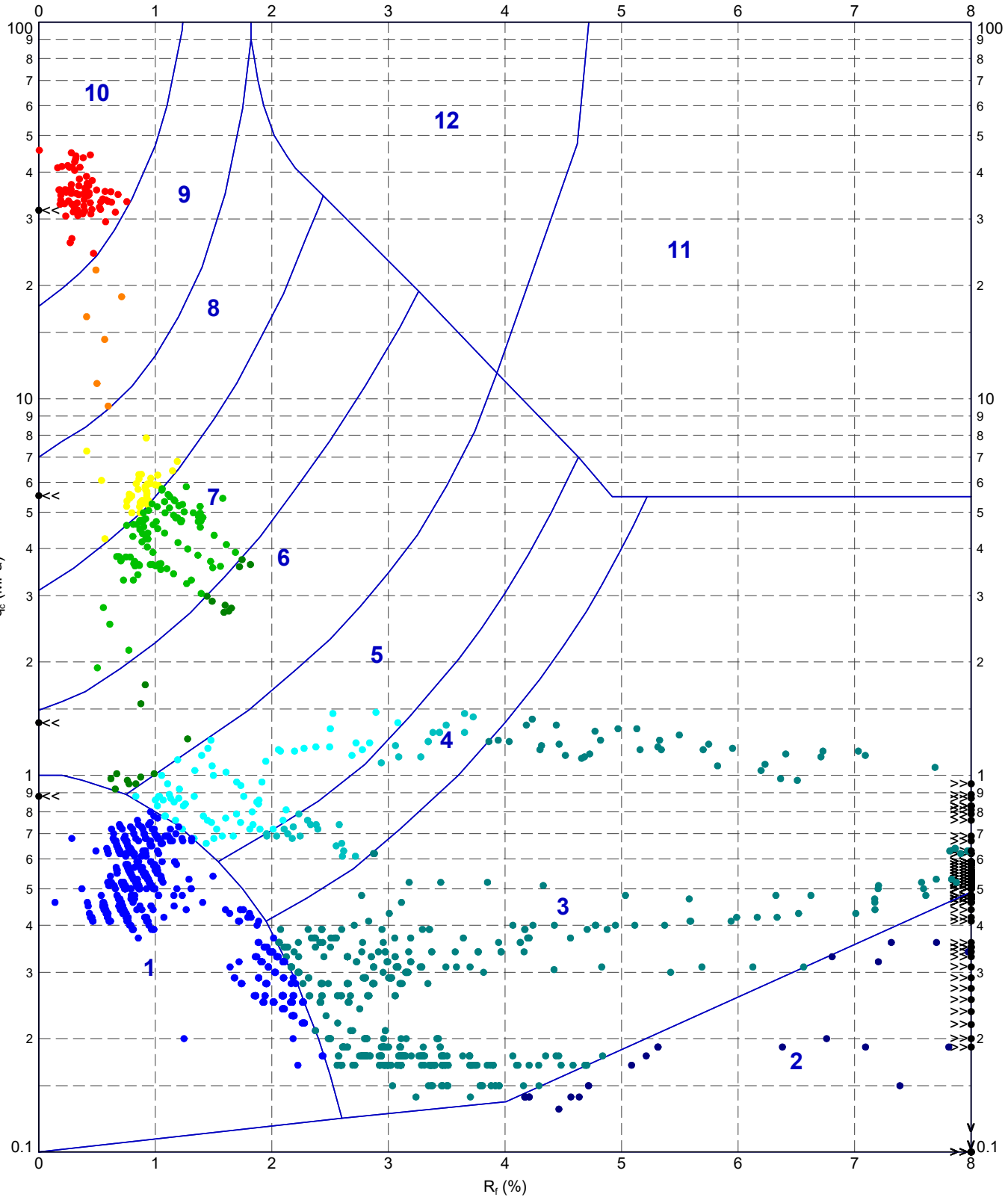
Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	295 mV	295 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	304 mV	303 mV	-0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 05	Pore Pressure 2	277 mV	292 mV	0.004 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2598 mV	2414 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 05

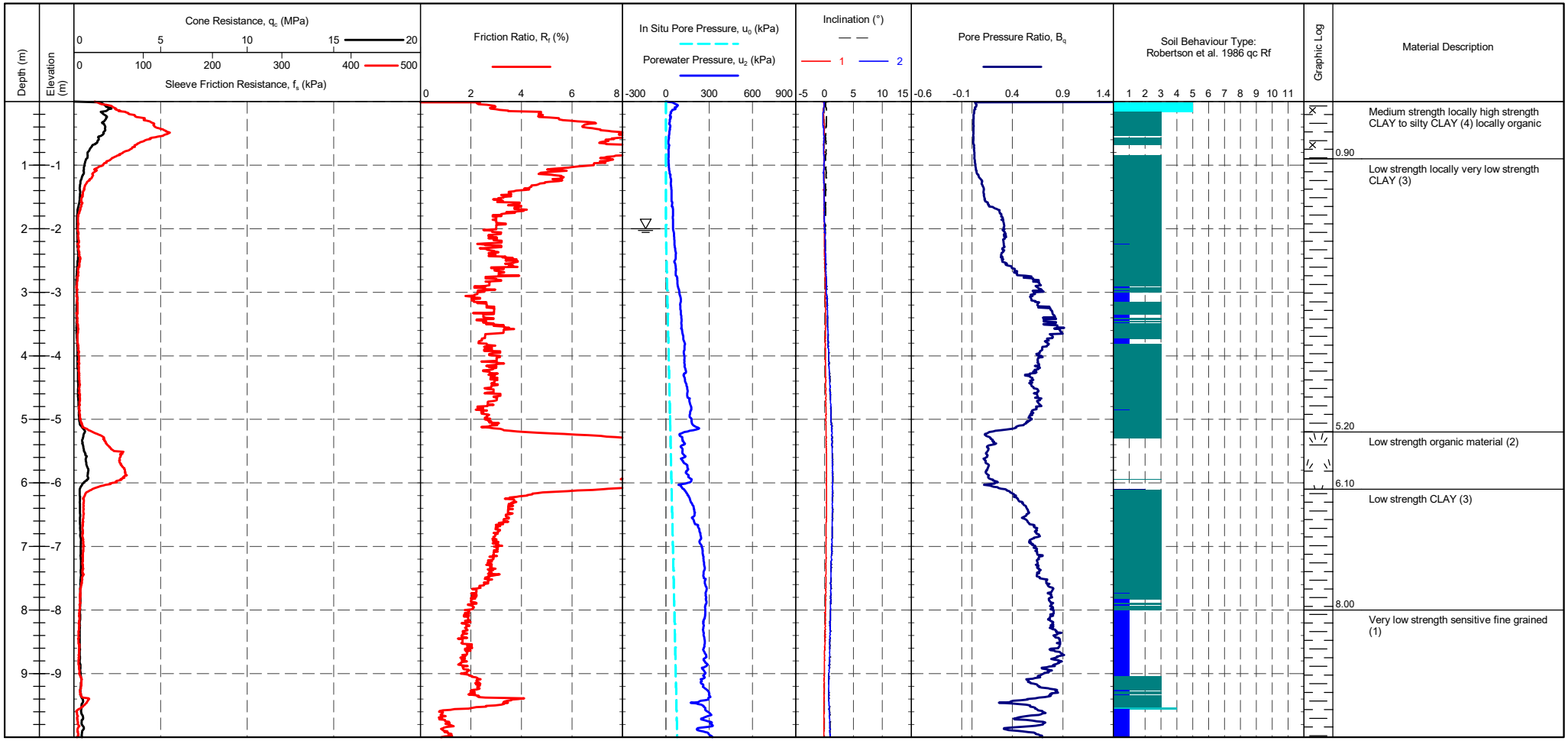
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 06

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

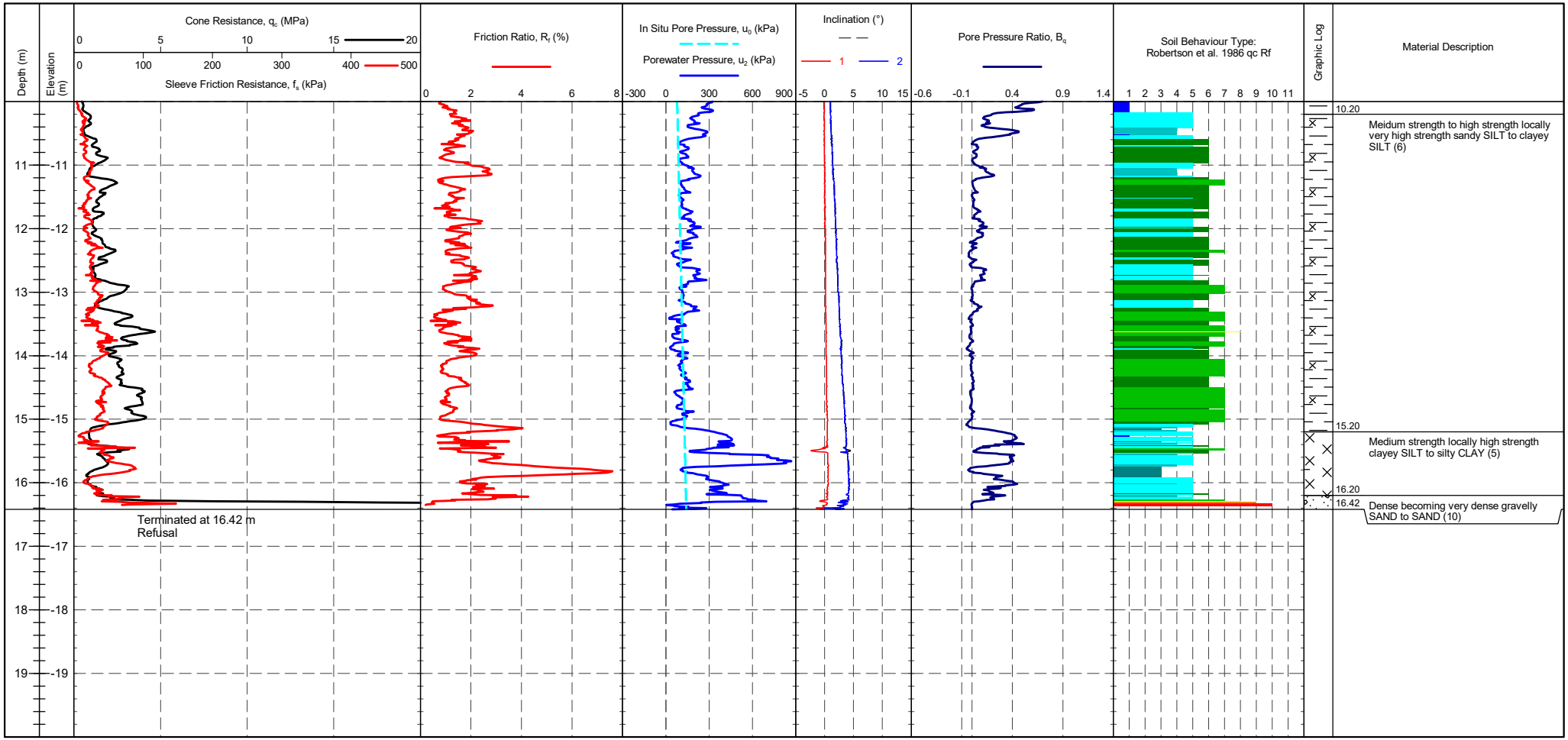
PointID
CPT 06

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

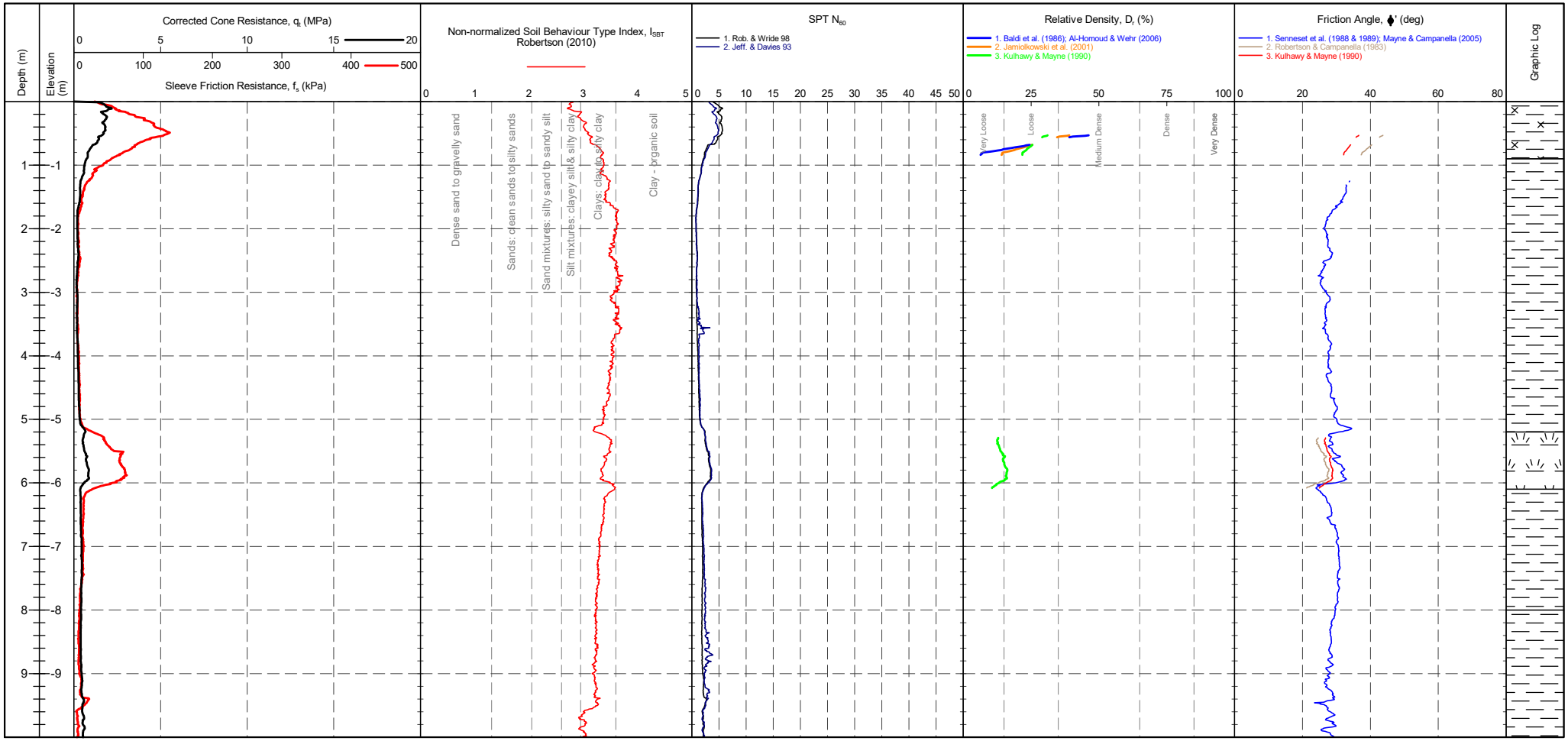
PointID
CPT 06

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

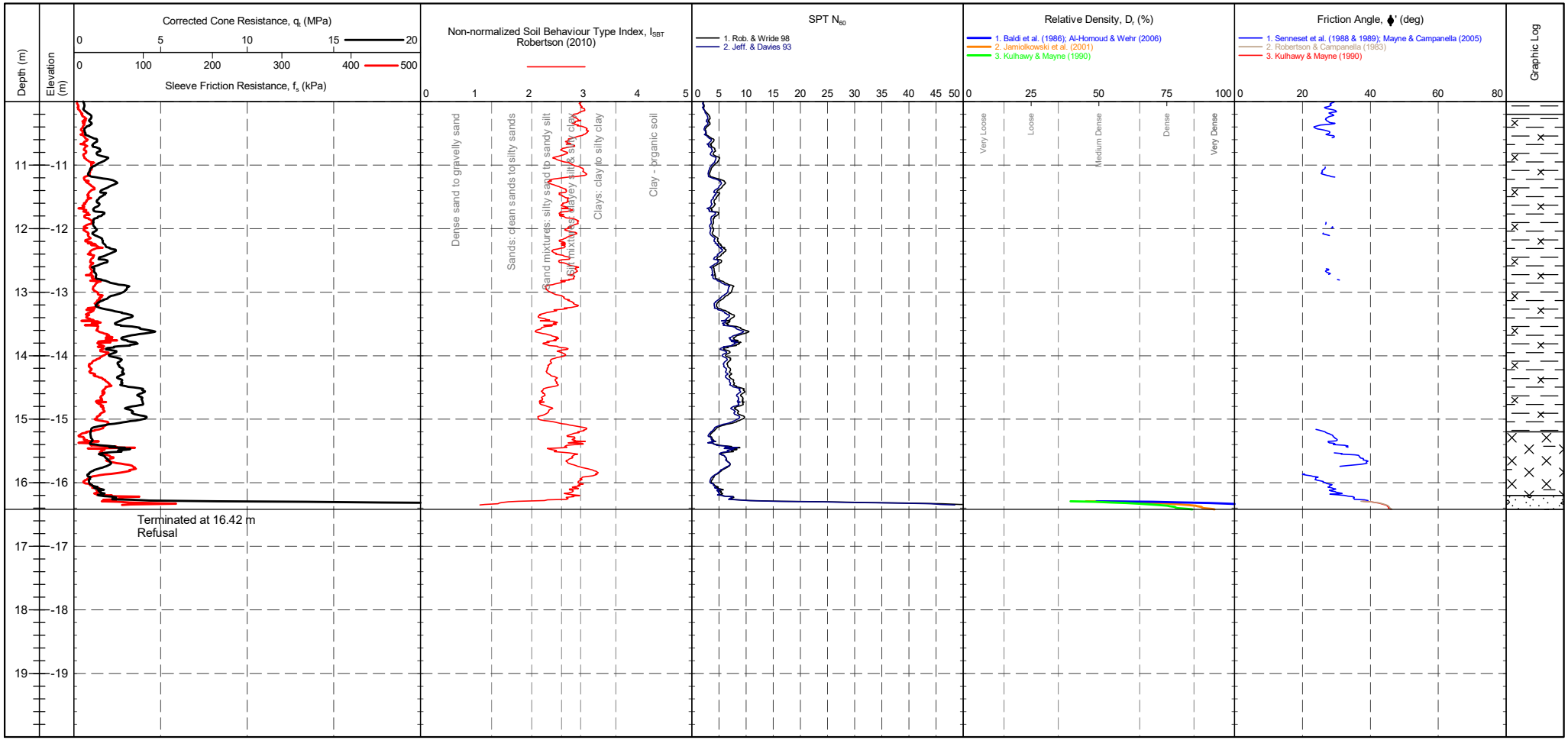
PointID
CPT 06

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

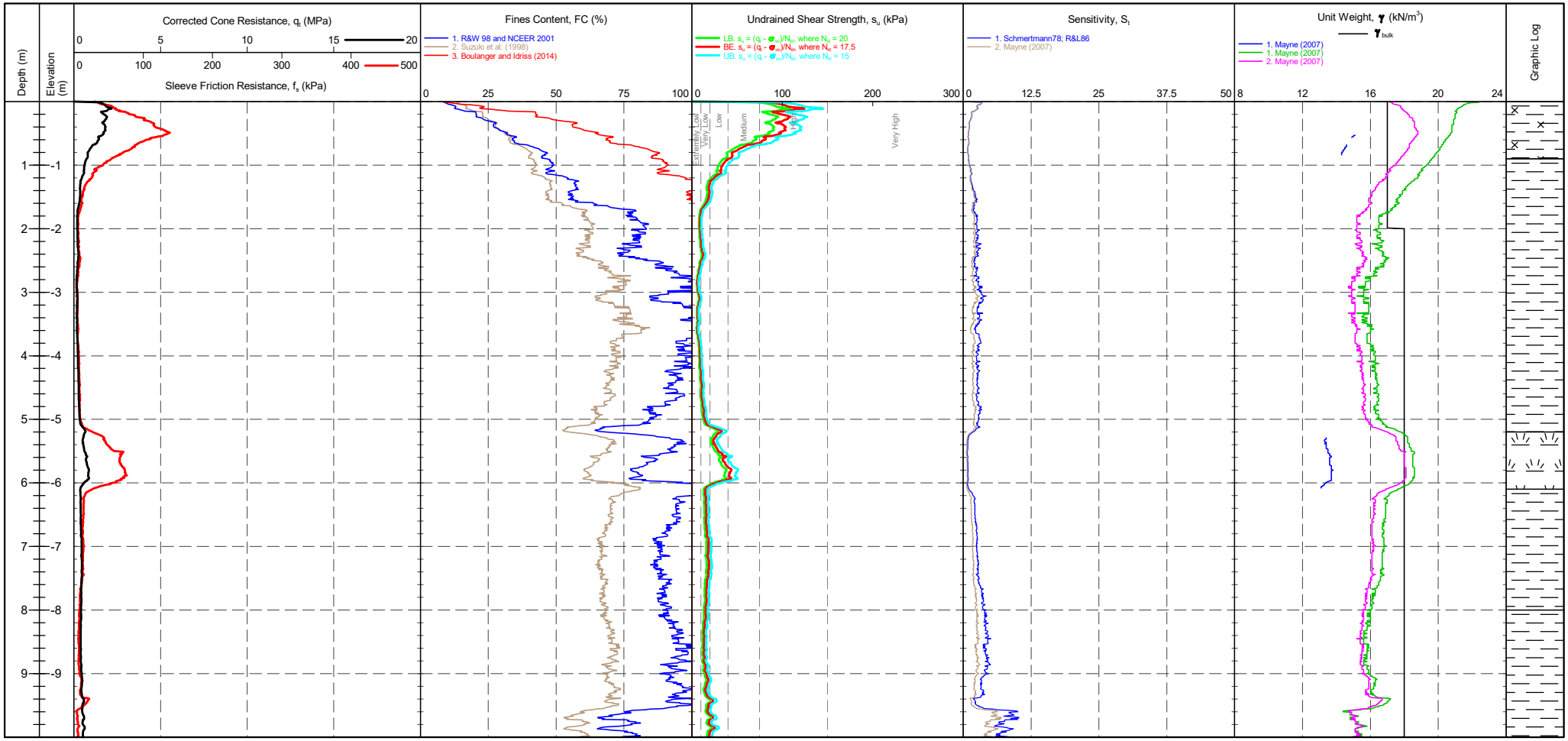
PointID
CPT 06

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 17/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

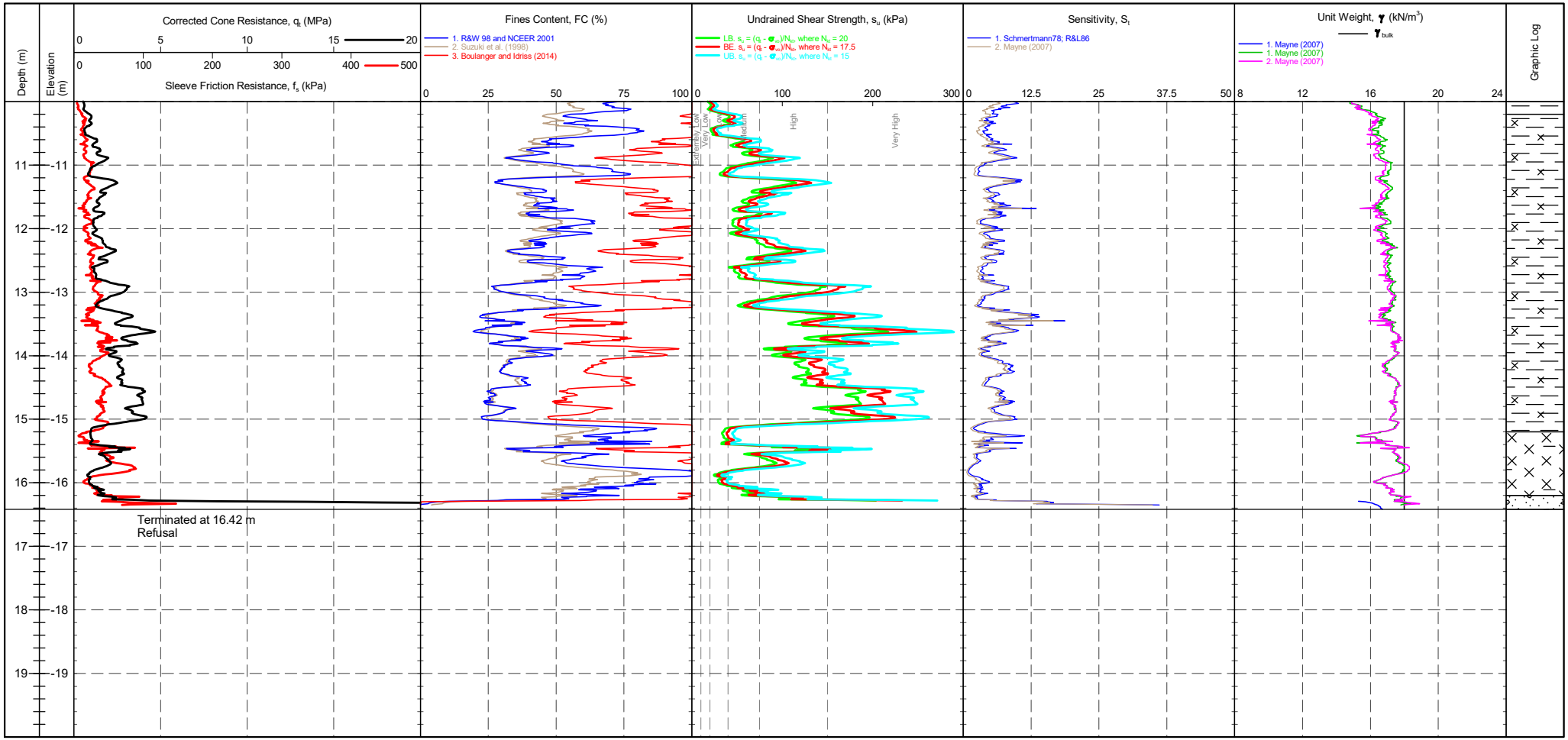
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

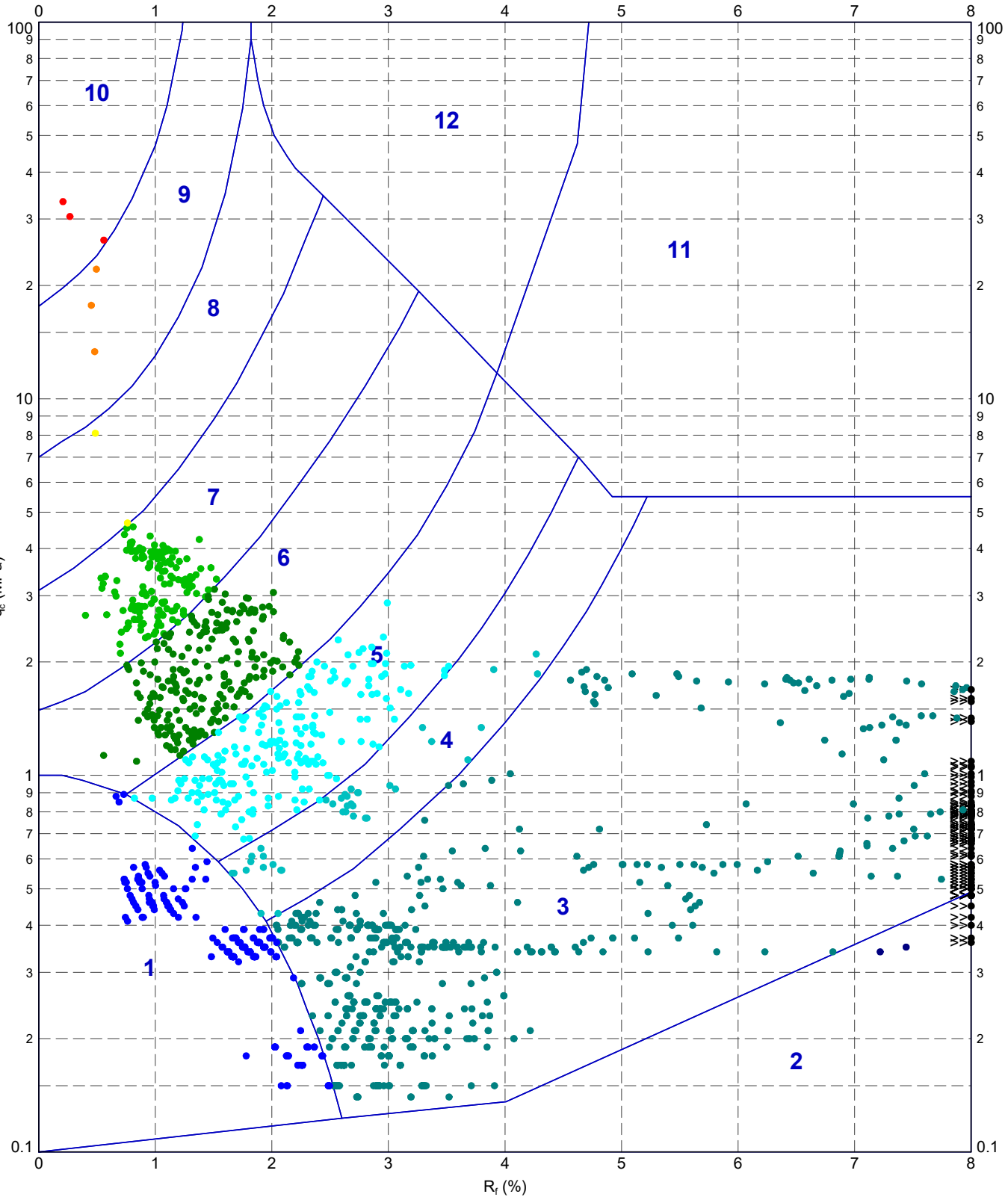
PointID
CPT 06

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 17/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	294 mV	294 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	305 mV	0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 06	Pore Pressure 2	288 mV	290 mV	0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2382 mV	2441 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 06

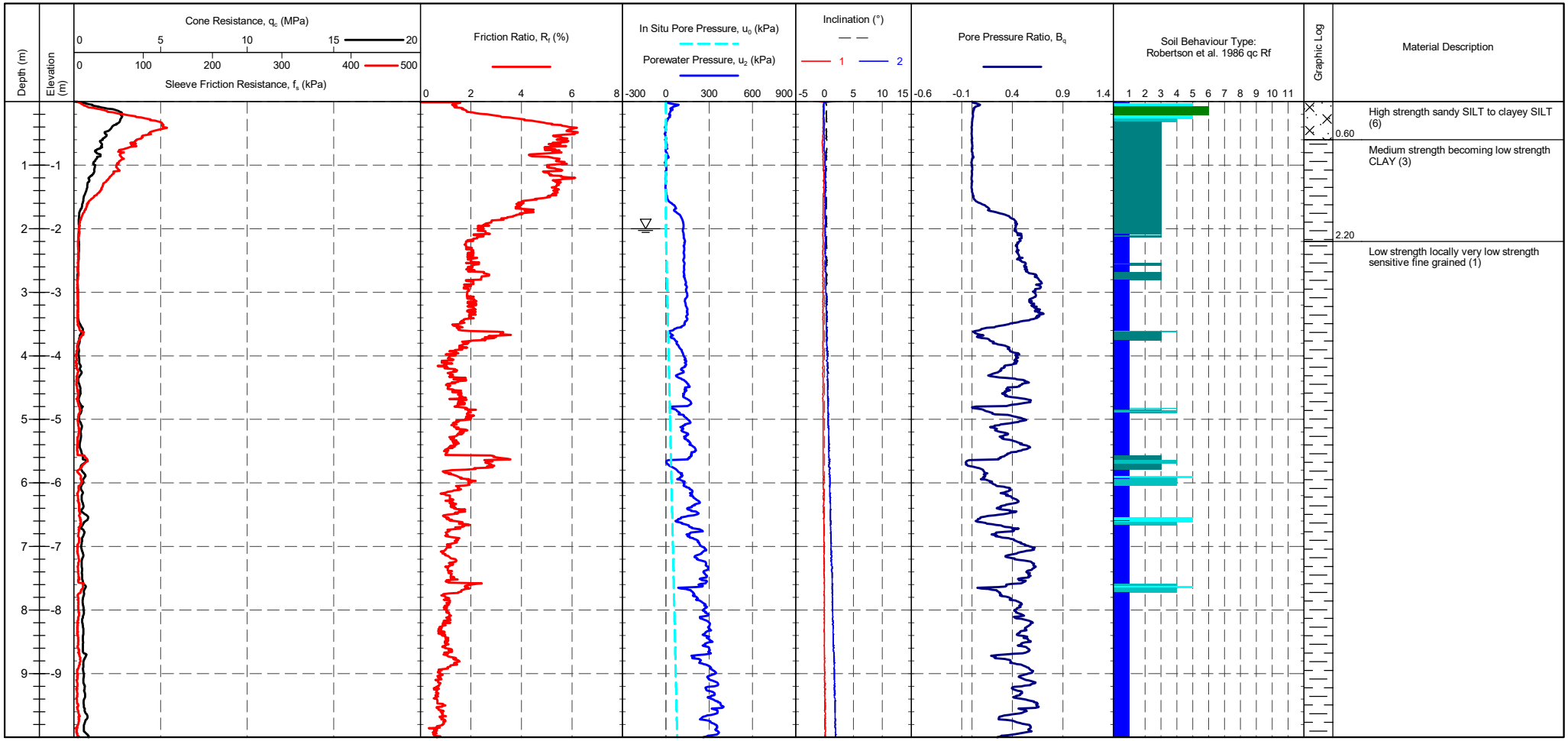
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 07

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre 289 mV	Post 293 mV / Difference 0.044 MPa
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Sleeve	303 mV	305 mV / 0.001 kPa
FILTER POSITION	: u2	OPERATOR	: AC	Pore Pressure 2	280 mV	274 mV / -0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	X-Y Inclinometer	2301 mV	2437 mV
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild			

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

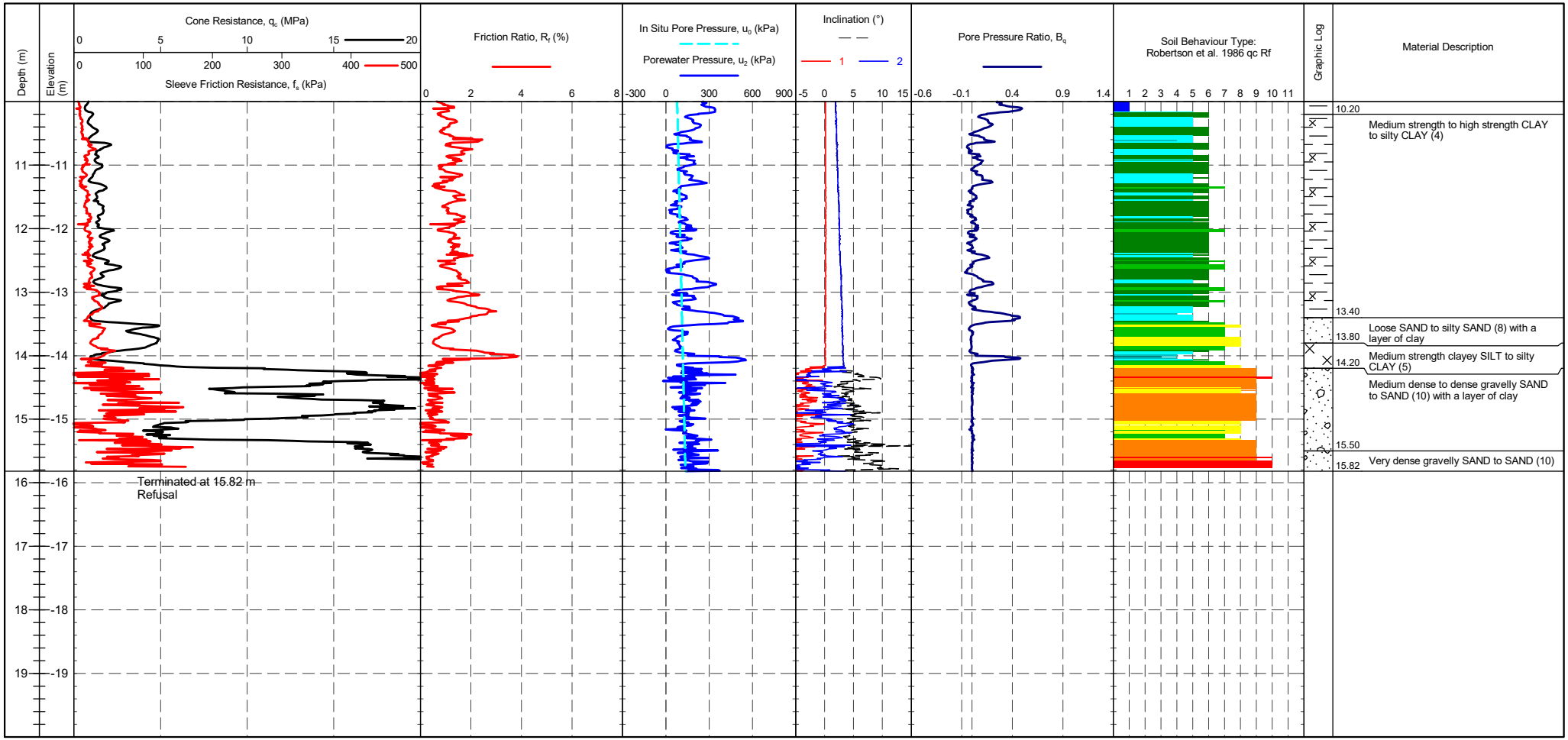
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 07

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	289 mV	293 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	305 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	Pore Pressure 2	280 mV	274 mV	-0.002 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2301 mV	2437 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

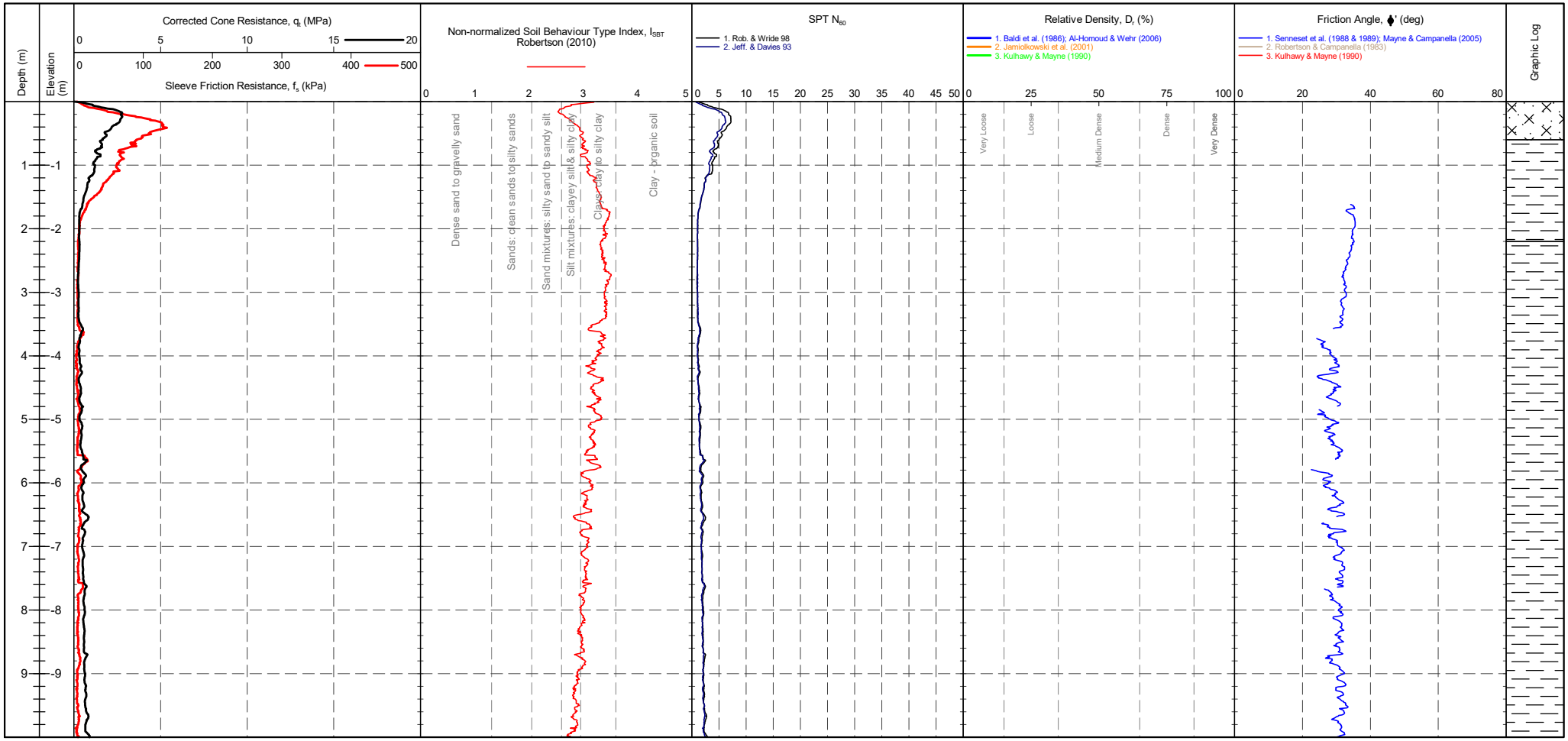
PointID
CPT 07

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	289 mV	293 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	305 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	Pore Pressure 2	280 mV	274 mV	-0.002 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2301 mV	2437 mV	

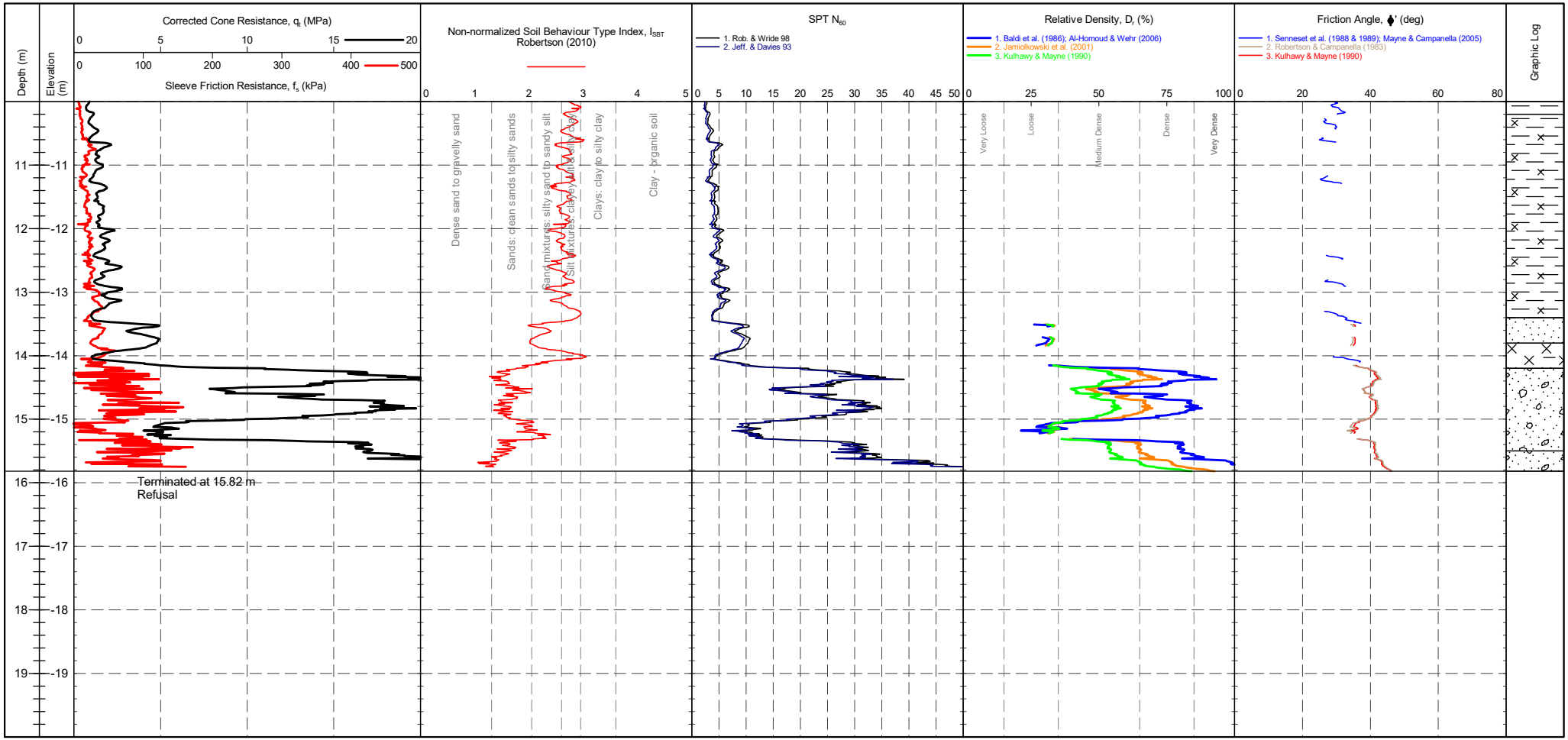
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

PointID
CPT 07

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Tip	289 mV	293 mV	0.044 MPa
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Sleeve	303 mV	305 mV	0.001 kPa
FILTER POSITION	: u2	OPERATOR	: AC	Pore Pressure 2	280 mV	274 mV	-0.002 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	X-Y Inclinometer	2301 mV	2437 mV	
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild				

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

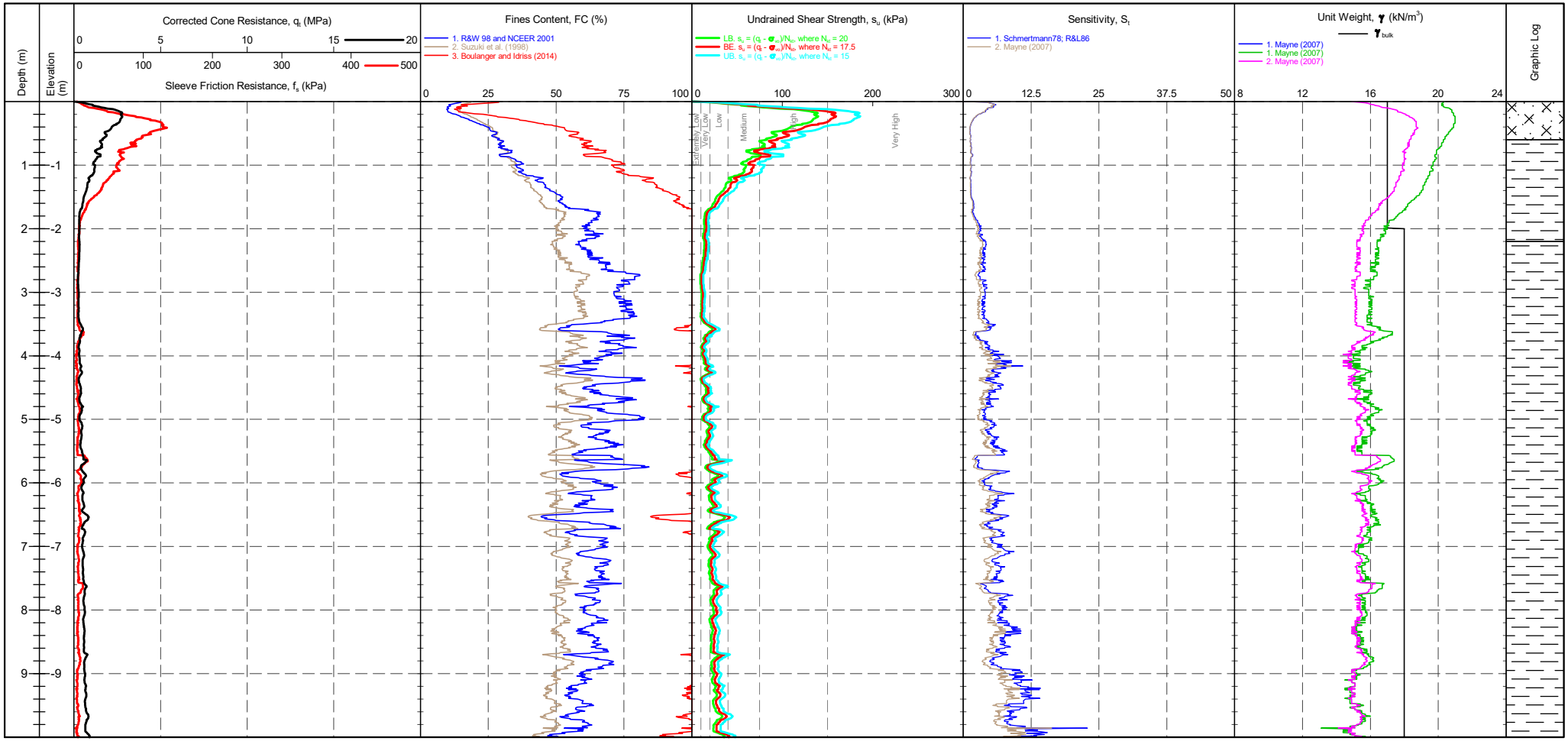
PointID
CPT 07

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	289 mV	293 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	305 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	Pore Pressure 2	280 mV	274 mV	-0.002 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2301 mV	2437 mV	

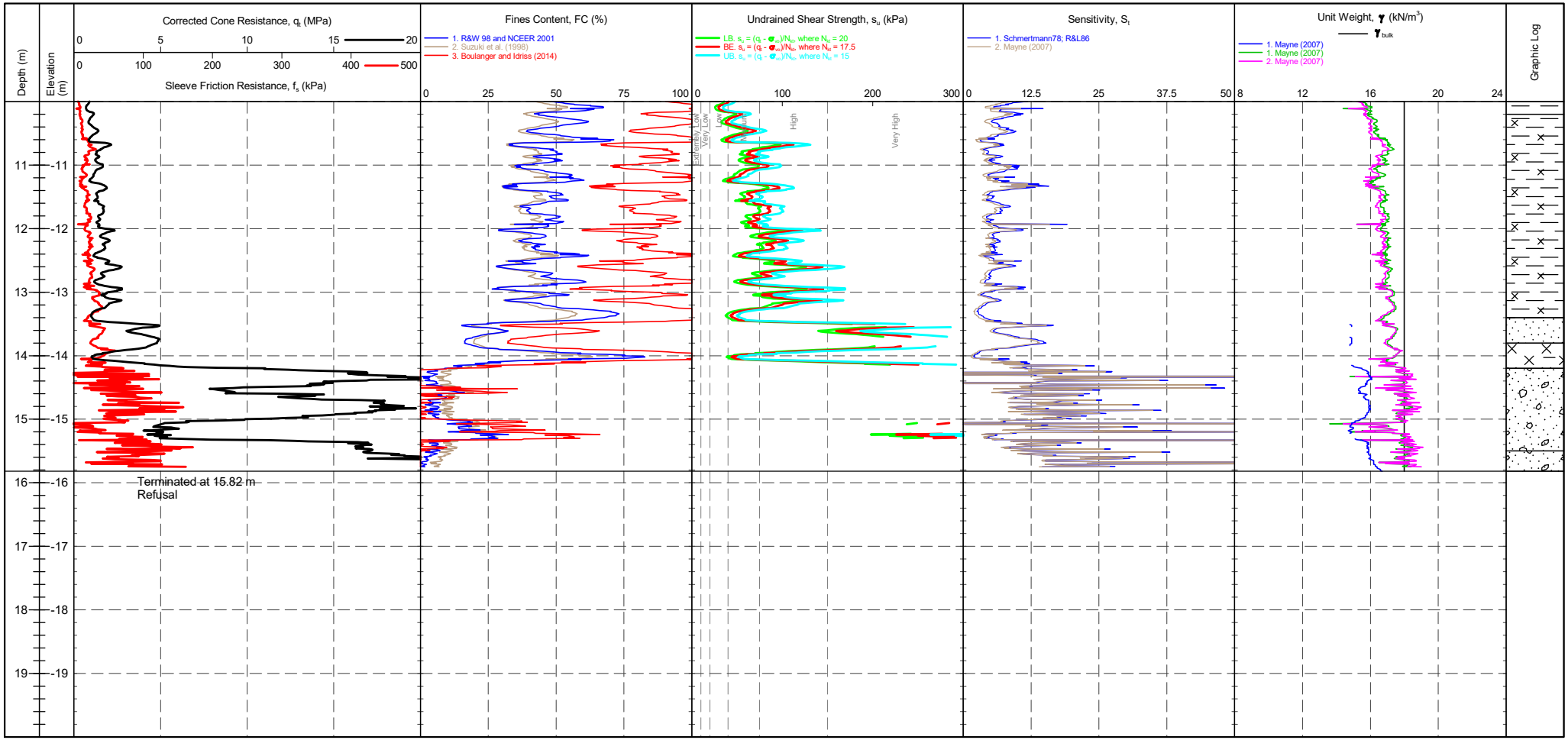
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

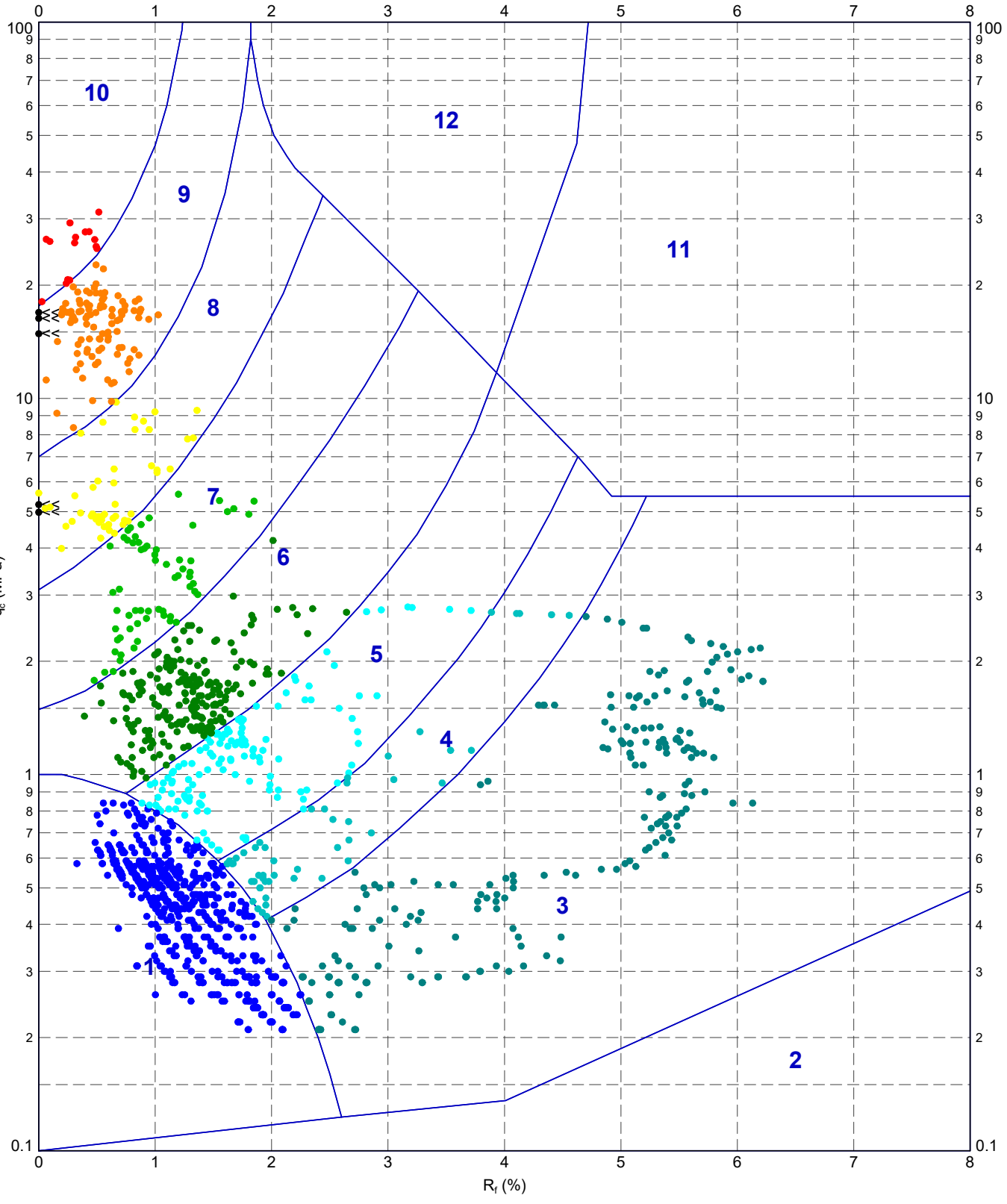
PointID
CPT 07

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	289 mV	293 mV	0.044 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	303 mV	305 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 07	Pore Pressure 2	280 mV	274 mV	-0.002 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2301 mV	2437 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 07

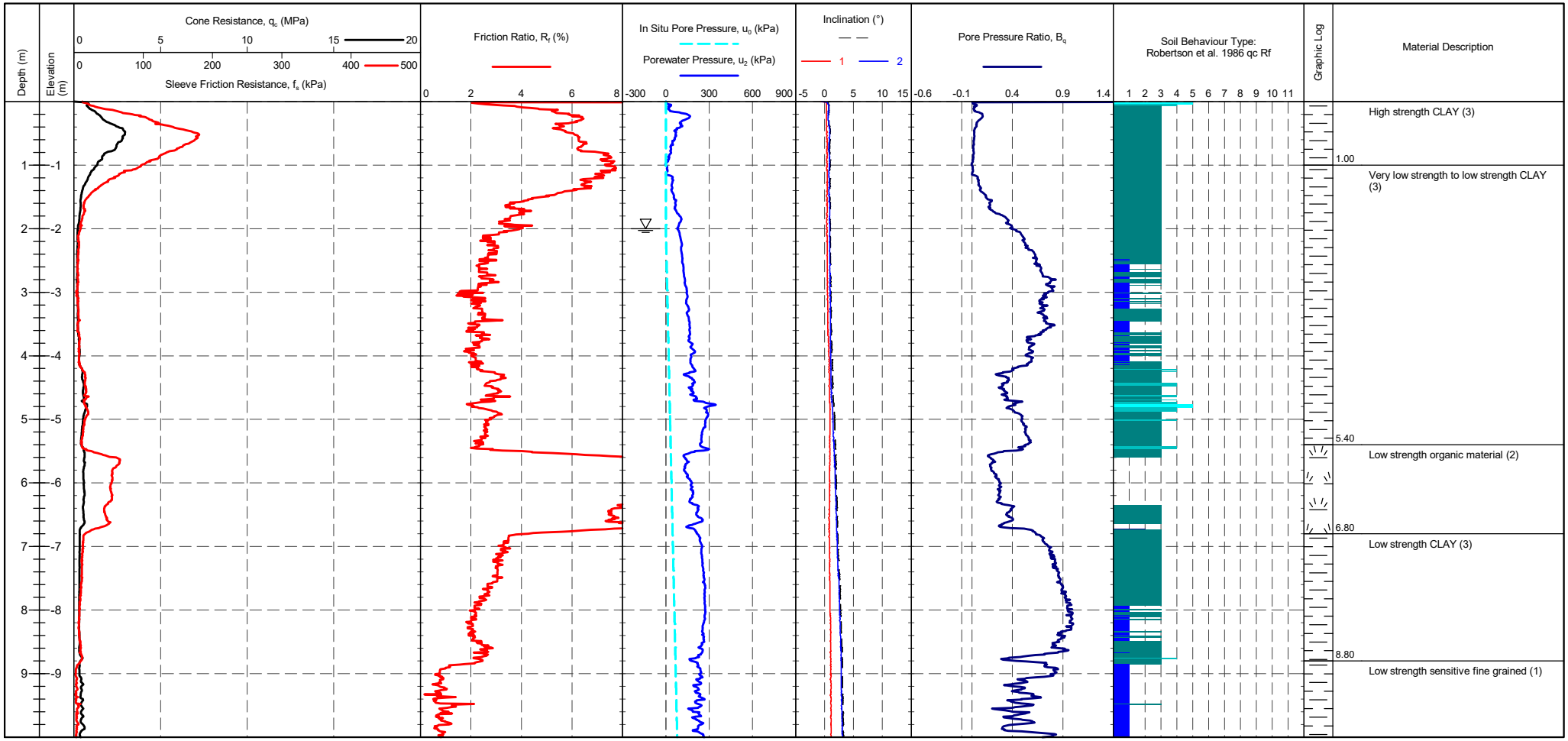
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 08

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID : S15-CFIP.1486	TEST TYPE : TE2	CPTU ZERO VALUES		
CONE AREA : 15cm²	APPLICATION CLASS : 2	Transducer	Pre	Post	Difference
CONE AREA RATIO : 0.79	RIG : CPT 007	Tip	291 mV	297 mV	0.066 MPa
FILTER POSITION : u2	OPERATOR : AC	Sleeve	302 mV	308 mV	0.004 kPa
FILTER TYPE : HDPE	FILE NAME : 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV	0 kPa
FRICTION REDUCER : None	WEATHER : Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravelly SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

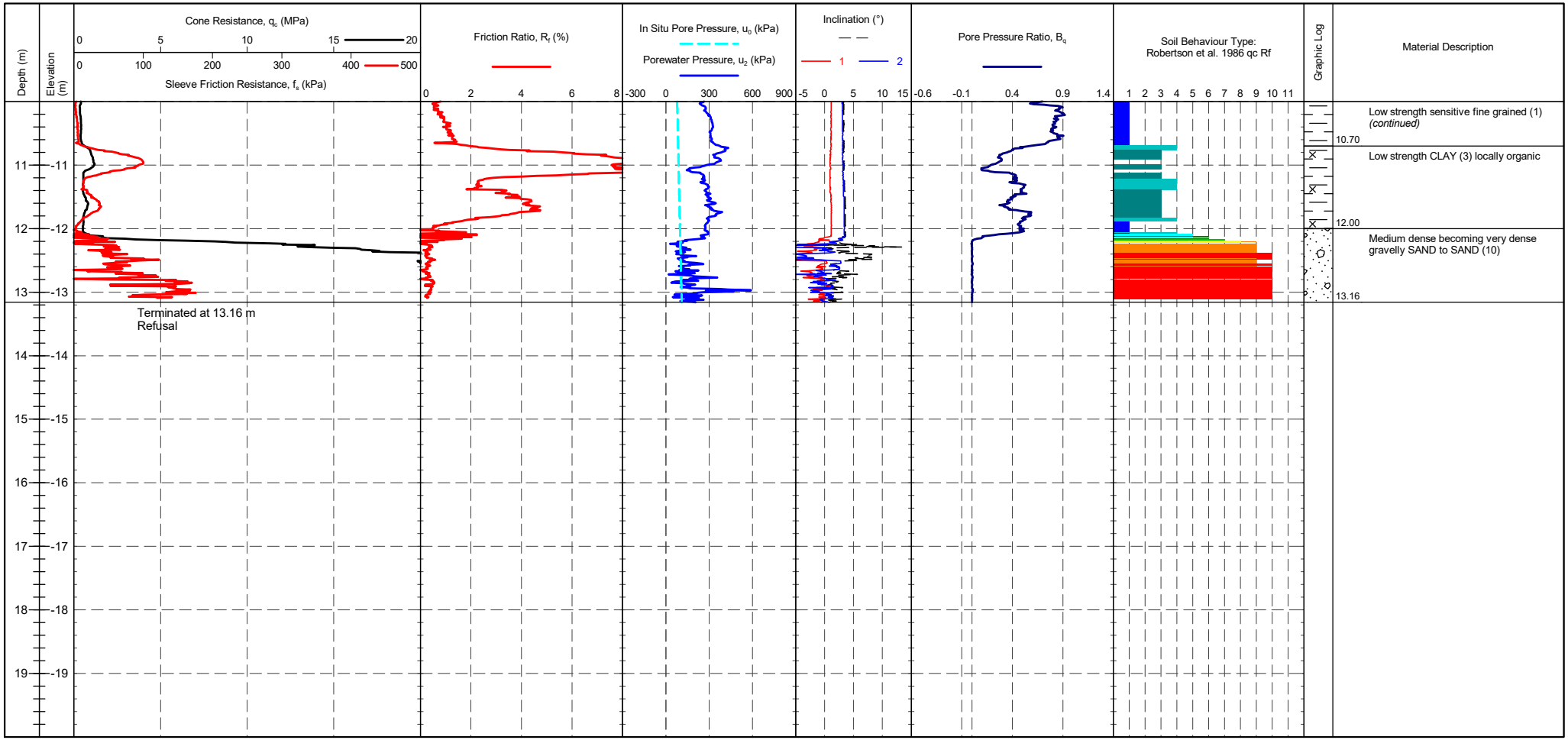
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 08

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	297 mV	0.066 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	308 mV	0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV	0 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

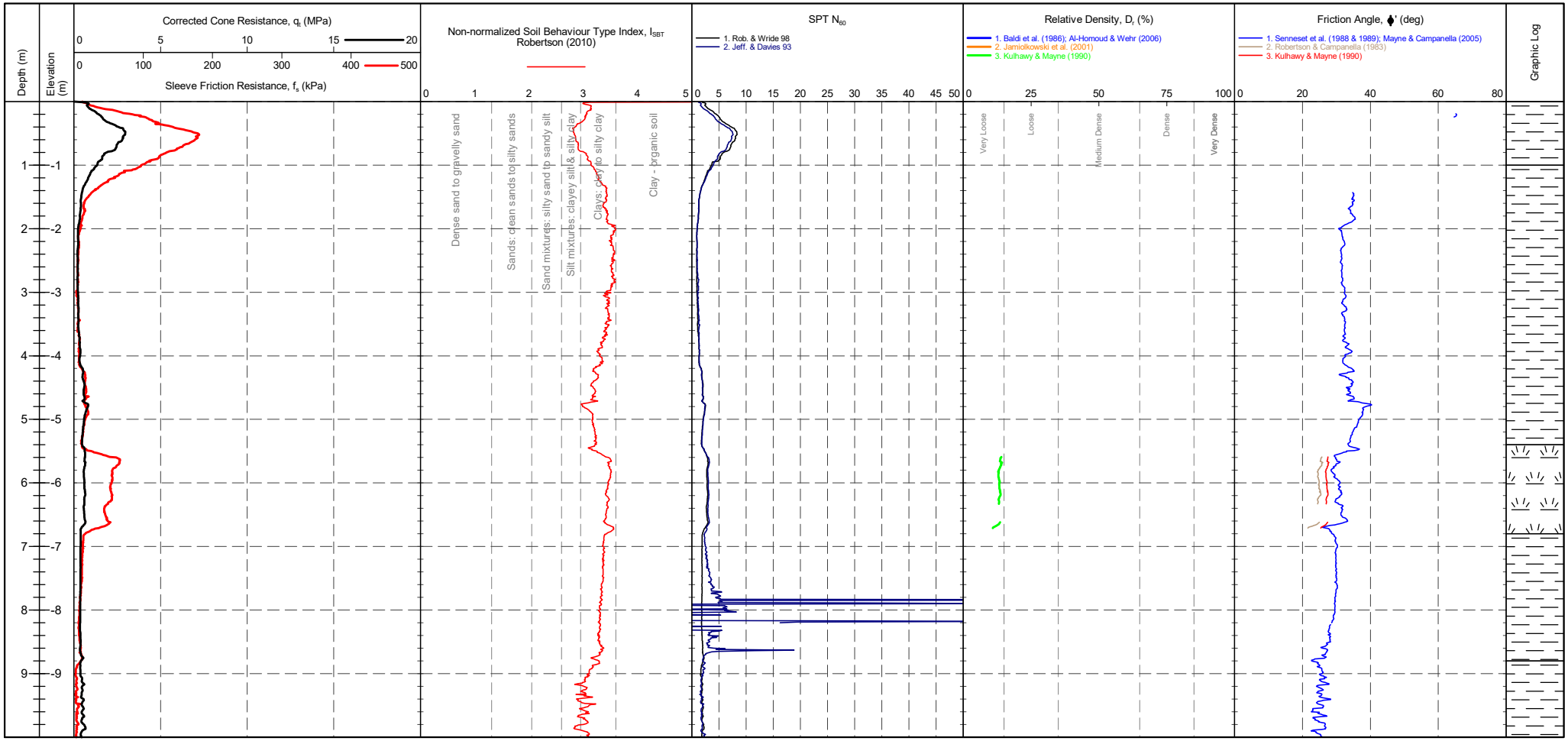
PointID
CPT 08

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	297 mV	0.066 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	308 mV	0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV	0 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

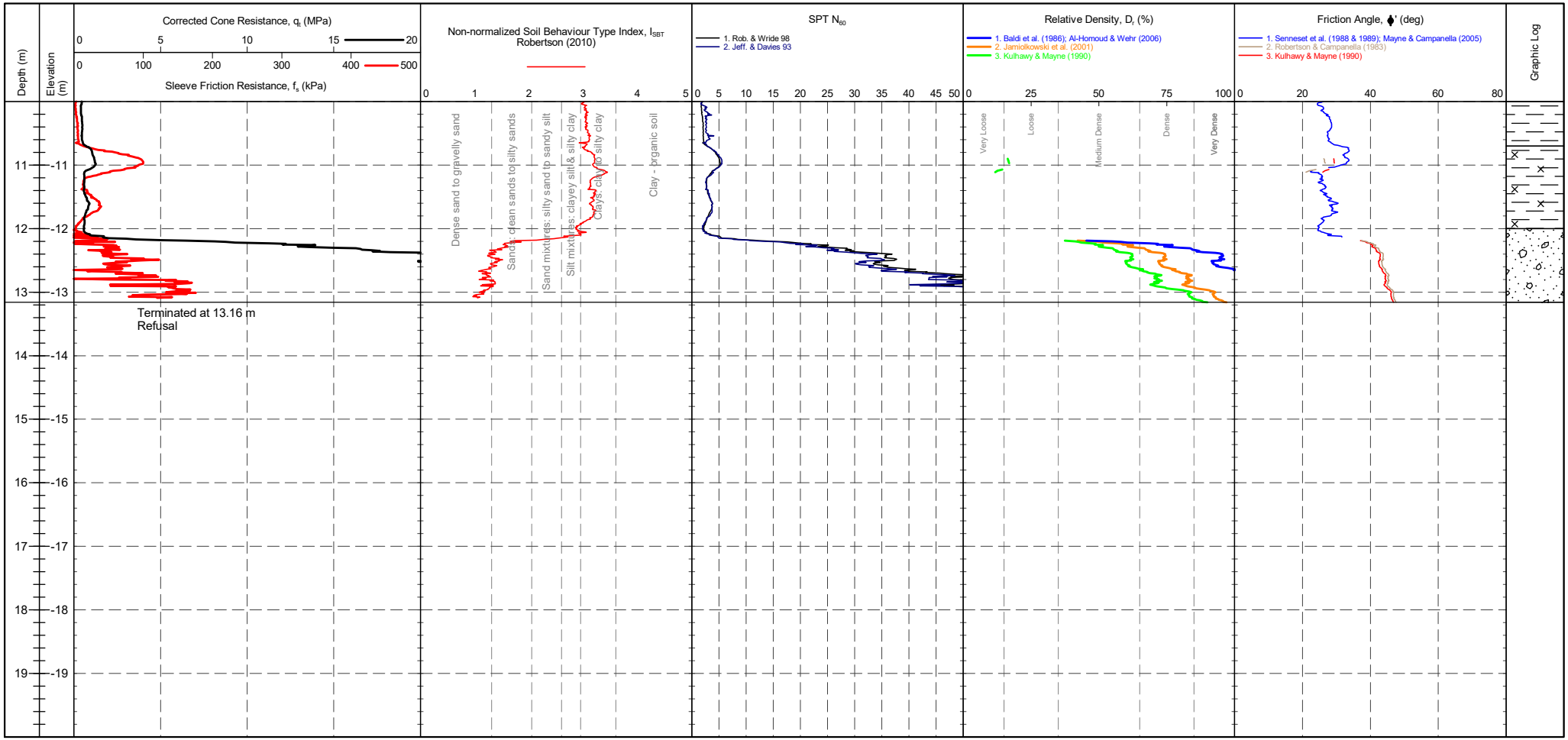
PointID
CPT 08

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	297 mV	0.066 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	308 mV	0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV	0 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV	

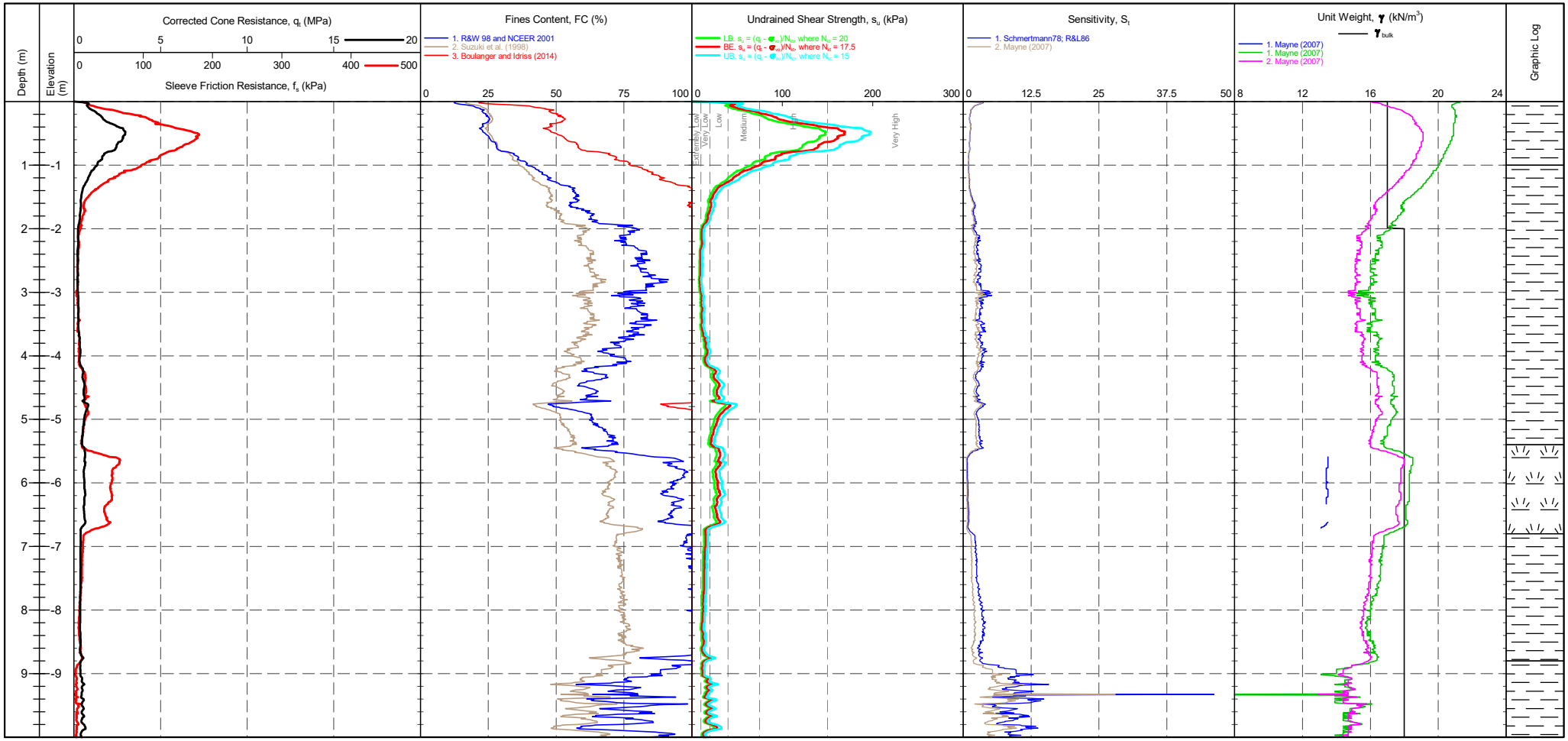
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 08

CLIENT : Terra Consult PROJECT : Tilbury LOCATION : Tilbury PROJECT No. : 1190415	EASTING : NORTHING : ELEVATION : 0.000 m OD CHECKED BY : LD TERMINATION REASON : Refusal	Remark: Test refused on tip resistance.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 18/09/2019 PLOT DATE : 19/09/2019 METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	297 mV	0.066 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	308 mV	0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV	0 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV	

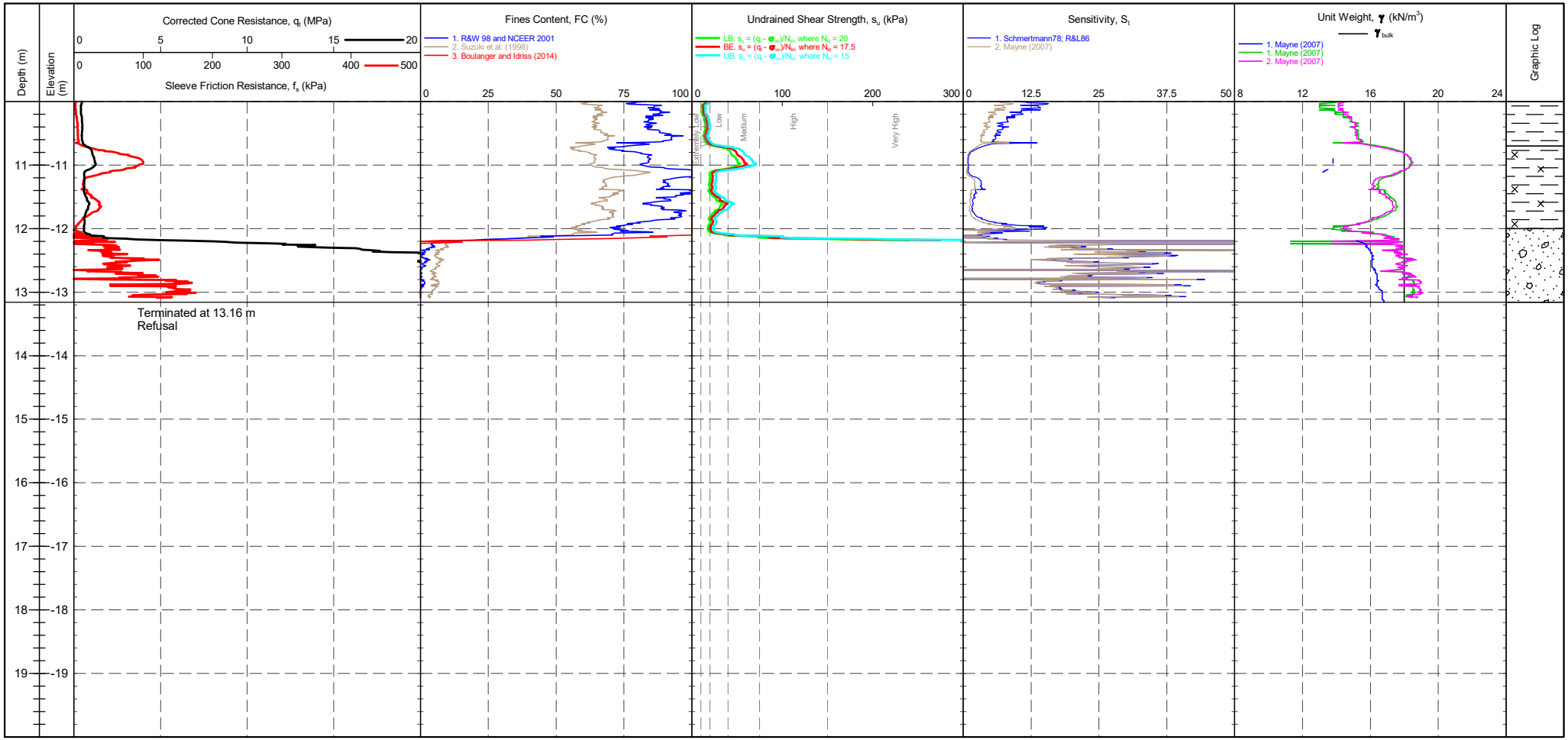
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

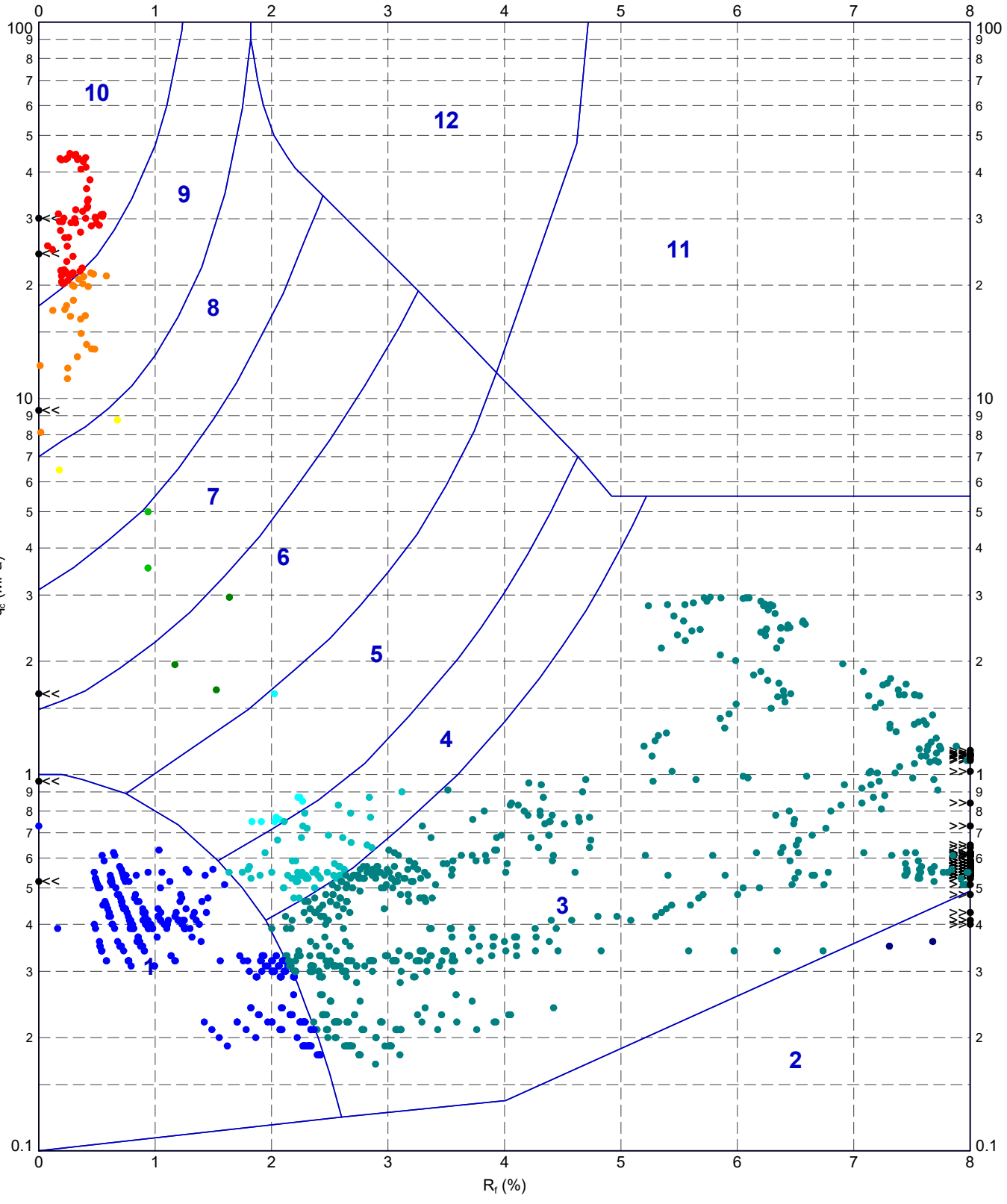
PointID
CPT 08

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	297 mV / 0.066 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	308 mV / 0.004 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 08	Pore Pressure 2	274 mV	274 mV / 0 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2374 mV	2450 mV

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 08

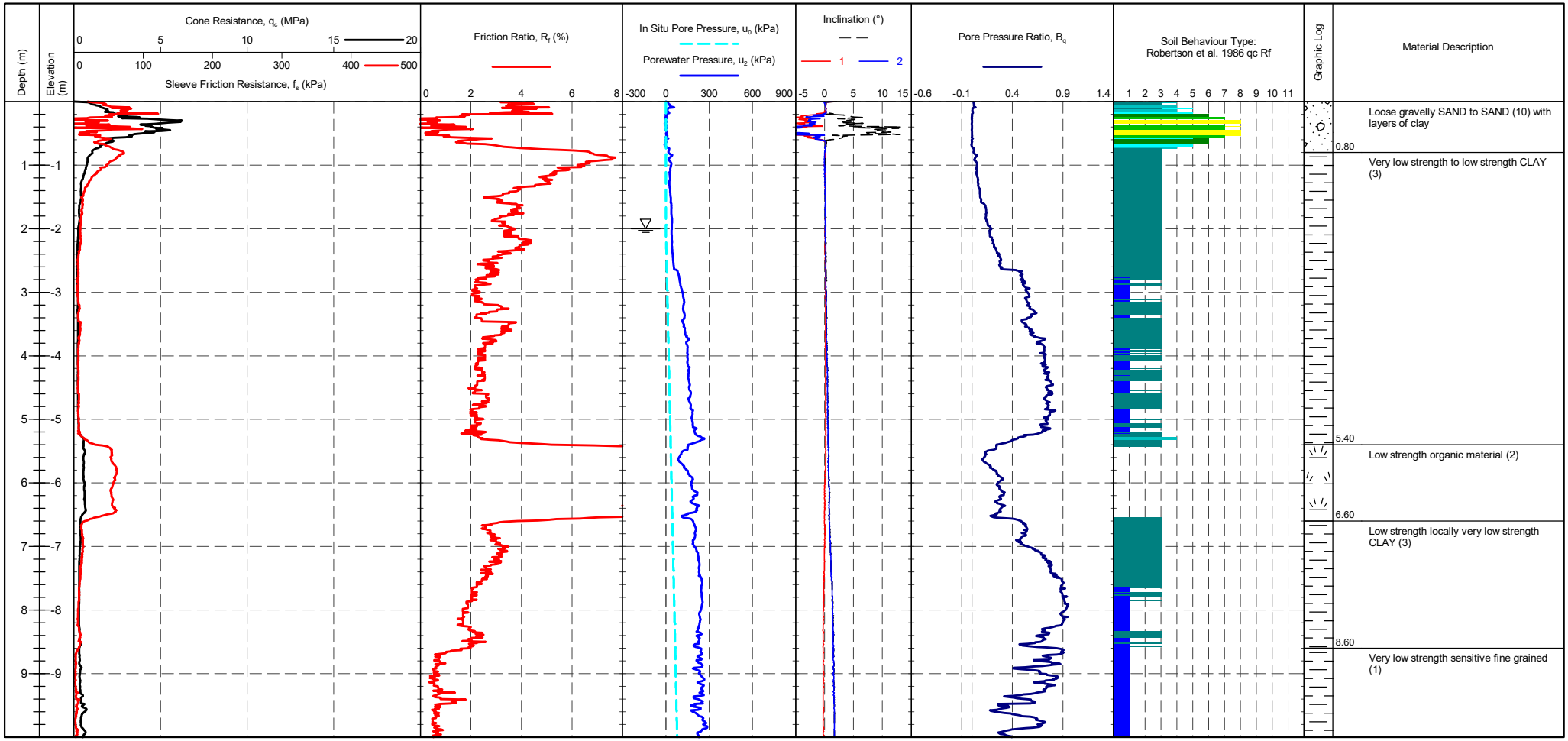
DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 09

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV	0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV	0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV	0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

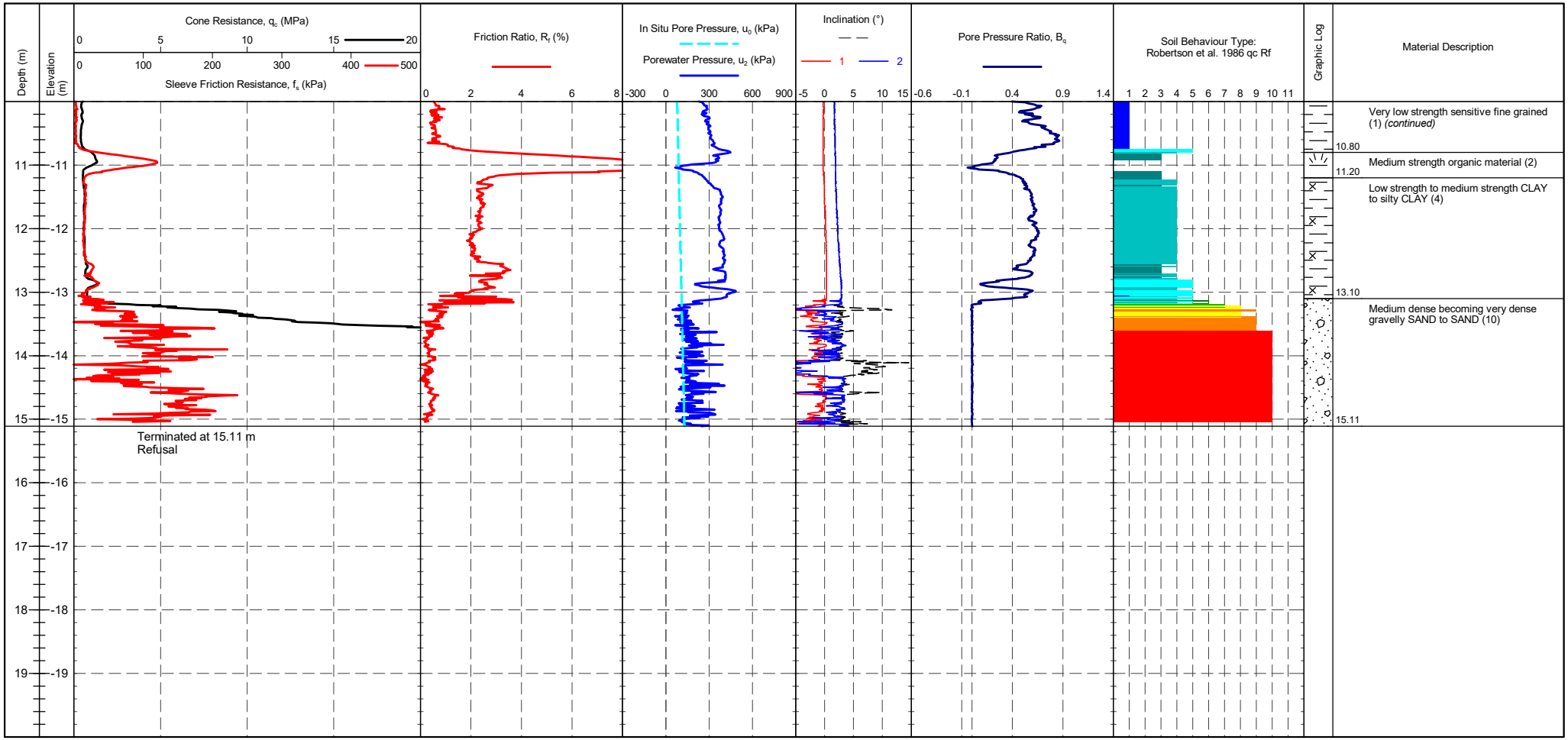
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 09

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV / 0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV / 0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV / 0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

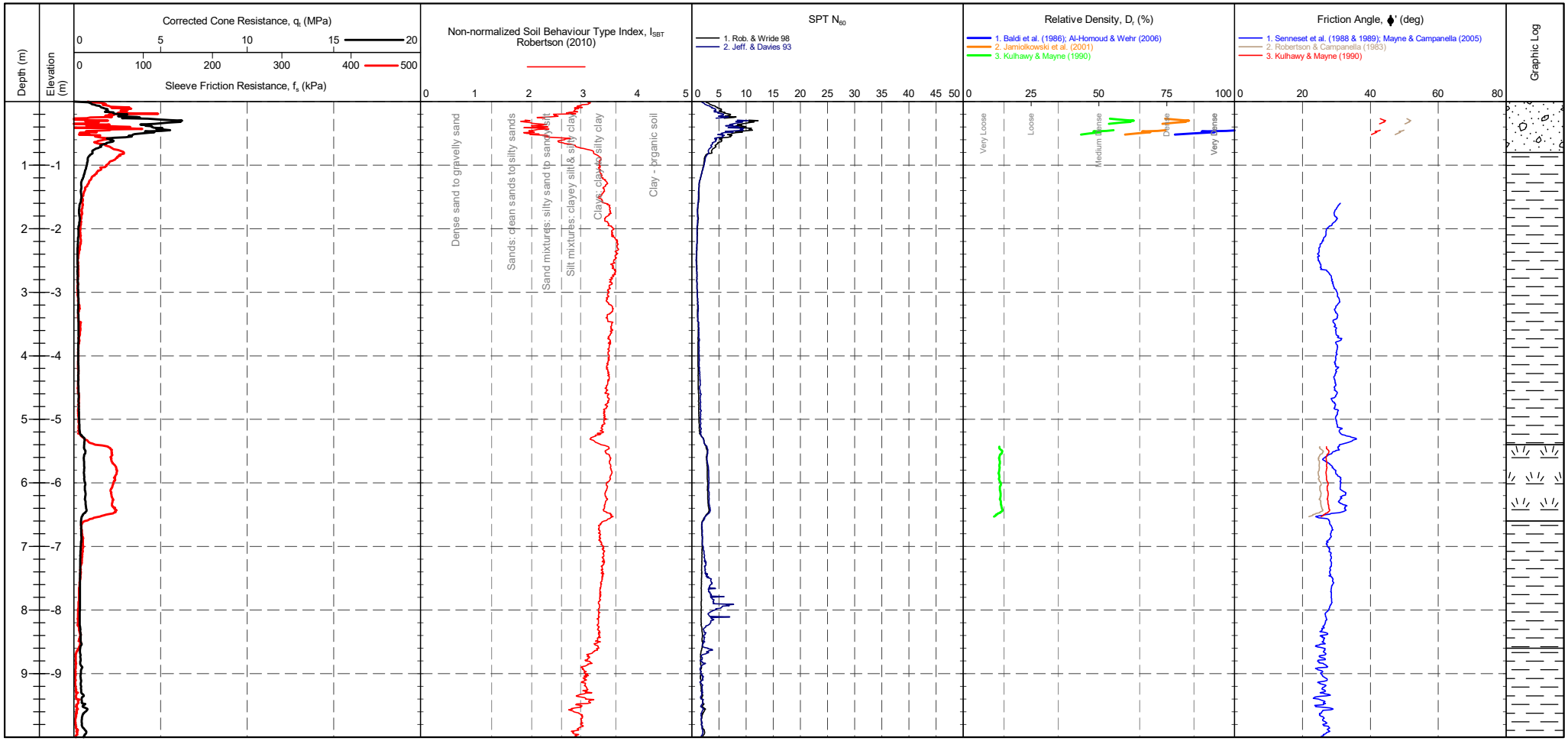
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

PointID
CPT 09

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV	0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV	0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV	0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

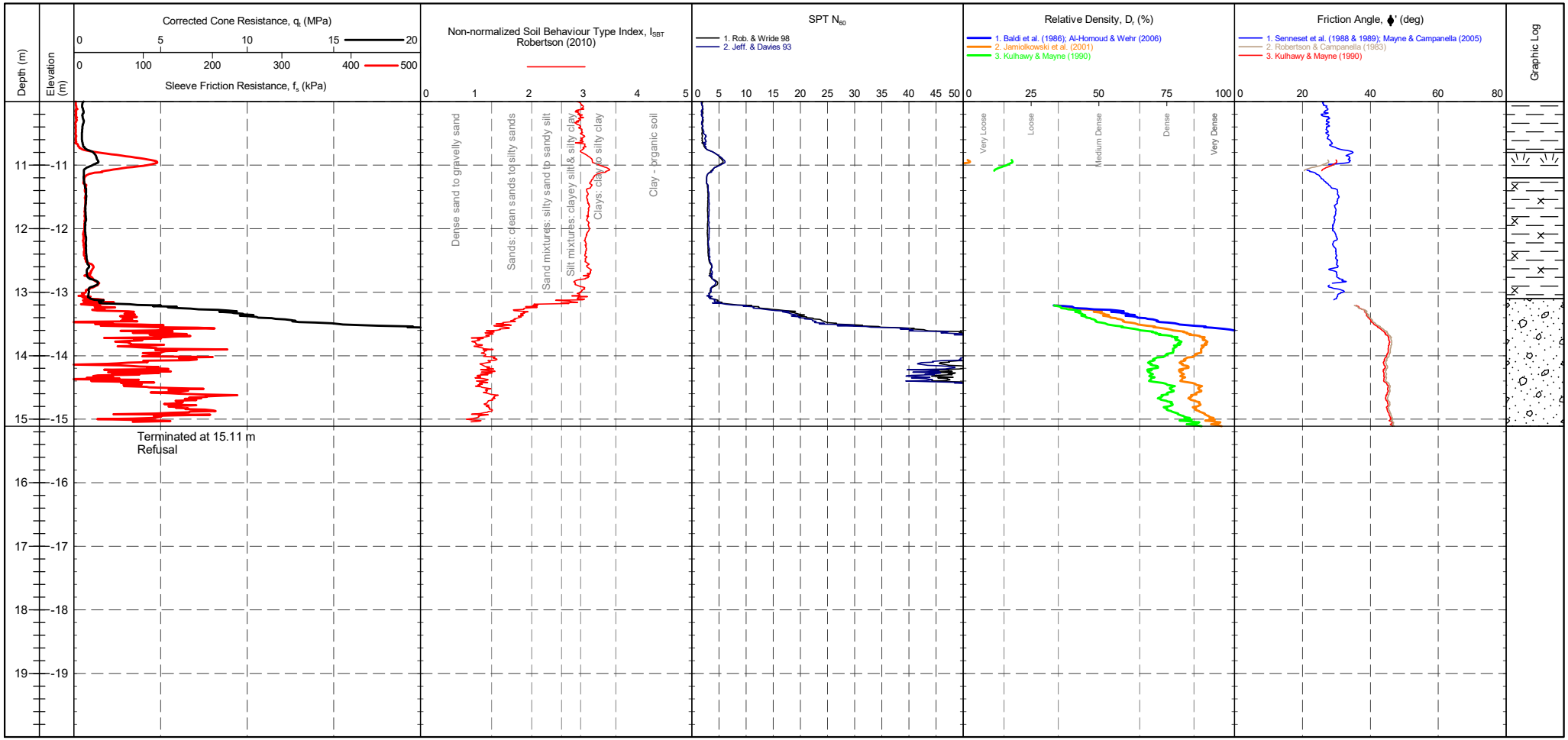
PointID
CPT 09

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV	0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV	0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV	0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV	

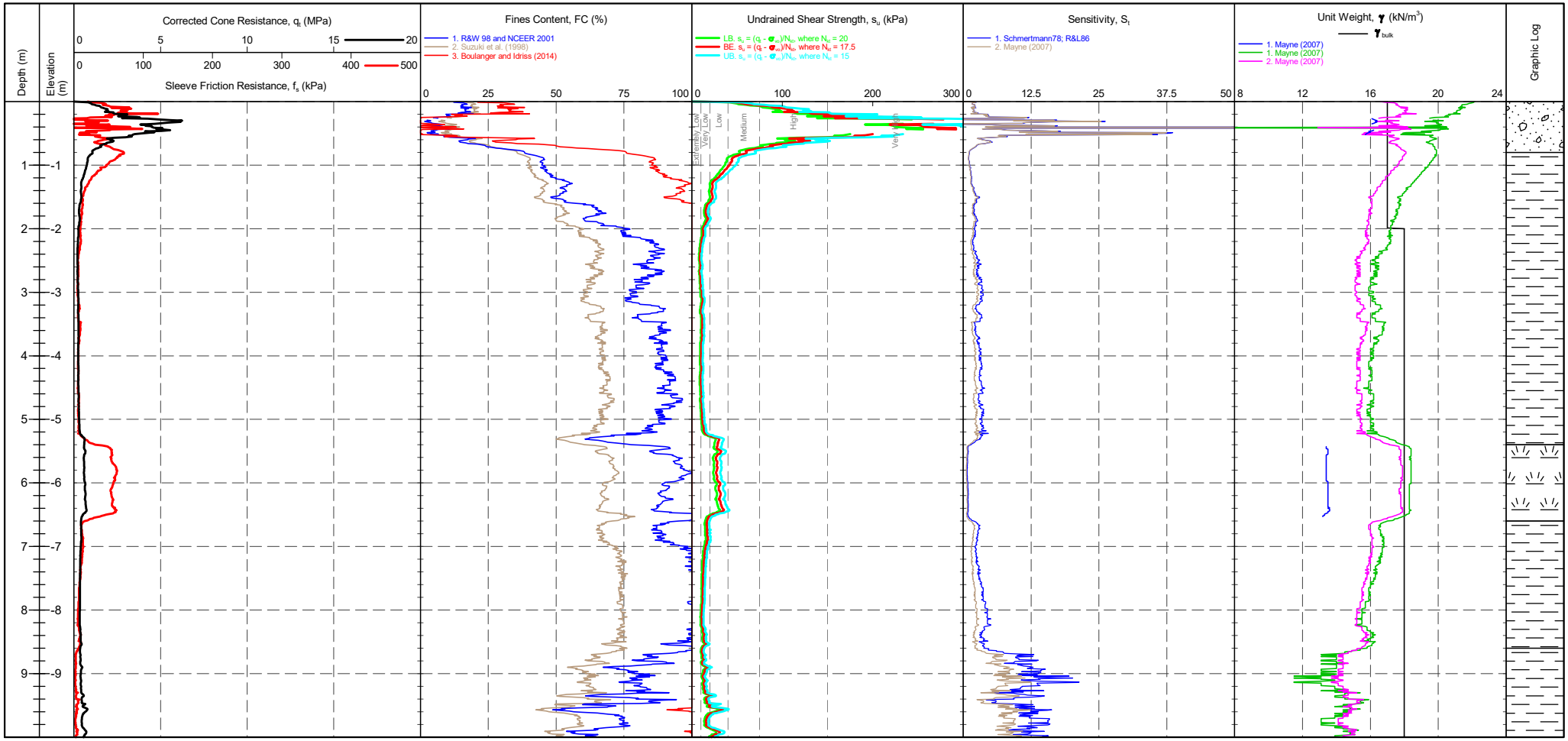
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

PointID
CPT 09

CLIENT : Terra Consult PROJECT : Tilbury LOCATION : Tilbury PROJECT No. : 1190415	EASTING : NORTHING : ELEVATION : 0.000 m OD CHECKED BY : LD TERMINATION REASON : Refusal	Remark: Test refused on tip resistance.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 18/09/2019 PLOT DATE : 19/09/2019 METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV	0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV	0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV	0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

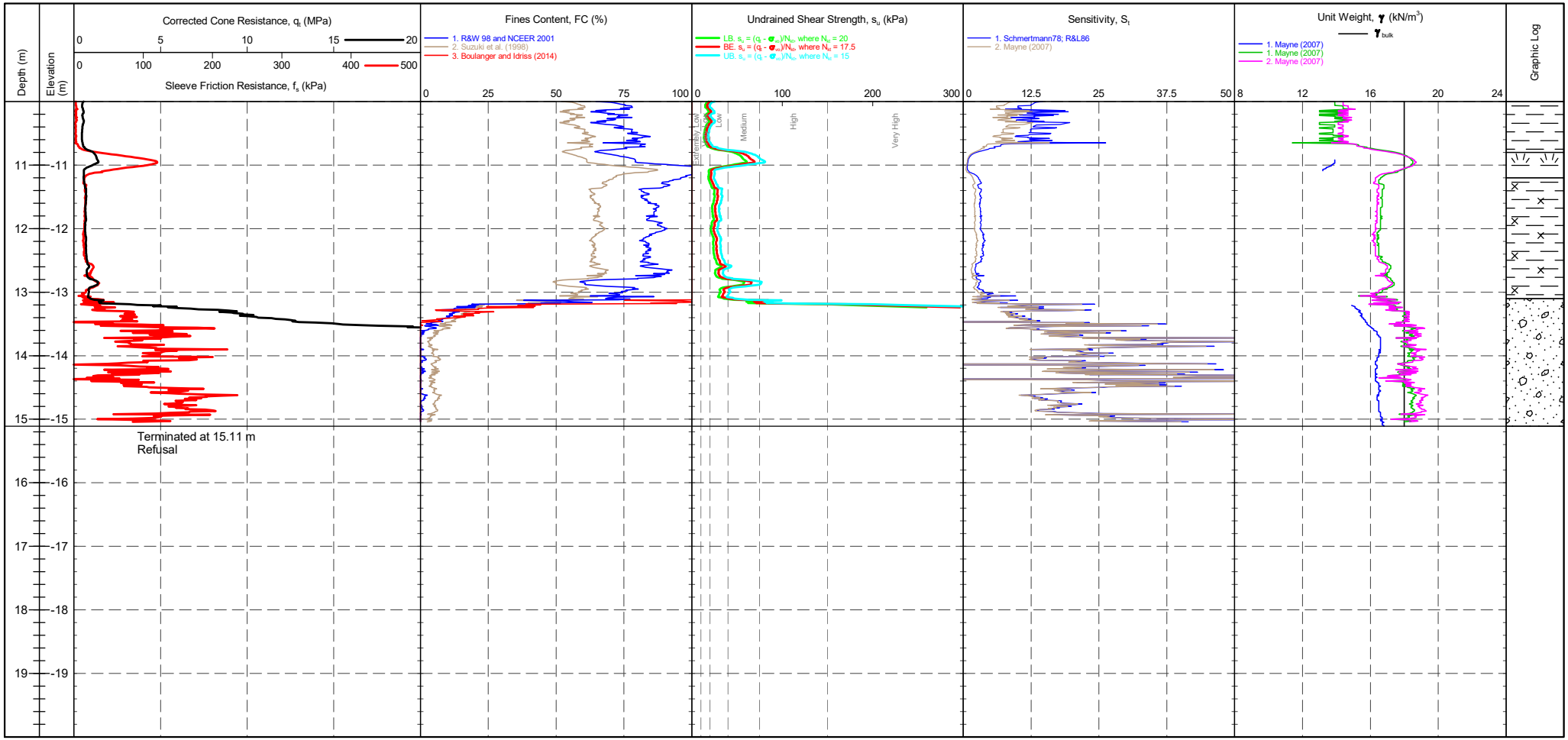
PointID
CPT 09

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

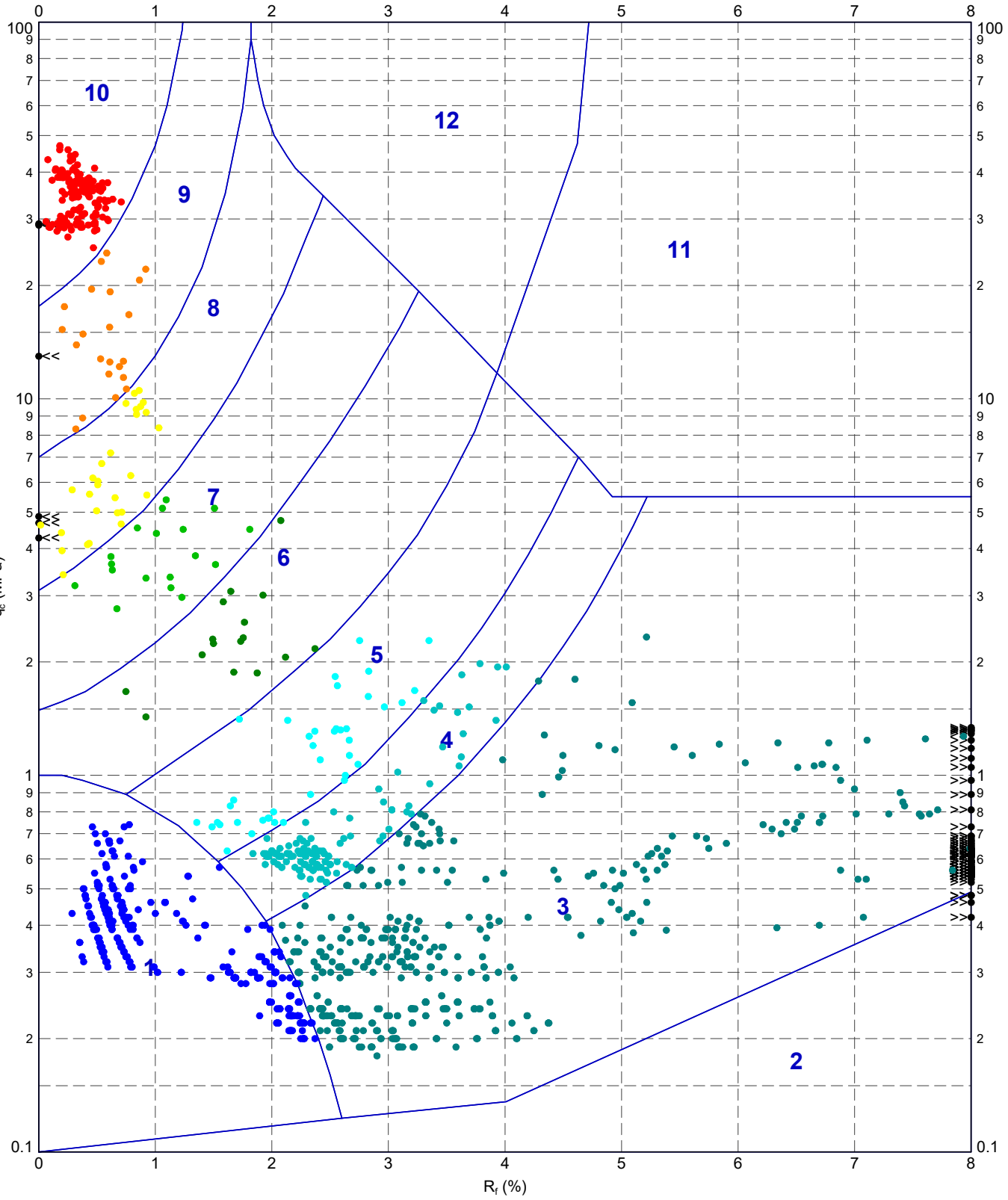
Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	291 mV	293 mV	0.022 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	302 mV	0 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 09	Pore Pressure 2	269 mV	287 mV	0.005 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2604 mV	2460 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 09

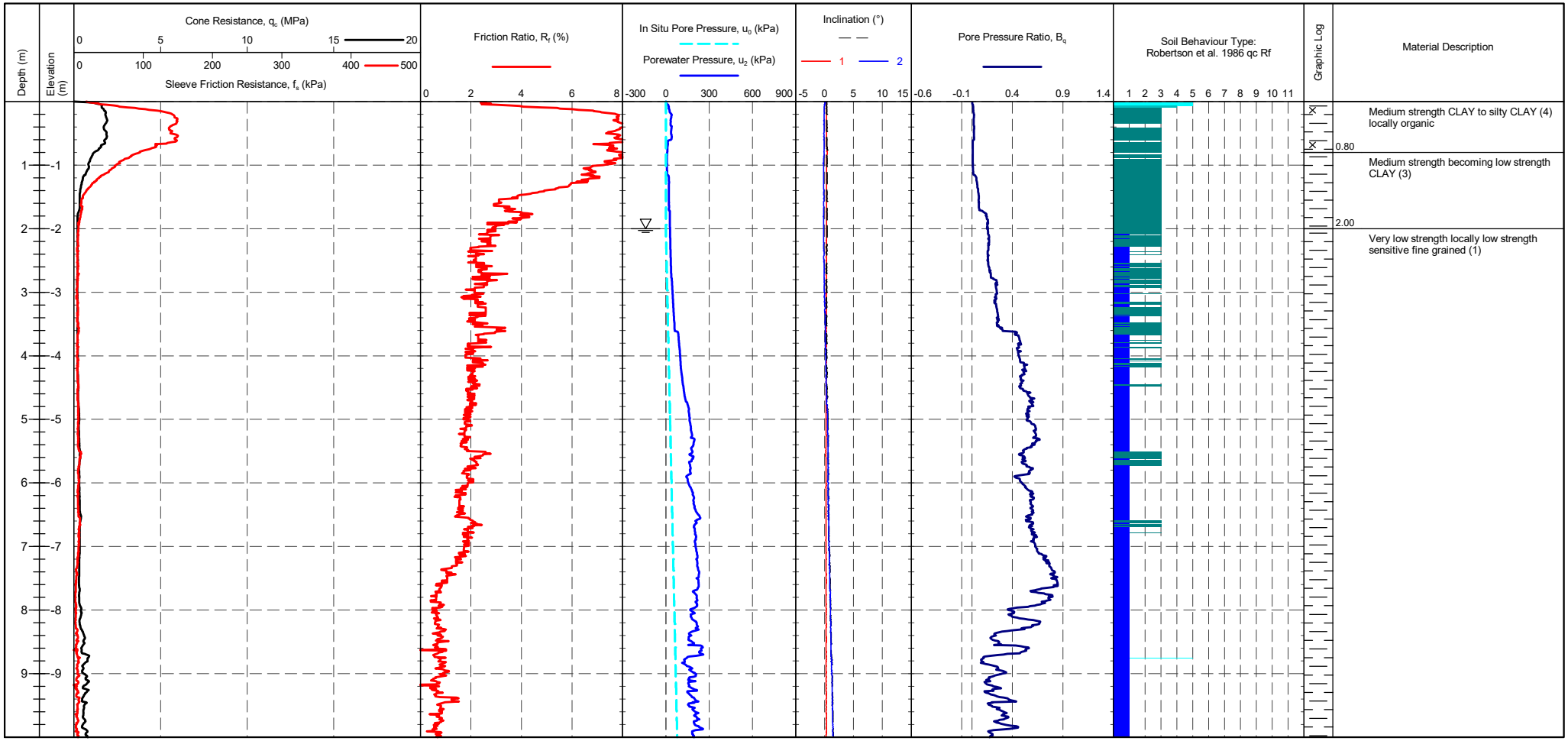
DRAWN	DATE 19/09/2019	
CHECKED	DATE 19/09/2019	
SCALE Not To Scale		A4
PROJECT No 1190415	FIGURE No	

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 10

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 1 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV / 0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV / 0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV / -0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

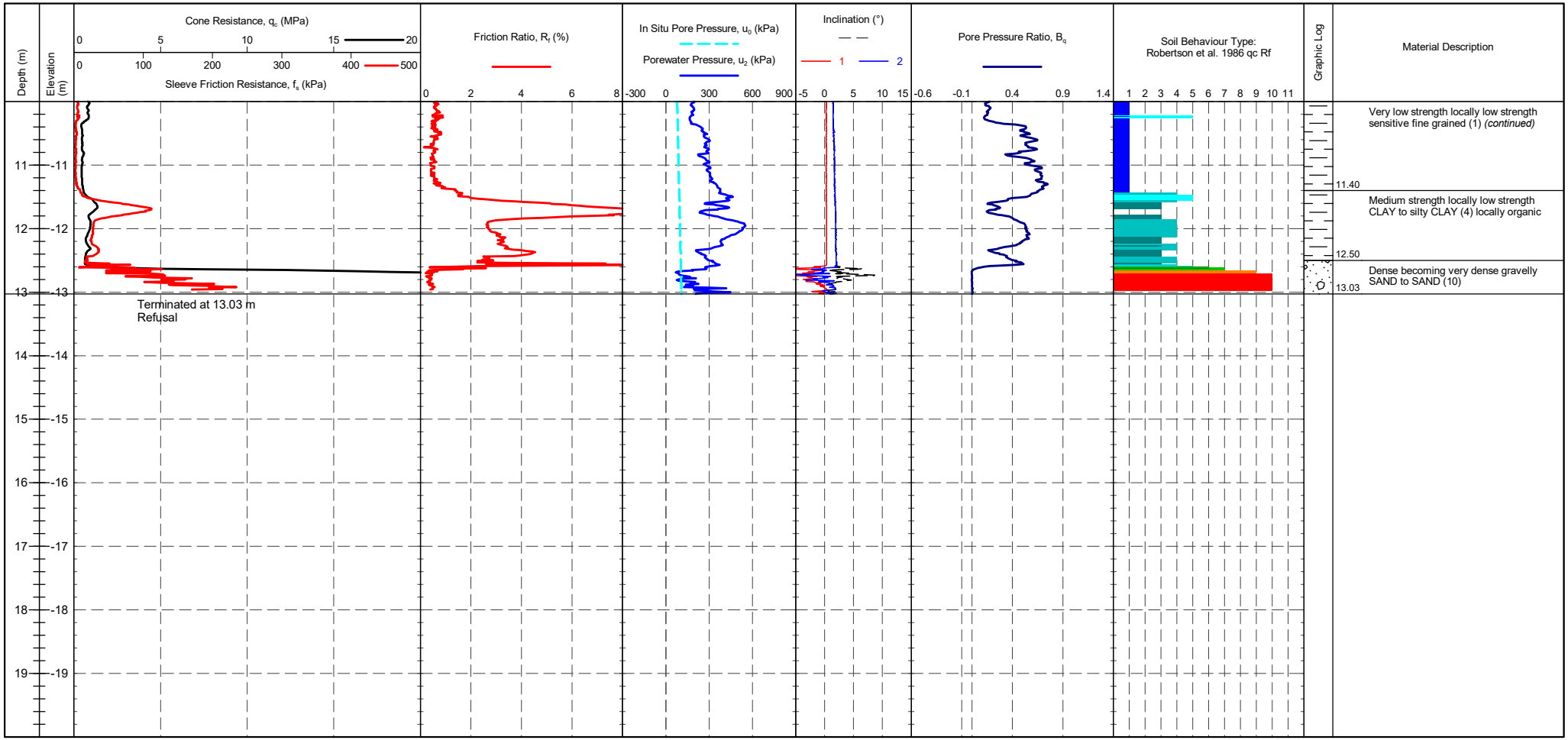
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 01

PointID
CPT 10

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV	-0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	5 - Clayey SILT to silty CLAY	9 - SAND
2 - Organic material	6 - Sandy SILT to clayey SILT	10 - Gravelly SAND to SAND
3 - CLAY	7 - Silty SAND to sandy SILT	11 - Very stiff fine grained
4 - Silty CLAY to CLAY	8 - SAND to silty SAND	12 - SAND to clayey SAND

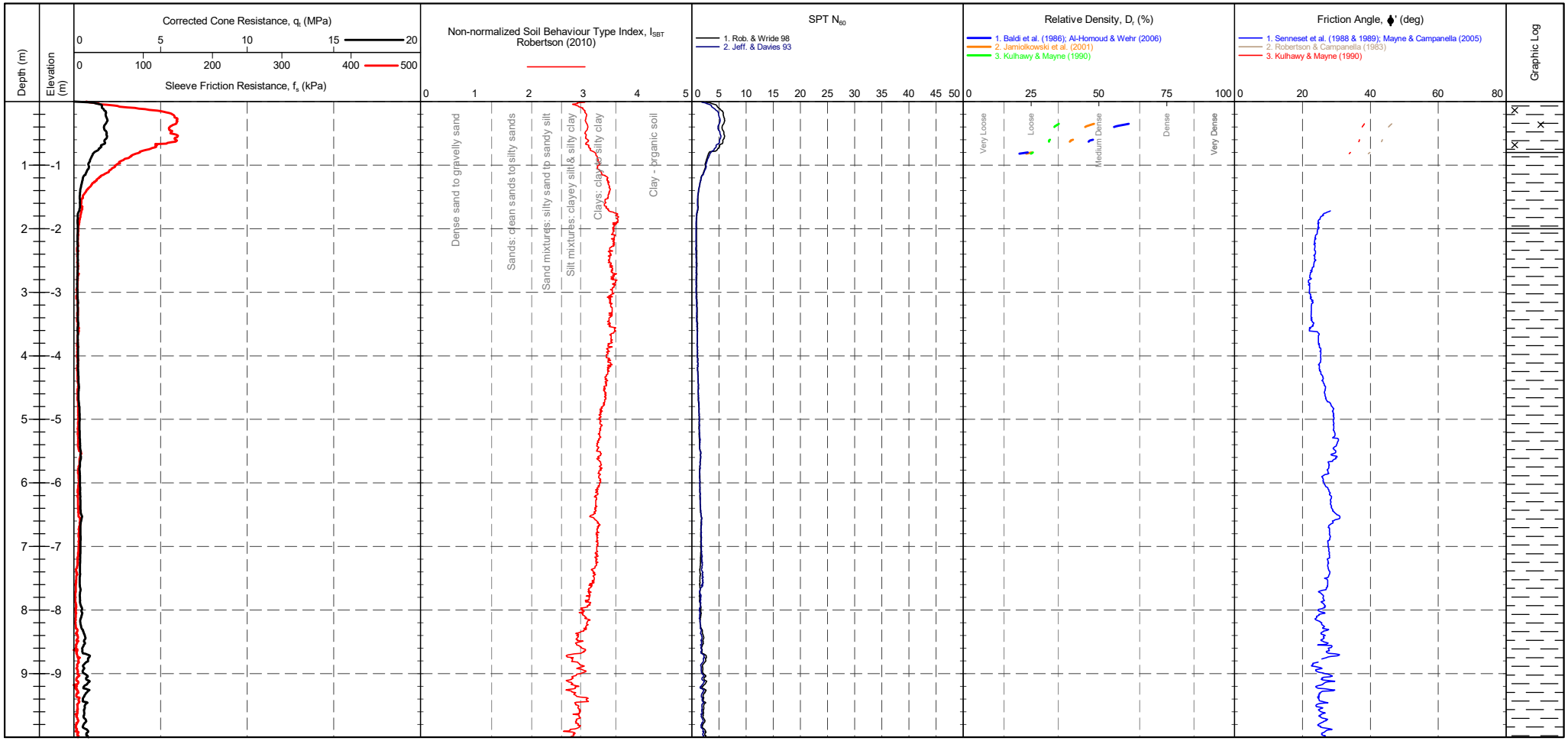
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

PointID
CPT 10

CLIENT : Terra Consult PROJECT : Tilbury LOCATION : Tilbury PROJECT No. : 1190415	EASTING : NORTHING : ELEVATION : 0.000 m OD CHECKED BY : LD TERMINATION REASON : Refusal	Remark: Test refused on tip resistance.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 18/09/2019 PLOT DATE : 19/09/2019 METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV	-0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 02

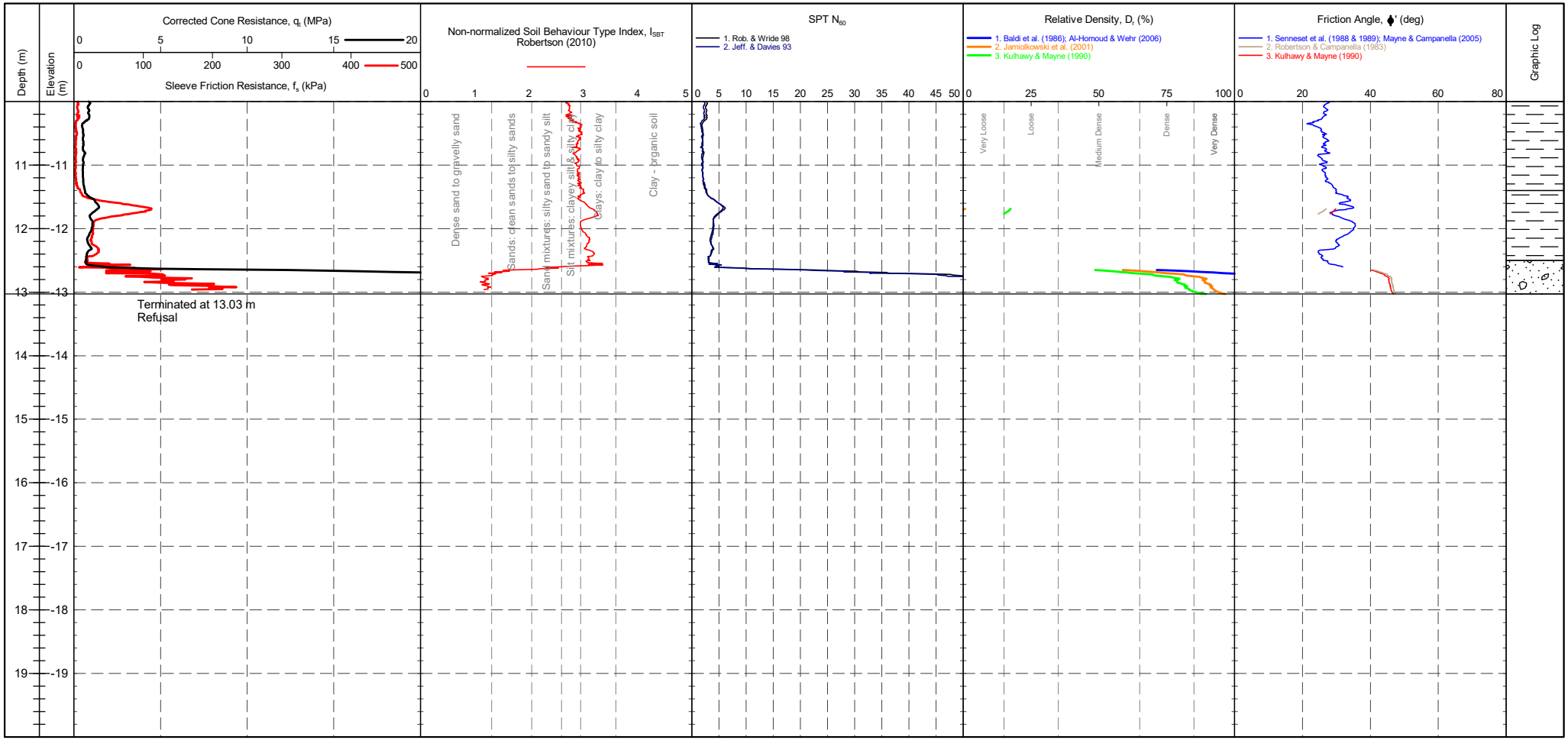
PointID
CPT 10

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm²	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV	-0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV	

Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

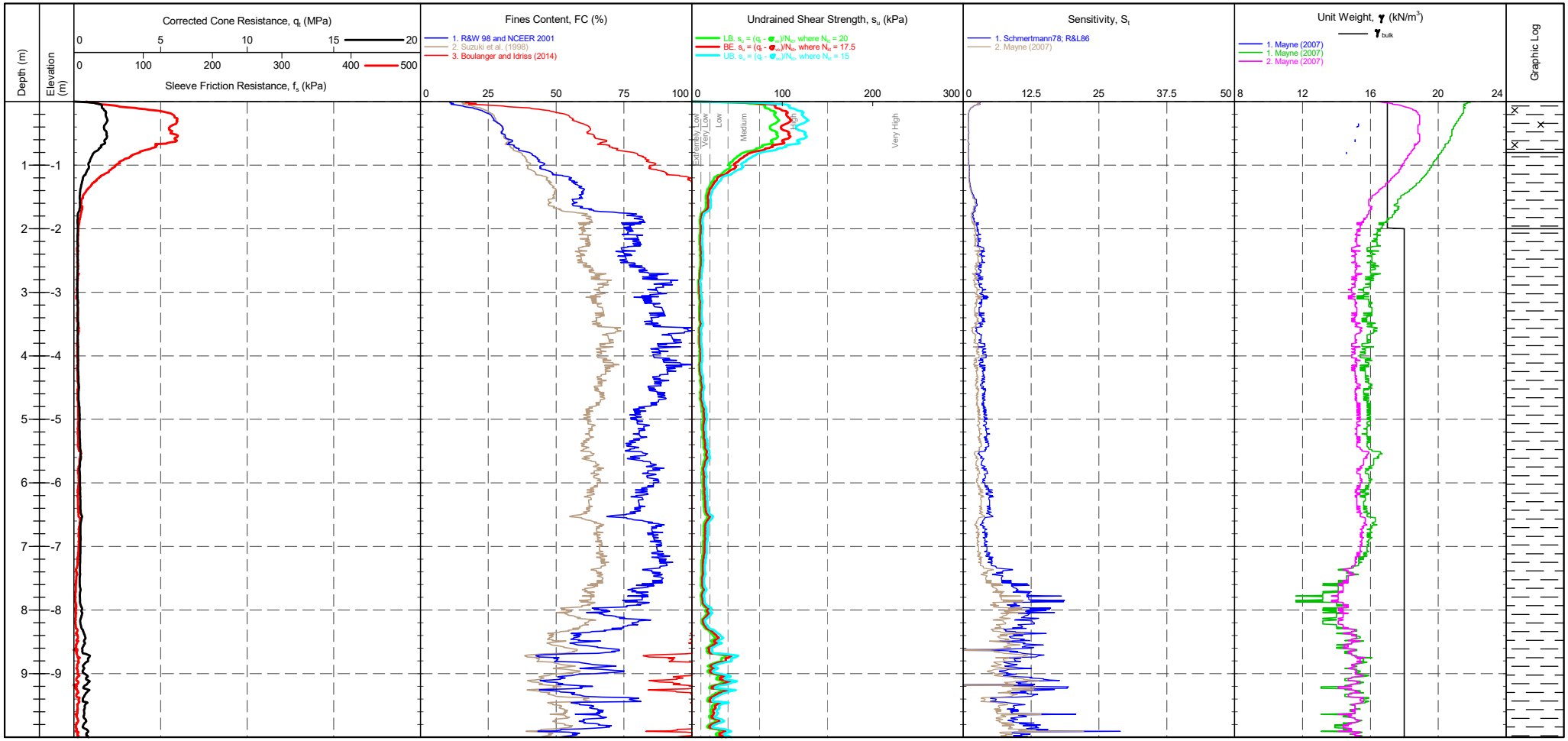
PointID
CPT 10

CLIENT : Terra Consult
PROJECT : Tilbury
LOCATION : Tilbury
PROJECT No. : 1190415

EASTING :
NORTHING :
ELEVATION : 0.000 m OD
CHECKED BY : LD
TERMINATION REASON : Refusal

Remark:
Test refused on tip resistance.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 18/09/2019
PLOT DATE : 19/09/2019
METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV	-0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV	

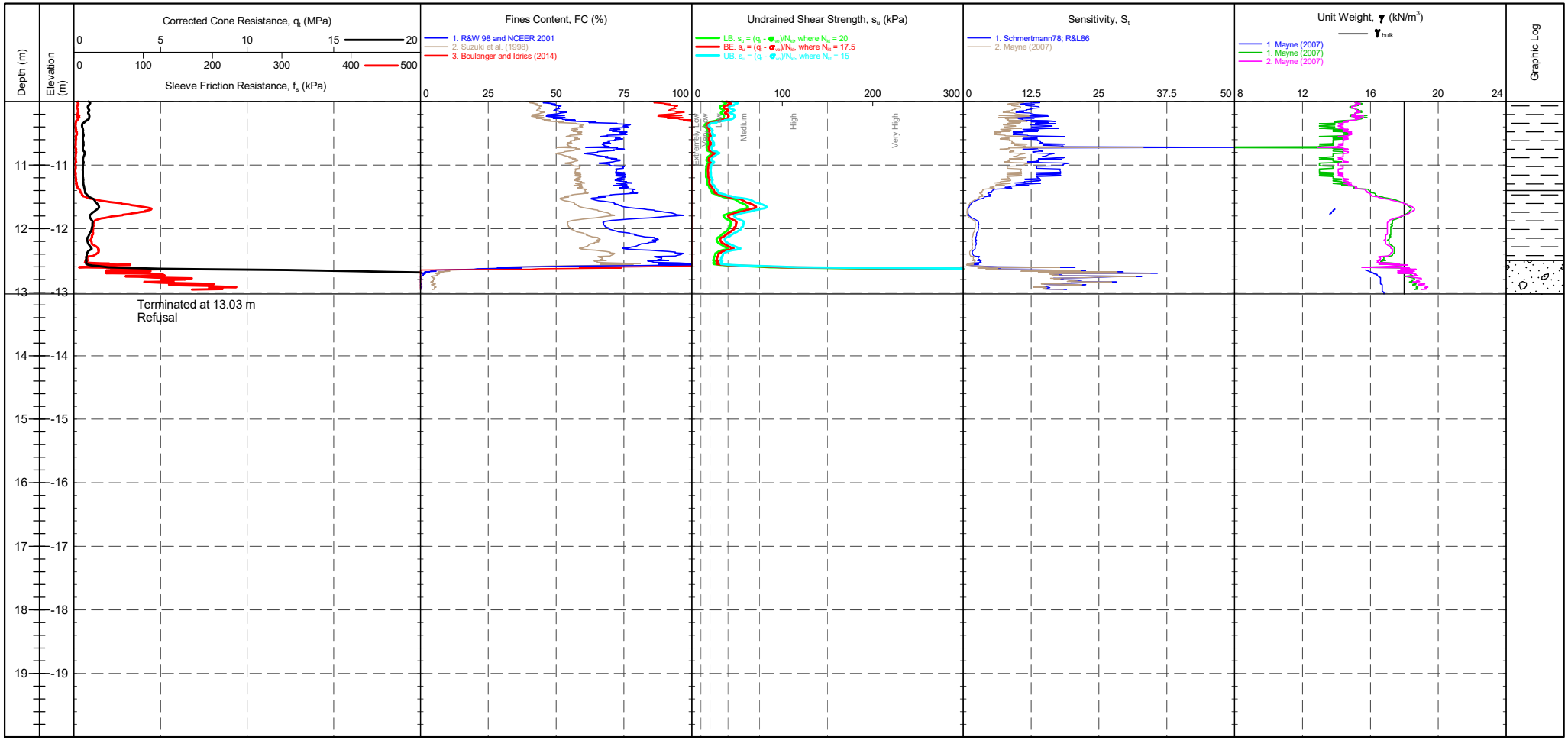
Groundwater Level
Dissipation Test

IN SITU
SITE INVESTIGATION Working with:

CPT LOG 03

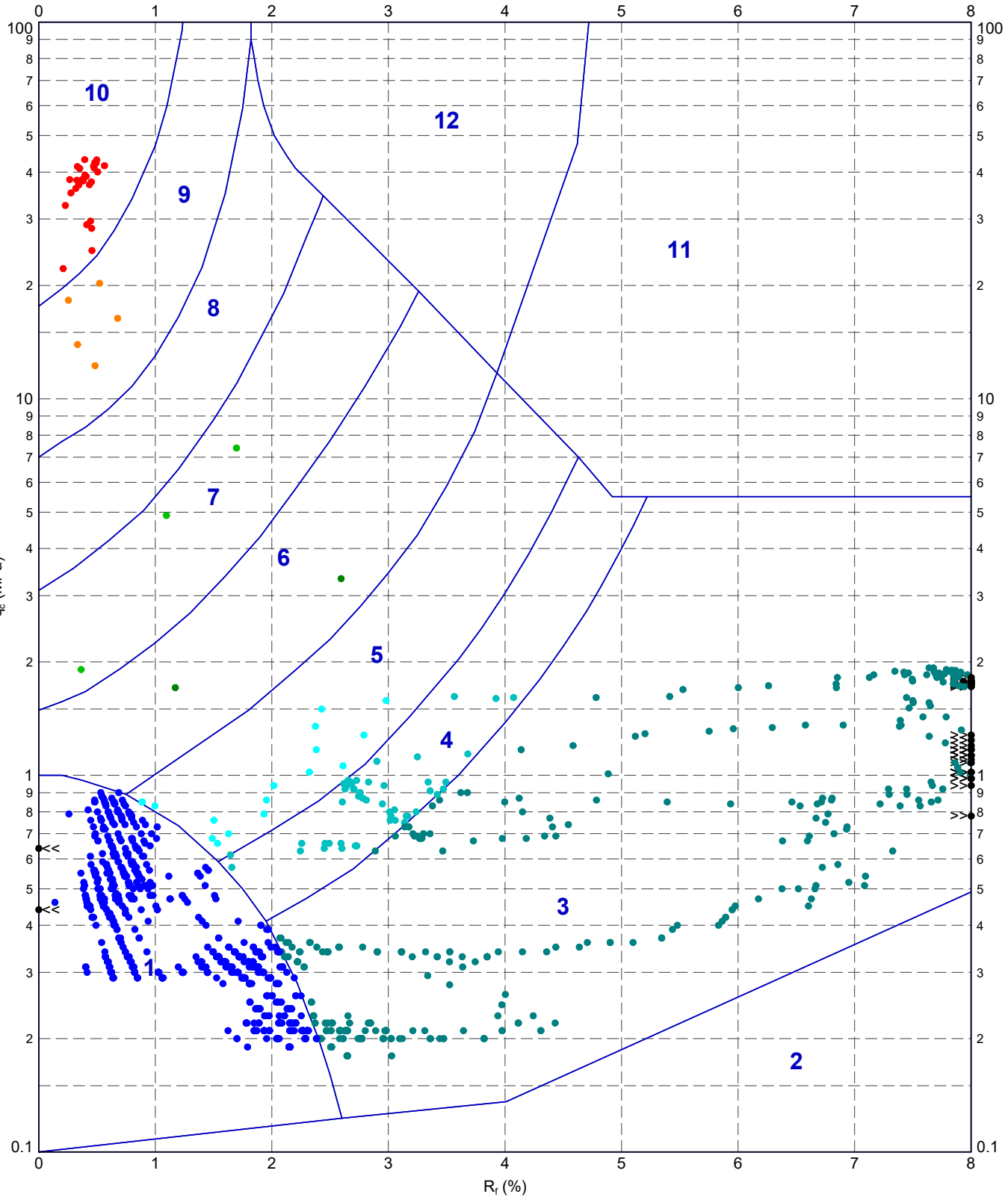
PointID
CPT 10

CLIENT : Terra Consult	EASTING :	Remark:	SHEET : 2 OF 2
PROJECT : Tilbury	NORTHING :	Test refused on tip resistance.	STATUS : Final
LOCATION : Tilbury	ELEVATION : 0.000 m OD		TEST DATE : 18/09/2019
PROJECT No. : 1190415	CHECKED BY : LD		PLOT DATE : 19/09/2019
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2012



CONE ID	: S15-CFIP.1486	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE AREA	: 15cm^2	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA RATIO	: 0.79	RIG	: CPT 007	Tip	293 mV	293 mV	0 MPa
FILTER POSITION	: u2	OPERATOR	: AC	Sleeve	302 mV	304 mV	0.001 kPa
FILTER TYPE	: HDPE	FILE NAME	: 1190415-CPT 10	Pore Pressure 2	283 mV	280 mV	-0.001 kPa
FRICTION REDUCER	: None	WEATHER	: Sunny & Mild	X-Y Inclinometer	2479 mV	2479 mV	

Groundwater Level
Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU
SITE INVESTIGATION

TITLE

Terra Consult
Tilbury
Tilbury
Robertson et al. 1986 q_c vs. R_f - CPT 10

DRAWN	DATE 19/09/2019
CHECKED	DATE 19/09/2019
SCALE Not To Scale	A4
PROJECT No 1190415	FIGURE No

Gas & Groundwater Monitoring Record

TerraConsult

Project No:	4593	Project:	Statera - Tilbury
Date:	25/09/2019		
Operator:	TM		
Equipment used:	Dipmeter & GFM435 s/n 11378		

State of Ground:	Dry
Wind :	Light breeze
Wind direction:	
Cloud cover:	Light clouds
Precipitation:	None
Pressure trend:	Steady

Detection limits:	0.1% vol	0.1%	0.1% vol	0.1% vol	0.1 ppm	1.0 ppm	NA	

Borehole ID	Inst ID	Barometric Pressure (mbars)	Air temp (oC)	Depth of Installation (m BGL)	Time of Reading hh:mm	Depth to Groundwater (m BGL)	Differential Pressure (Pa)	FlowRate (l/hr)	CH4 (% vol)	CH4 (% LEL)	O2 (% vol)	CO2 (% vol)	CO (ppm)	H2S (ppm)	Nitrogen (% vol)	Remarks
WS1	1	1000	18	4.84	11:44	2.40	0	0.0	0.0	0.0	18.8	1.9	0.0	0	NM	
WS2	1	1000	18	4.48	11:35	1.62	0	0.0	0.0	0.0	18.1	2.7	0.0	0	NM	
WS4	1	1001	18	4.12	11:13	2.49	0	0.0	0.0	0.0	20.2	0.3	0.0	0	NM	
WS6	1	1001	18	4.50	12:36	2.67	0	0.0	0.0	0.0	19.8	0.9	0.0	0	NM	
WS7	1	1000	18	4.20	12:29	2.19	0	0.0	0.0	0.0	19.8	1.0	0.0	0	NM	
WS8	1	1000	18	4.07	13:06	2.07	0	0.0	0.0	0.0	19.6	0.8	0.0	0	NM	
Piezometer boreholes																
CP1	1	NA	18	25.02	NM	1.12	NM	NM	NM							
CP2	1		18	23.88		1.19										
CP3	1		18	23.95		0.94										
CP4	1		18	23.15		1.29										
CP5	1		18	23.92		0.77										
CP6	1		18	23.70		0.99										
CP7	1		18	23.74		0.86										

Gas & Groundwater Monitoring Record

TerraConsult

Project No:	4593	Project:	Statera - Tilbury
Date:	04/10/2019		
Operator:	TM		
Equipment used:	Dipmeter & GFM435 s/n 11378		

State of Ground:	Dry
Wind :	Light breeze
Wind direction:	
Cloud cover:	100%
Precipitation:	Light showers
Pressure trend:	Steady

Detection limits:	0.1% vol	0.1%	0.1% vol	0.1% vol	0.1 ppm	1.0 ppm	NA	

Borehole ID	Inst ID	Barometric Pressure (mbars)	Air temp (oC)	Depth of Installation (m BGL)	Time of Reading hh:mm	Depth to Groundwater (m BGL)	Differential Pressure (Pa)	FlowRate (l/hr)	CH4 (% vol)	CH4 (% LEL)	O2 (% vol)	CO2 (% vol)	CO (ppm)	H2S (ppm)	Nitrogen (% vol)	Remarks
WS1	1	1004	16	4.85	11:33	2.56	0	0.0	0.0	0.0	18.4	2.0	0.0	0	NM	
WS2	1	1004	16	4.45	11:25	1.69	0	0.0	0.0	0.0	18.0	2.2	0.0	0	NM	
WS4	1	1004	16	4.10	11:05	2.55	0	0.0	0.0	0.0	17.2	2.2	0.0	0	NM	
WS6	1	1004	16	4.50	12:00	2.16	0	0.0	0.0	0.0	19.5	0.7	0.0	0	NM	
WS7	1	1004	16	4.20	11:54	2.23	0	0.0	0.0	0.0	19.1	0.9	0.0	0	NM	
WS8	1	1004	16	4.04	12:22	2.03	0	0.0	0.0	0.0	18.5	0.8	0.0	0	NM	
Piezometer boreholes																
CP1	1	NA	16	25.03	NM	1.07	NM	NM	NM							
CP2	1		16	23.91		0.98										
CP3	1		16	23.85		0.84										
CP4	1		16	23.16		1.05										
CP5	1		16	23.92		0.74										
CP6	1		16	23.70		0.91										
CP7	1		16	23.75		0.82										

Gas & Groundwater Monitoring Record

TerraConsult

Project No:	4593	Project:	Statera - Tilbury
Date:	09/10/2019		
Operator:	TM		
Equipment used:	Dipmeter & GFM435 s/n 11378		

State of Ground:	Dry
Wind :	Blustery
Wind direction:	
Cloud cover:	Light clouds
Precipitation:	None
Pressure trend:	Steady

Detection limits:	0.1% vol	0.1%	0.1% vol	0.1% vol	0.1 ppm	1.0 ppm	NA	

Borehole ID	Inst ID	Barometric Pressure (mbars)	Air temp (oC)	Depth of Installation (m BGL)	Time of Reading hh:mm	Depth to Groundwater (m BGL)	Differential Pressure (Pa)	FlowRate (l/hr)	CH4 (% vol)	CH4 (% LEL)	O2 (% vol)	CO2 (% vol)	CO (ppm)	H2S (ppm)	Nitrogen (% vol)	Remarks
WS1	1	1004	14	4.84	12:43	2.60	0	0.0	0.0	0.0	17.8	2.3	0.0	0	NM	
WS2	1	1003	14	4.45	12:33	1.71	0	0.0	0.0	0.0	17.7	2.2	0.0	0	NM	
WS4	1	1004	14	4.10	12:15	2.5	0	0.0	0.0	0.0	18.4	2.2	0.0	0	NM	
WS6	1	1004	15	4.49	14:44	2.12	0	0.0	0.0	0.0	19.3	0.7	0.0	0	NM	
WS7	1	1005	15	4.20	14:25	2.23	0	0.0	0.0	0.0	18.9	0.9	0.0	0	NM	
WS8	1	1004	15	4.07	15:11	2.02	0	0.0	0.0	0.0	18.2	0.8	0.0	0	NM	
Piezometer boreholes																
CP1	1	NA	14	25.03	NM	1.08	NM	NM	NM							
CP2	1		14	23.91		0.95										
CP3	1		14	23.85		0.97										
CP4	1		14	23.17		1.08										
CP5	1		15	23.92		0.72										
CP6	1		15	23.71		0.93										
CP7	1		15	23.76		0.85										

Gas & Groundwater Monitoring Record

TerraConsult

Project No:	4593	Project:	Statera - Tilbury
Date:	15/10/2019		
Operator:	TM		
Equipment used:	Dipmeter & GFM435 s/n 11378		

State of Ground:	Damp
Wind :	Light breeze
Wind direction:	
Cloud cover:	Cloudy with sunny spells
Precipitation:	None
Pressure trend:	Falling

Detection limits:	0.1% vol	0.1%	0.1% vol	0.1% vol	0.1 ppm	1.0 ppm	NA	

Borehole ID	Inst ID	Barometric Pressure (mbars)	Air temp (oC)	Depth of Installation (m BGL)	Time of Reading hh:mm	Depth to Groundwater (m BGL)	Differential Pressure (Pa)	FlowRate (l/hr)	CH4 (% vol)	CH4 (% LEL)	O2 (% vol)	CO2 (% vol)	CO (ppm)	H2S (ppm)	Nitrogen (% vol)	Remarks
WS1	1	1004	15	4.86	13:03	2.60	0	0.0	0.0	0.0	17.5	1.7	0.0	0	NM	
WS2	1	1006	15	4.48	12:54	1.71	0	0.0	0.0	0.0	17.2	2.3	0.0	0	NM	
WS4	1	1006	15	4.14	12:37	2.50	0	0.0	0.0	0.0	16.8	2.2	0.0	0	NM	
WS6	1	1004	15	4.53	13:40	2.12	0	0.0	0.0	0.0	18.5	0.8	0.0	0	NM	
WS7	1	1004	15	4.20	14:09	2.23	0	0.0	0.0	0.0	18.5	0.9	0.0	0	NM	
WS8	1	1004	15	4.05	14:03	2.02	0	0.0	0.0	0.0	17.1	0.9	0.0	0	NM	
Piezometer boreholes																
CP1	1	NA	15	25.03	NM	1.09	NM	NM	NM							
CP2	1		15	23.91		0.93										
CP3	1		15	23.82		1.09										
CP4	1		15	23.08		1.06										
CP5	1		15	23.93		0.72										
CP6	1		15	23.70		0.89										
CP7	1		15	23.76		0.8										

Appendix D

Laboratory Analysis Results

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
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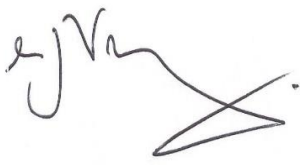
THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	19-25079
Issue:	1
Date of Issue:	04/10/2019
Contact:	Jason Tilley
Customer Details:	TerraConsult Ltd Bold Business Centre Unit 34, Bold Lane St Helens MersevsideWA9 4TX
Quotation No:	Q19-01619
Order No:	PO-005865
Customer Reference:	4593
Date Received:	01/10/2019
Date Approved:	04/10/2019
Details:	Tilbury
Approved by:	

Mike Varley, Technical Manager

Sample Summary

Report No.: 19-25079, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
185495	CP1 4.50	24/09/2019	01/10/2019	Loamy sand	
185496	CP1 10.00	24/09/2019	01/10/2019	Loamy sand	
185497	CP2 7.50	24/09/2019	01/10/2019	Clayey loam	
185498	CP2 13.50	24/09/2019	01/10/2019	Loamy sand	
185499	CP3 9.00	24/09/2019	01/10/2019	Silty clayey loam	
185500	CP3 14.50	24/09/2019	01/10/2019	Silty clayey loam	
185501	CP4 3.50	24/09/2019	01/10/2019	Silty clayey loam	
185502	CP4 5.90	24/09/2019	01/10/2019	Silty loam	
185503	CP5 5.80	24/09/2019	01/10/2019	Silty loam	
185504	CP5 14.50	24/09/2019	01/10/2019	Sandy loam	
185505	CP6 5.50	24/09/2019	01/10/2019	Silty loam	
185506	CP7 5.50	24/09/2019	01/10/2019	Silty clayey loam	

Results Summary

Report No.: 19-25079, issue number 1

				ELAB Reference	185495	185496	185497	185498	185499
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	CP1	CP1	CP2	CP2	CP3
				Sample Depth (m)	4.50	10.00	7.50	13.50	9.00
				Sampling Date	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Material removed	N	%	0.1		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0		None	None	None	None	None
Anions									
Water Soluble Sulphate	M	g/l	0.02		1.12	0.83	0.73	0.74	0.32
Miscellaneous									
pH	M	pH units	0.1		8.5	8.4	8.3	8.2	8.5

Results Summary

Report No.: 19-25079, issue number 1

				ELAB Reference	185500	185501	185502	185503	185504
				Customer Reference					
				Sample ID					
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Location	CP3	CP4	CP4	CP5	CP5
				Sample Depth (m)	14.50	3.50	5.90	5.80	14.50
				Sampling Date	24/09/2019	24/09/2019	24/09/2019	24/09/2019	24/09/2019
Determinand	**Codes**	**Units**	**LOD**						
Soil sample preparation parameters									
Material removed	N	%	0.1		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0		None	None	None	None	None
Anions									
Water Soluble Sulphate	M	g/l	0.02		0.42	1.48	2.08	0.33	0.22
Miscellaneous									
pH	M	pH units	0.1		7.8	8.1	7.4	7.0	7.9

Results Summary

Report No.: 19-25079, issue number 1

			ELAB Reference	185505	185506
			Customer Reference		
			Sample ID		
			Sample Type	SOIL	SOIL
			Sample Location	CP6	CP7
			Sample Depth (m)	5.50	5.50
			Sampling Date	24/09/2019	24/09/2019
Determinand	**Codes**	**Units**	**LOD**		
Soil sample preparation parameters					
Material removed	N	%	0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None
Anions					
Water Soluble Sulphate	M	g/l	0.02	0.12	0.27
Miscellaneous					
pH	M	pH units	0.1	7.0	8.5

Method Summary

Report No.: 19-25079, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	03/10/2019	113	Electromeric
Water soluble anions	M	Air dried sample	03/10/2019	172	Ion Chromatography

Report Information

Report No.: 19-25079, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.
ELAB are unable to provide an interpretation or opinion on the content of this report.
The results relate only to the sample received.
PCB congener results may include any coeluting PCBs
Uncertainty of measurement for the determinands tested are available upon request
Unless otherwise stated, sample information has been provided by the client

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

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e: reception@i2analytical.com

Analytical Report Number : 19-62316

Project / Site name:	Statera, Tilbury	**Samples received on:**	24/09/2019
Your job number:	4593	**Samples instructed on:**	24/09/2019
Your order number:	PO-005803	**Analysis completed by:**	03/10/2019
Report Issue Number:	1	**Report issued on:**	03/10/2019
Samples Analysed:	9 soil samples		

Signed:

Zina Abdul Razzak
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 19-62316

Project / Site name: Statera, Tilbury

Your Order No: PO-005803

Lab Sample Number				12881	12882	12883	12884	12885
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.20	0.40	0.40	0.20
Date Sampled				19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SOILS								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	11	17	16	15	12
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.1	6.8	7.2	7.1	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.20	0.11	0.0099	0.019	0.020
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	120	8.3	3.2	14	12
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	20	14	7.4	25
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.7	1.8	1.2	1.3	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	14	9.9	5.7	4.2	5.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	50	50	40	43	39
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.5	4.9	5.0	24	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	20	16	15	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	30	43	24	40	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	84	86	67	71	67
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	80	80	68	110	77
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Analytical Report Number: 19-62316

Project / Site name: Statera, Tilbury

Your Order No: PO-005803

Lab Sample Number				12881	12882	12883	12884	12885
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.20	0.40	0.40	0.20
Date Sampled				19/09/2019	19/09/2019	19/09/2019	19/09/2019	19/09/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
Mineral Oil (C10 - C40)	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH (C10 - C25)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 19-62316

Project / Site name: Statera, Tilbury

Your Order No: PO-005803

Lab Sample Number				12886	12887	12888	12889	
Sample Reference				WS06	WS07	WS08	WS09	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.30	0.15	0.10	0.25	
Date Sampled				20/09/2019	20/09/2019	20/09/2019	20/09/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SOILS								
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	17	16	15	18	
Total mass of sample received	kg	0.001	NONE	1.0	1.1	0.40	1.1	
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.5	7.3	7.1	7.4	
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.026	0.021	0.024	0.020	
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	20	31	20	11	
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Coronene	mg/kg	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Total PAH								
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.9	< 0.9	< 0.9	< 0.9	
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	14	19	19	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.4	1.3	1.5	1.4	
Boron (water soluble)	mg/kg	0.2	MCERTS	5.8	3.7	4.6	4.6	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	43	38	43	40	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	11	9.7	14	11	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	33	32	30	30	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	26	27	26	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	75	71	74	72	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	81	78	130	82	
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	

Analytical Report Number: 19-62316

Project / Site name: Statera, Tilbury

Your Order No: PO-005803

Lab Sample Number				12886	12887	12888	12889	
Sample Reference				WS06	WS07	WS08	WS09	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.30	0.15	0.10	0.25	
Date Sampled				20/09/2019	20/09/2019	20/09/2019	20/09/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Petroleum Hydrocarbons								
Mineral Oil (C10 - C40)	mg/kg	10	NONE	< 10	< 10	< 10	< 10	
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	
TPH (C10 - C25)	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 19-62316

Project / Site name: Statera, Tilbury

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
12881	WS01	None Supplied	0.30	Brown clay with vegetation.
12882	WS02	None Supplied	0.20	Brown clay with vegetation.
12883	WS03	None Supplied	0.40	Brown clay with vegetation.
12884	WS04	None Supplied	0.40	Brown clay and sand with vegetation.
12885	WS05	None Supplied	0.20	Brown clay and gravel with vegetation.
12886	WS06	None Supplied	0.30	Brown clay.
12887	WS07	None Supplied	0.15	Brown clay.
12888	WS08	None Supplied	0.10	Brown clay.
12889	WS09	None Supplied	0.25	Brown clay.

Analytical Report Number : 19-62316

Project / Site name: Statera, Tilbury

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L017-UK	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
DRO (Soil)	Determination of extractable hydrocarbons in soil by GC-MS/FID.	In-house method	L076-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	in-house method	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding.	L076-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 19-65300

Project / Site name:	Tilbury	**Samples received on:**	11/10/2019
Your job number:	4593	**Samples instructed on:**	11/10/2019
Your order number:	PO-005935	**Analysis completed by:**	17/10/2019
Report Issue Number:	1	**Report issued on:**	17/10/2019
Samples Analysed:	3 water samples		

Signed:

Zina Abdul Razzak
Senior Quality Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 19-65300

Project / Site name: Tilbury

Your Order No: PO-005935

Lab Sample Number				1327498	1327499	1327500		
Sample Reference				WS2	WS4	WS7		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				09/10/2019	09/10/2019	09/10/2019		
Time Taken				1440	1410	1430		
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3	7.4	7.4		
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	28000	6700	5500		
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10		
Sulphate as SO_4	µg/l	45	ISO 17025	1290000	2200000	1970000		
Chloride	mg/l	0.15	ISO 17025	6200	810	610		
Ammonium as NH_4	µg/l	15	ISO 17025	33000	6100	6200		
Nitrate as N	mg/l	0.01	ISO 17025	0.78	0.58	0.54		
Nitrate as NO_3	mg/l	0.05	ISO 17025	3.45	2.59	2.37		
Alkalinity	mgCaCO3/l	3	ISO 17025	2500	960	880		
Hardness - Total	mgCaCO3/l	1	ISO 17025	4400	1450	1740		
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	150	13	< 10		
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		

Analytical Report Number: 19-65300

Project / Site name: Tilbury

Your Order No: PO-005935

Lab Sample Number				1327498	1327499	1327500		
Sample Reference				WS2	WS4	WS7		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				09/10/2019	09/10/2019	09/10/2019		
Time Taken				1440	1410	1430		
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Boron (dissolved)	µg/l	10	ISO 17025	1800	1500	1100		
Calcium (dissolved)	mg/l	0.012	ISO 17025	410	190	330		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	820	240	220		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	-	-		
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	1.40	0.89		
Boron (dissolved)	µg/l	10	ISO 17025	1800	1500	1100		
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	< 0.02	< 0.02		
Calcium (dissolved)	mg/l	0.012	ISO 17025	410	190	330		
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.2	< 0.2		
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4	< 0.2		
Magnesium (dissolved)	mg/l	0.005	ISO 17025	820	240	220		
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05		
Nickel (dissolved)	µg/l	0.5	ISO 17025	< 0.5	9.2	< 0.5		
Selenium (dissolved)	µg/l	0.6	ISO 17025	U/S	14	13		
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		

Analytical Report Number: 19-65300

Project / Site name: Tilbury

Your Order No: PO-005935

Lab Sample Number				1327498	1327499	1327500		
Sample Reference				WS2	WS4	WS7		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				09/10/2019	09/10/2019	09/10/2019		
Time Taken				1440	1410	1430		
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10		

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 19-65300

Project / Site name: Tilbury

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water (by discreet analyser)	Determination of Alkalinity by discreet analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE

Analytical Report Number : 19-65300

Project / Site name: Tilbury

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

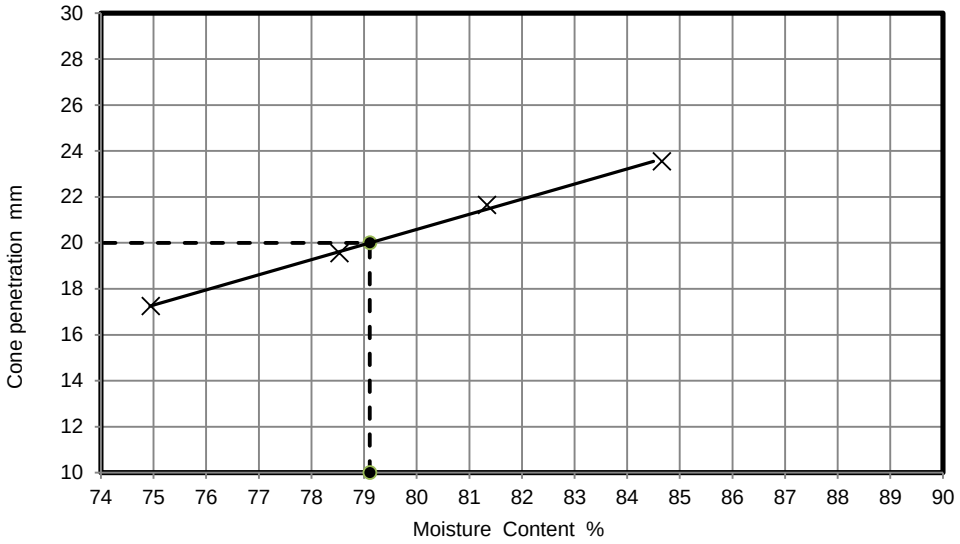
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	1
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Greyish brown slightly mottled dark orangish brown silty CLAY with traces of fine rootlets and selenite crystals			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	16/10/2019

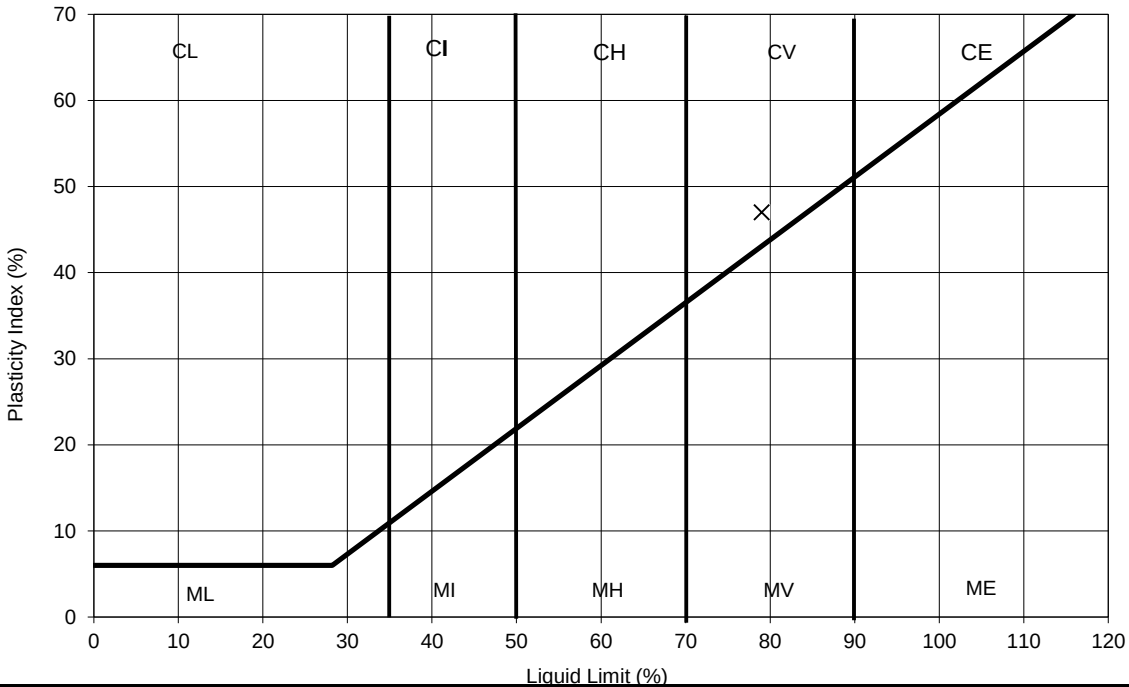
Job No.	27216
Borehole/Pit No.	CP01



NATURAL MOISTURE CONTENT	**60**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**79**	**%**
PLASTIC LIMIT	**32**	**%**
PLASTICITY INDEX	**47**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

2519

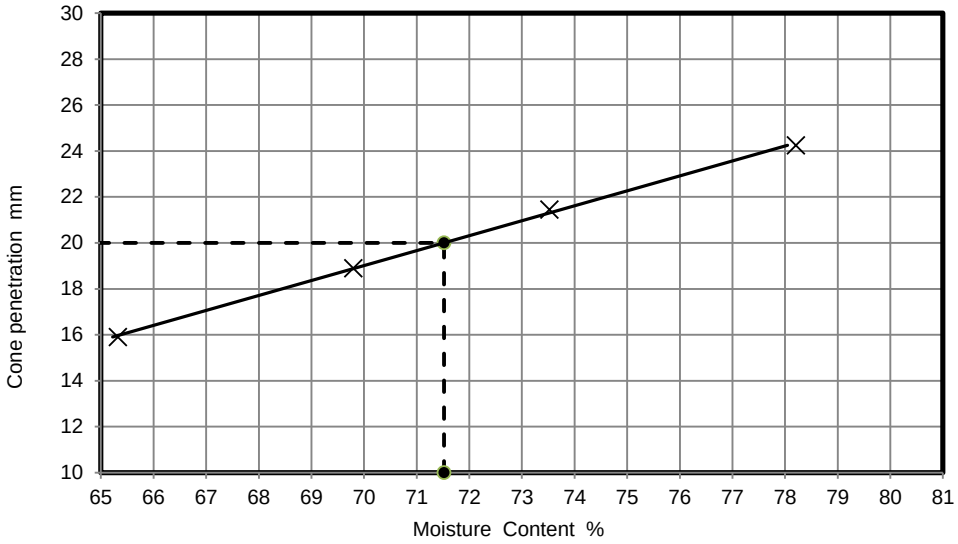
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5 R2

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	2
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Light orangish brown slightly mottled grey silty CLAY			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019

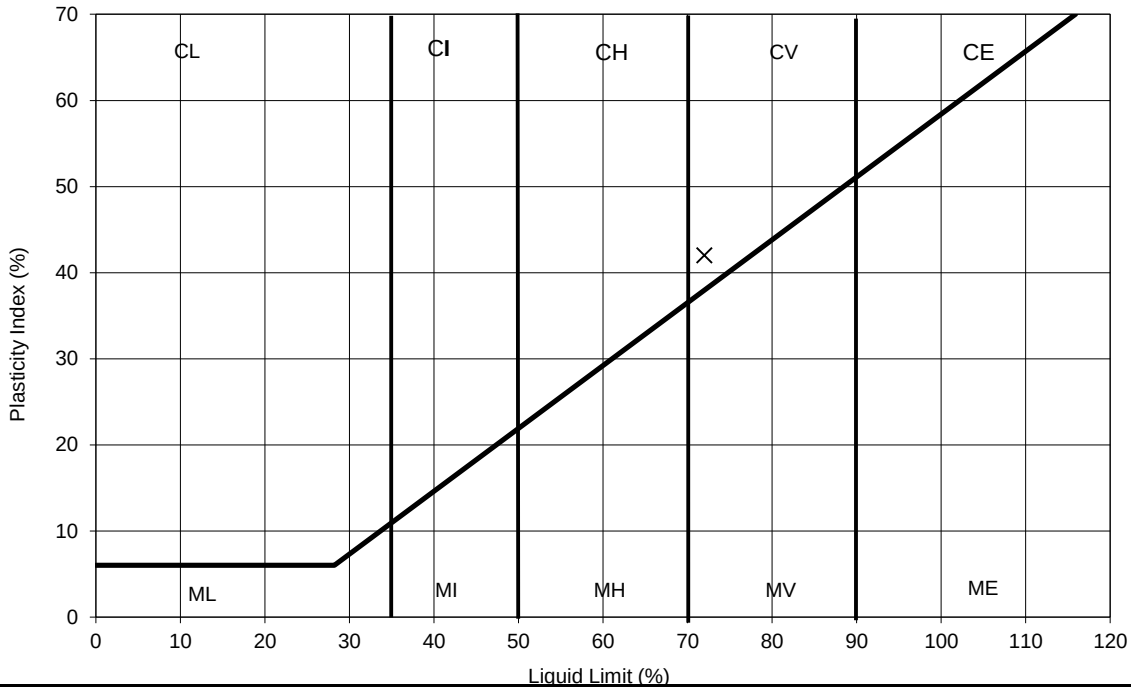
	Job No.	27216
	Borehole/Pit No.	CP02



NATURAL MOISTURE CONTENT	**58**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**72**	**%**
PLASTIC LIMIT	**30**	**%**
PLASTICITY INDEX	**42**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

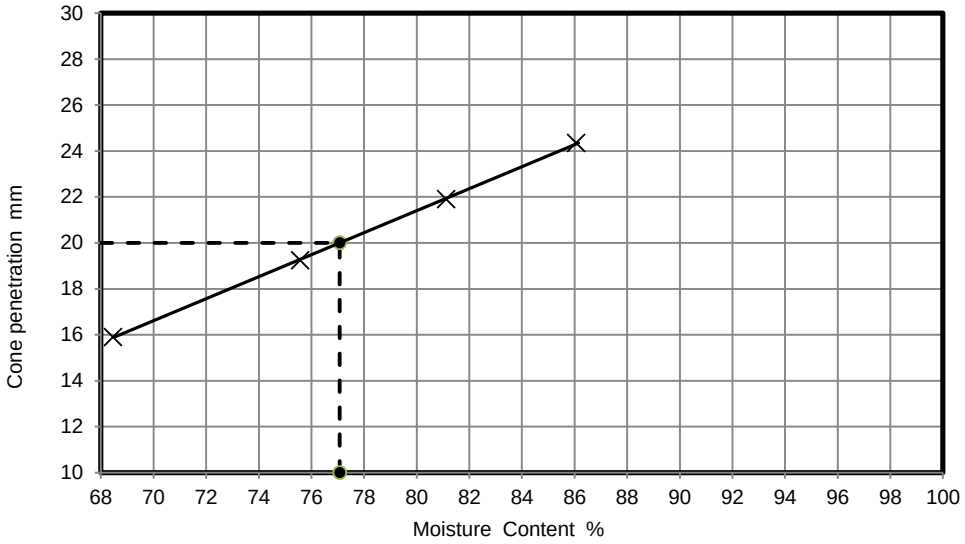
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

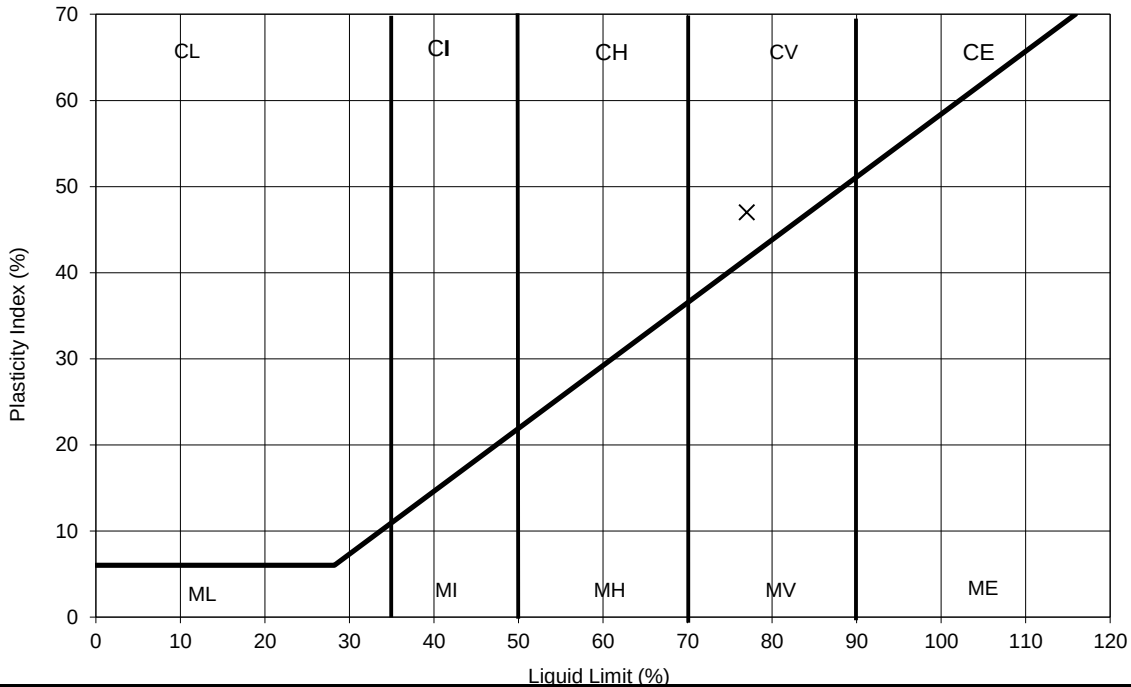
Site Name	Tilbury			Sample No.	3
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019
				Job No.	27216
				Borehole/Pit No.	CP02



NATURAL MOISTURE CONTENT	**87**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**77**	**%**
PLASTIC LIMIT	**30**	**%**
PLASTICITY INDEX	**47**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

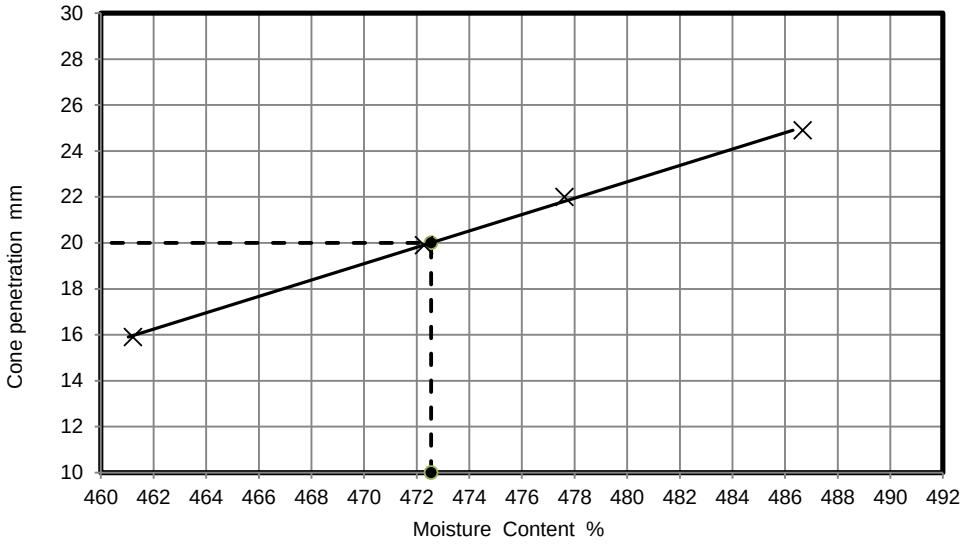
Initials: J.P
Date: 17/10/2019

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

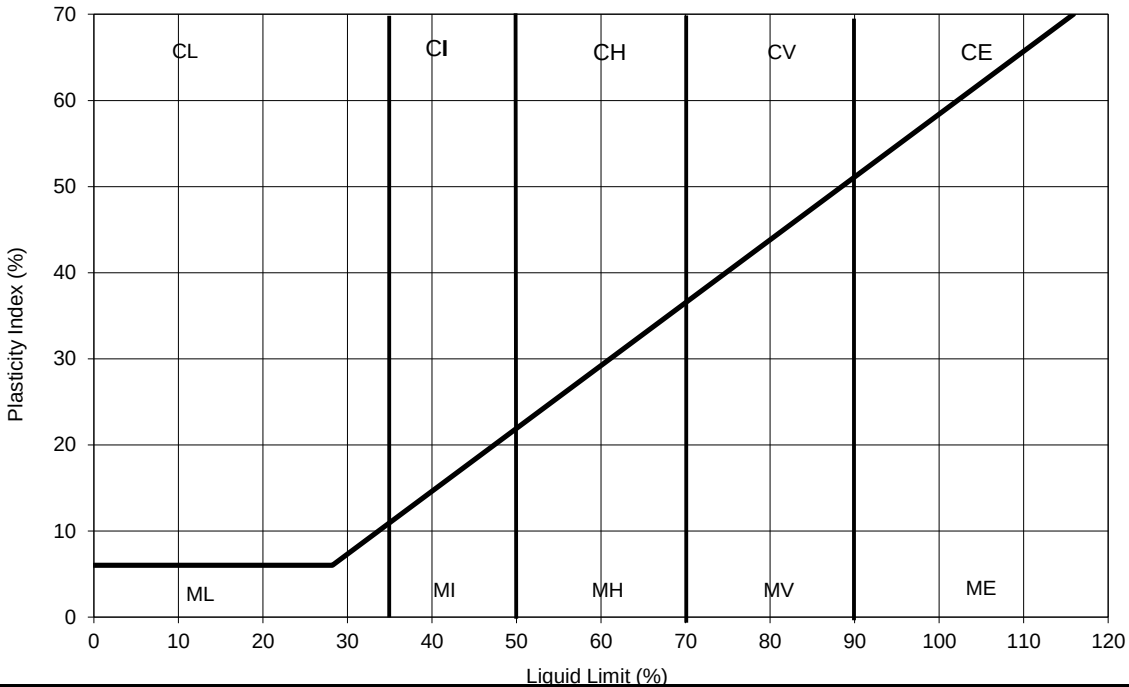
Site Name	Tilbury			Sample No.	4
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Extremely low strength black and dark brown mottled PEAT with occasional wood fragments			Depth Base	6.45 m
				Sample Type	U
				Job No.	27216
				Borehole/Pit No.	CP02
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	16/10/2019



NATURAL MOISTURE CONTENT	**380**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**473**	**%**
PLASTIC LIMIT	**335**	**%**
PLASTICITY INDEX	**138**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

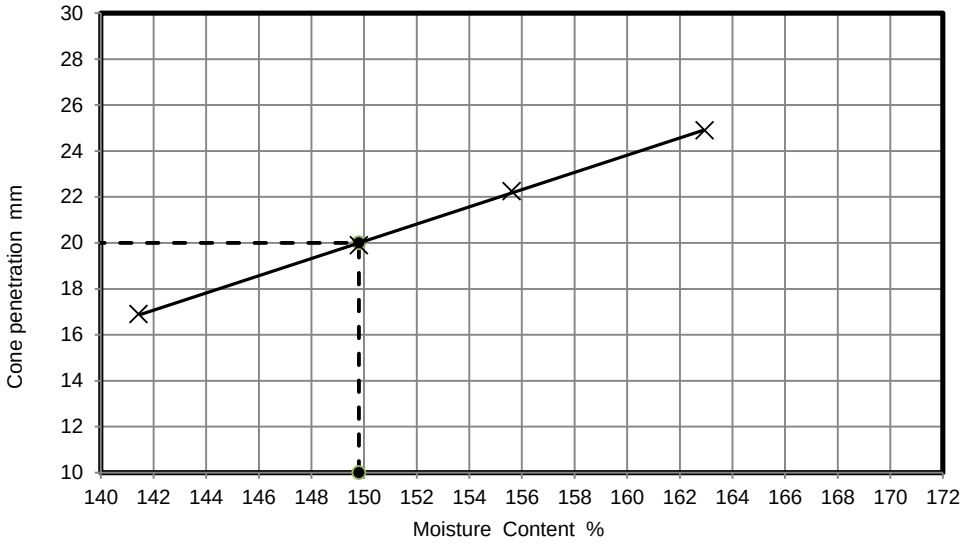
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

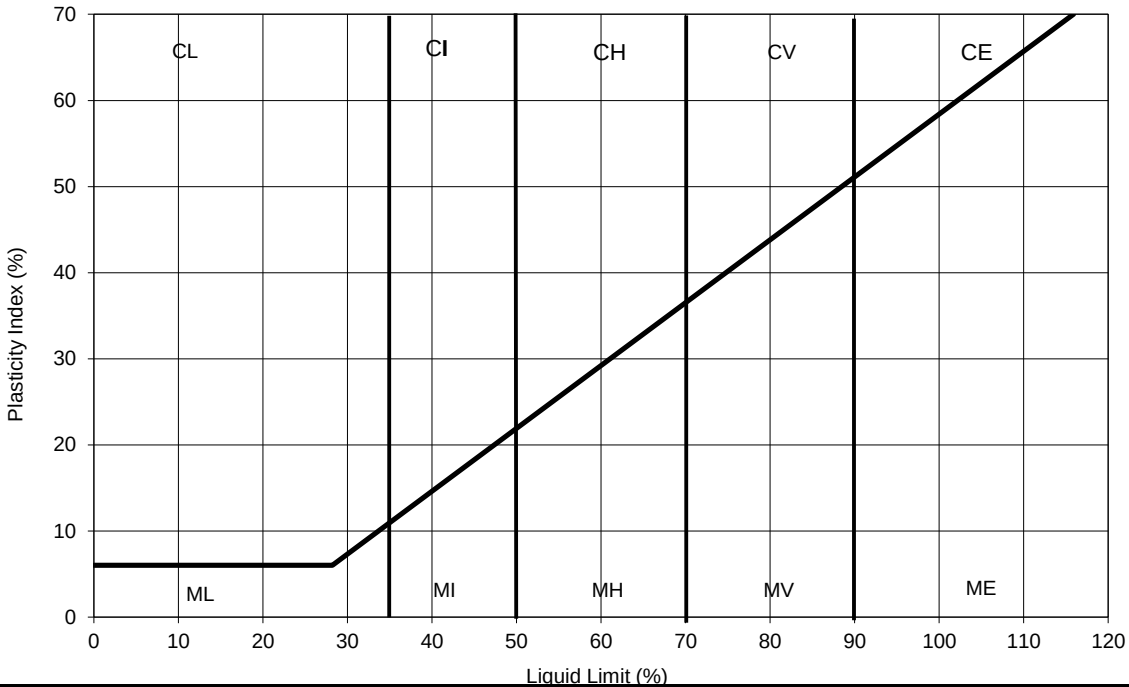
Site Name	Tilbury			Sample No.	5
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength dark brown PEAT with numerous wood fragments becoming at 1.55m bluish grey slightly peaty silty CLAY with occasional pockets of peat			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019
				Job No.	27216
				Borehole/Pit No.	CP03



NATURAL MOISTURE CONTENT	**127**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**150**	**%**
PLASTIC LIMIT	**50**	**%**
PLASTICITY INDEX	**100**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P
Date: 17/10/2019

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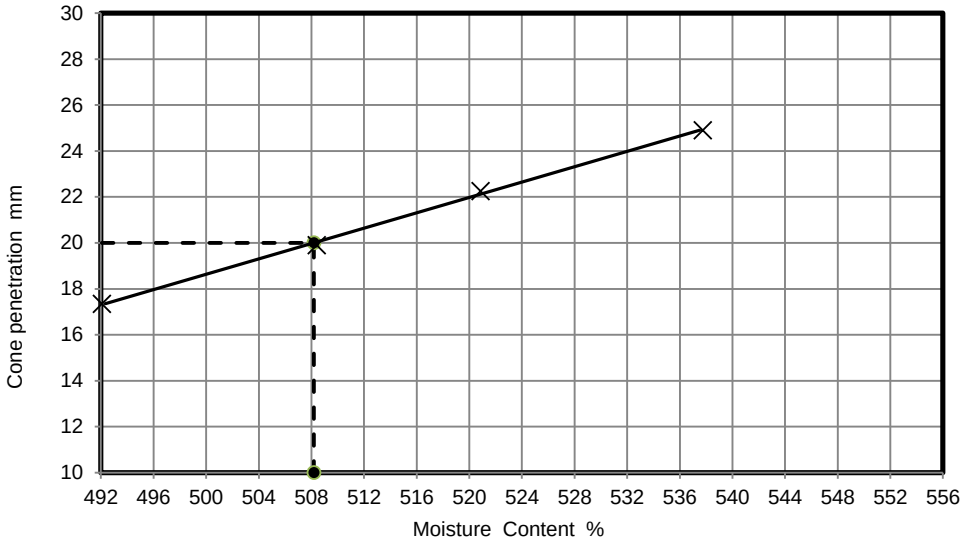
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	6
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Medium strength black and brown PEAT with occasional decayed wood fragments			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019

Job No. 27216

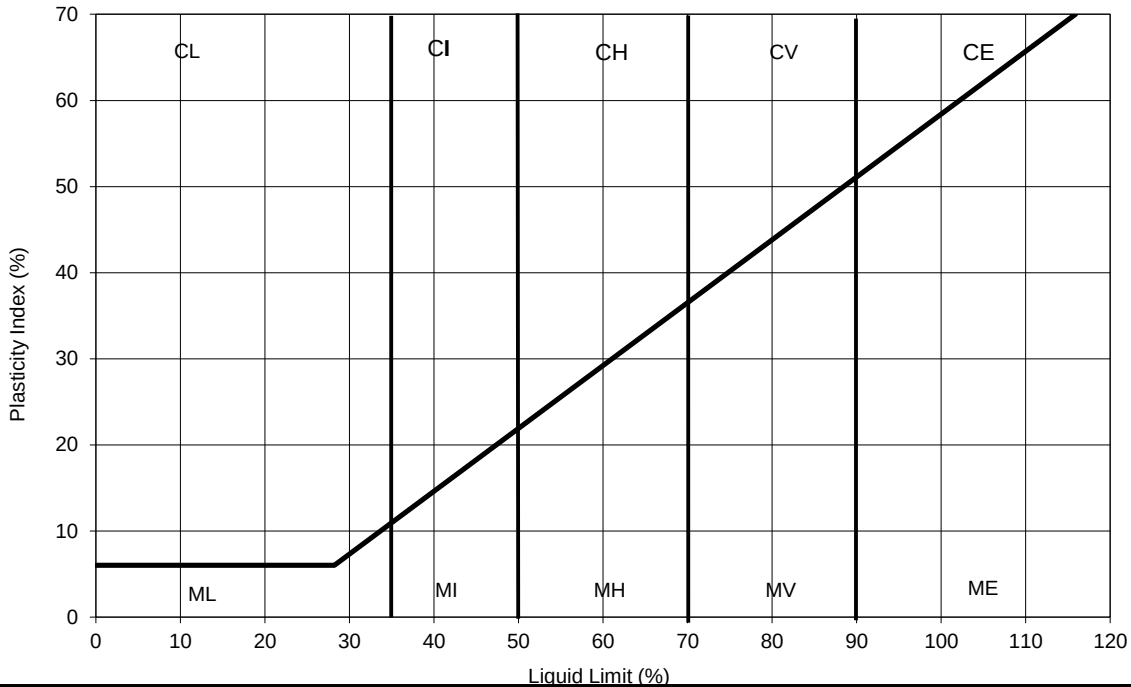
Borehole/Pit No. CP03



NATURAL MOISTURE CONTENT	**421**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**508**	**%**
PLASTIC LIMIT	**400**	**%**
PLASTICITY INDEX	**108**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P

Date: 17/10/2019

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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

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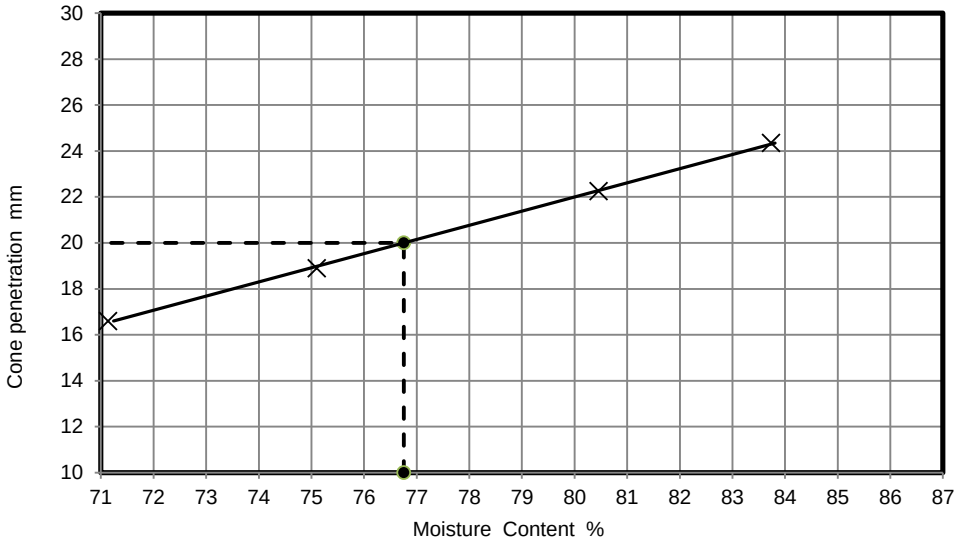
LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	7
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Low strength grey slightly peaty silty CLAY with occasional brown stains and decayed wood fragments			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019

Job No. 27216

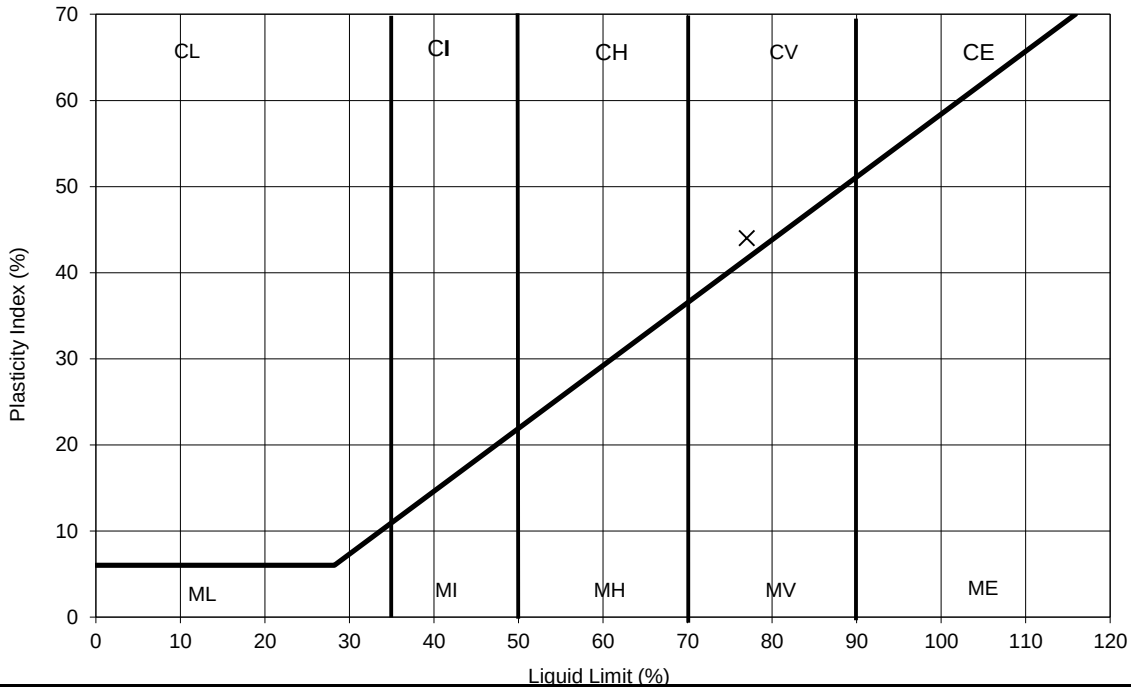
Borehole/Pit No. CP04



NATURAL MOISTURE CONTENT	**59**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**77**	**%**
PLASTIC LIMIT	**33**	**%**
PLASTICITY INDEX	**44**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P

Date: 17/10/2019

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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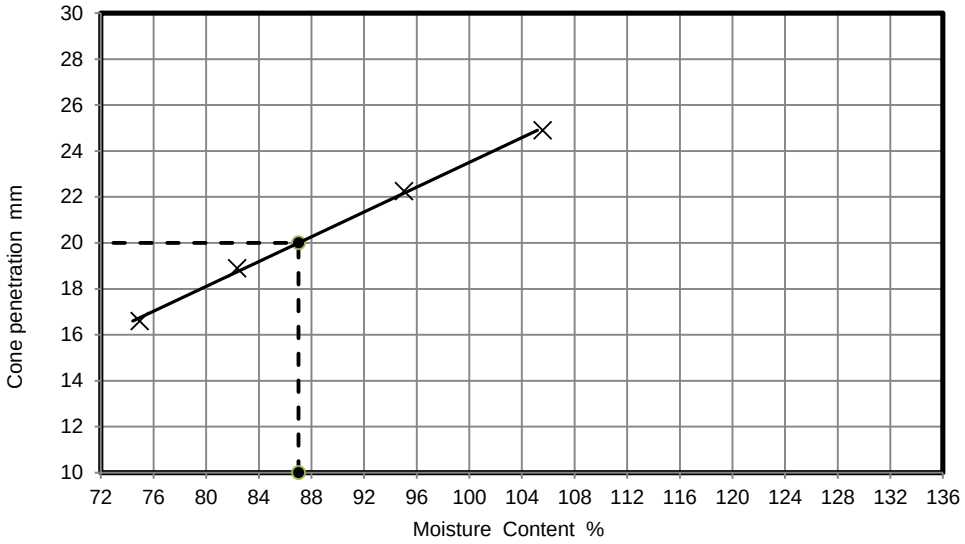
LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	8
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional black flecks			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019

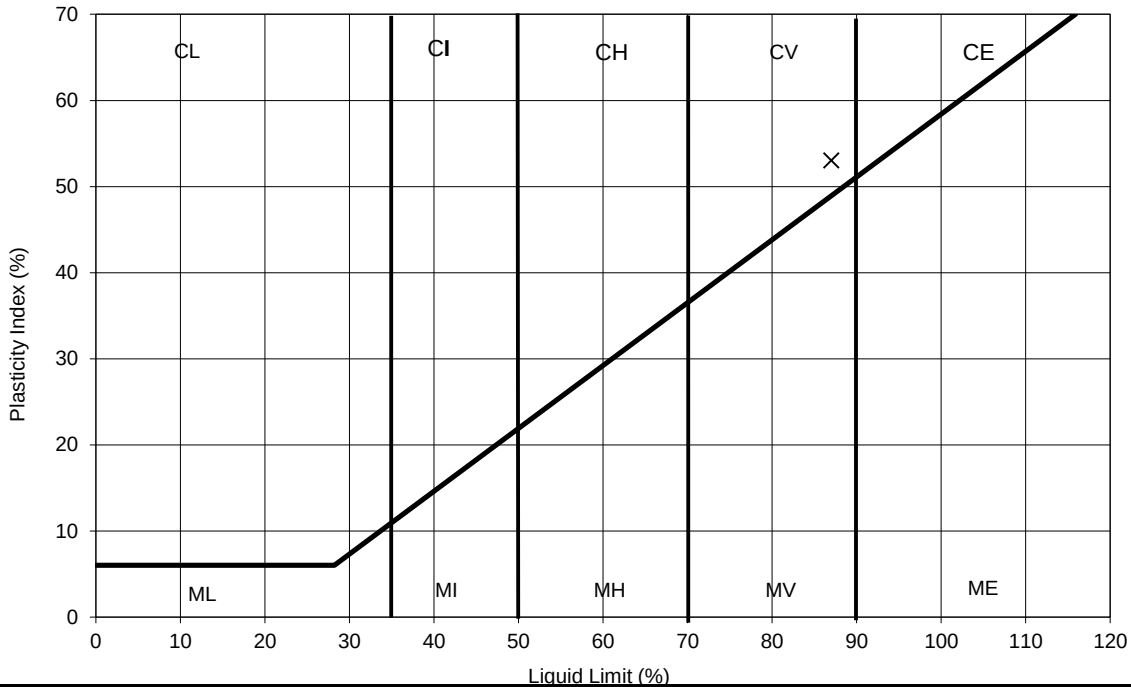
Job No.	27216
Borehole/Pit No.	CP04



NATURAL MOISTURE CONTENT	**99**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**87**	**%**
PLASTIC LIMIT	**34**	**%**
PLASTICITY INDEX	**53**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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Checked and Approved

Initials: J.P
Date: 17/10/2019

UKAS TESTING 2519

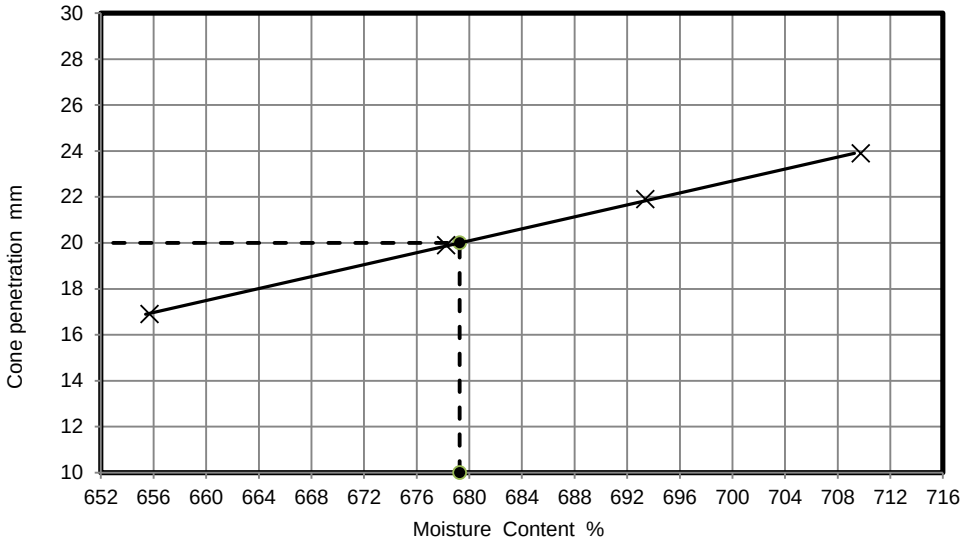
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	9
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Low strength black mottled brown PEAT with occasional wood fragments			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

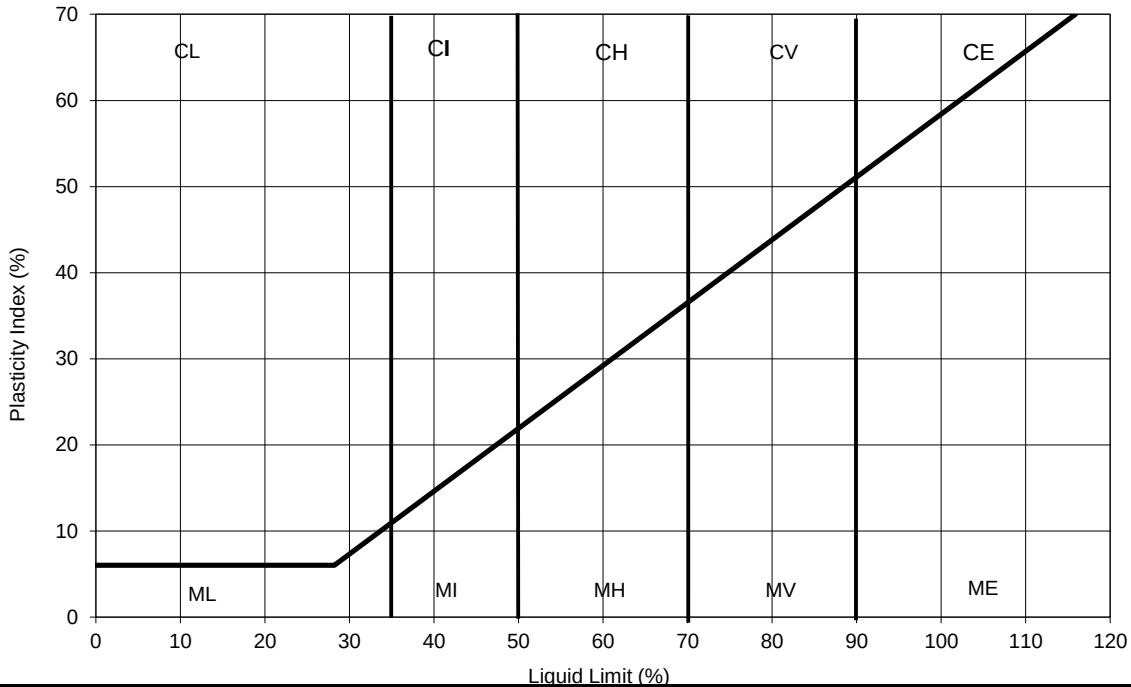
Borehole/Pit No. CP04



NATURAL MOISTURE CONTENT	**469**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**679**	**%**
PLASTIC LIMIT	**429**	**%**
PLASTICITY INDEX	**250**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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Checked and Approved

Initials: J.P

Date: 17/10/2019

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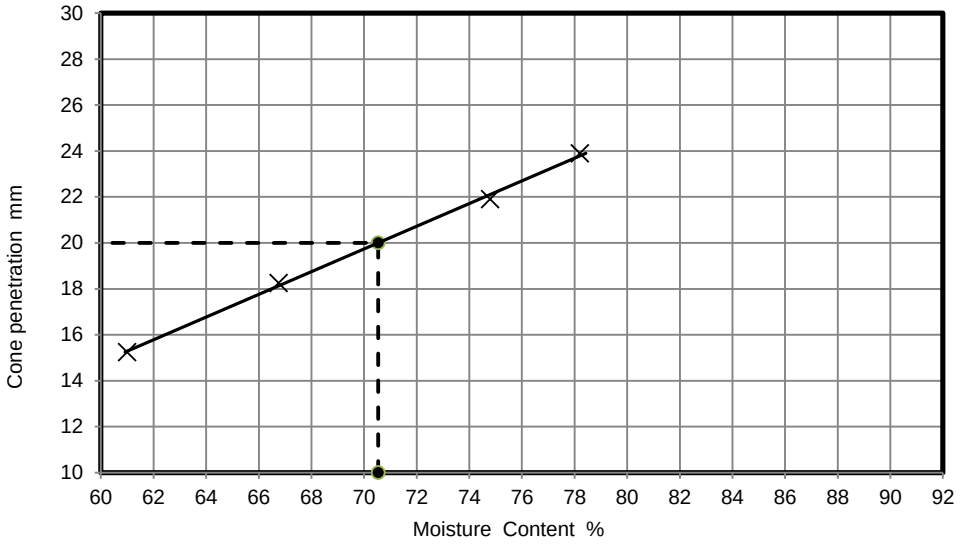
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

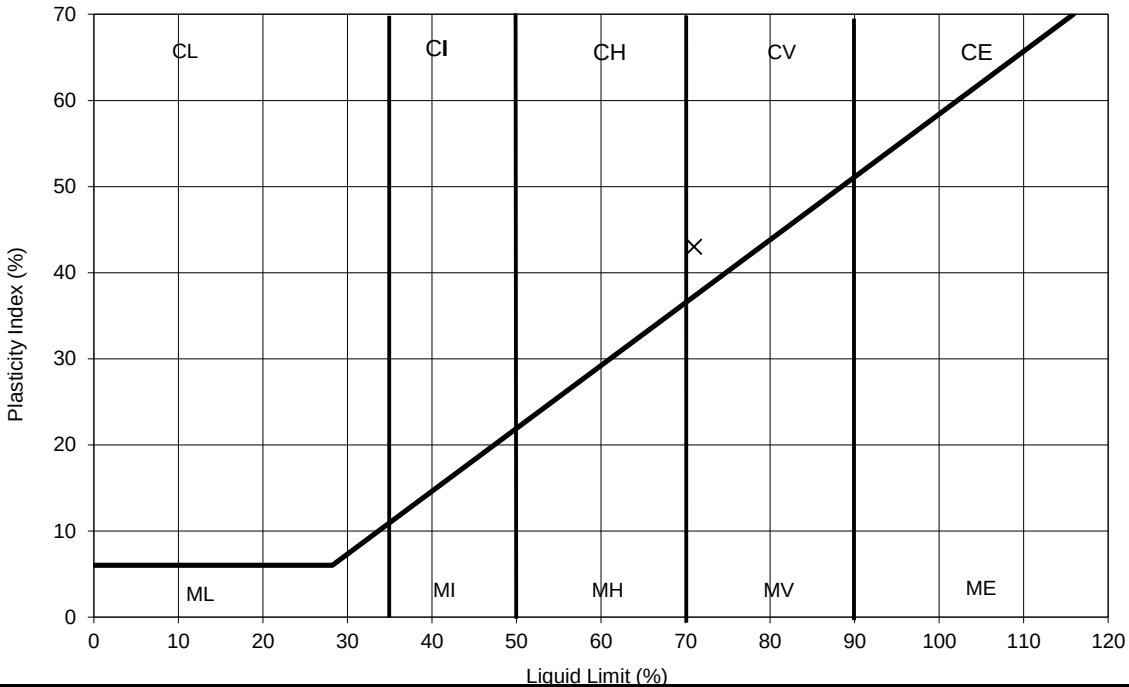
Site Name	Tilbury			Job No.	27216
				Borehole/Pit No.	CP05
Project No.	4593	Client	TerraConsult South	Sample No.	10
				Depth Top	1.50 m
Soil Description	Very low strength brownish grey and grey mottled slightly peaty silty CLAY with traces of decayed wood, occasional roots and carbonaceous deposits			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019



NATURAL MOISTURE CONTENT	**62**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**71**	**%**
PLASTIC LIMIT	**28**	**%**
PLASTICITY INDEX	**43**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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UKAS TESTING 2519

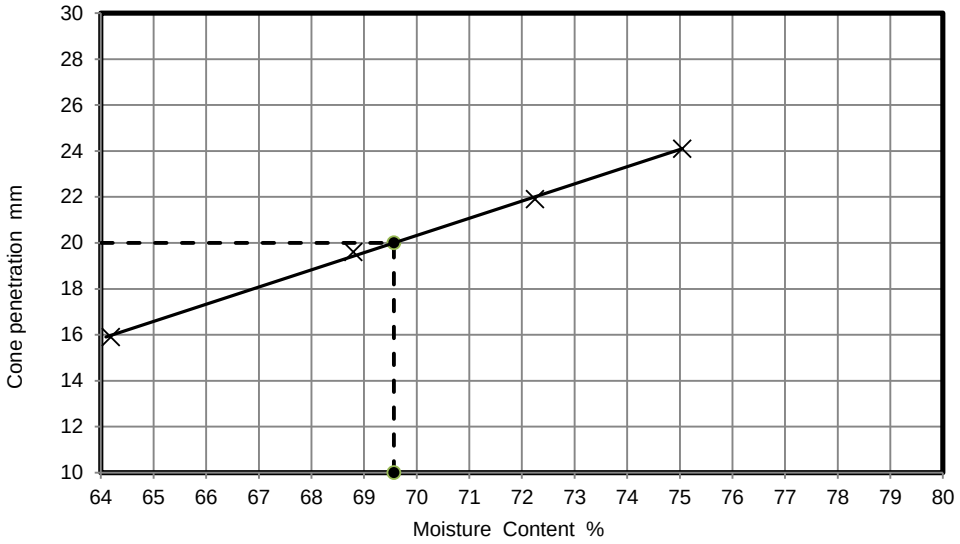
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	11
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly mottled brown slightly peaty silty CLAY with occasional decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

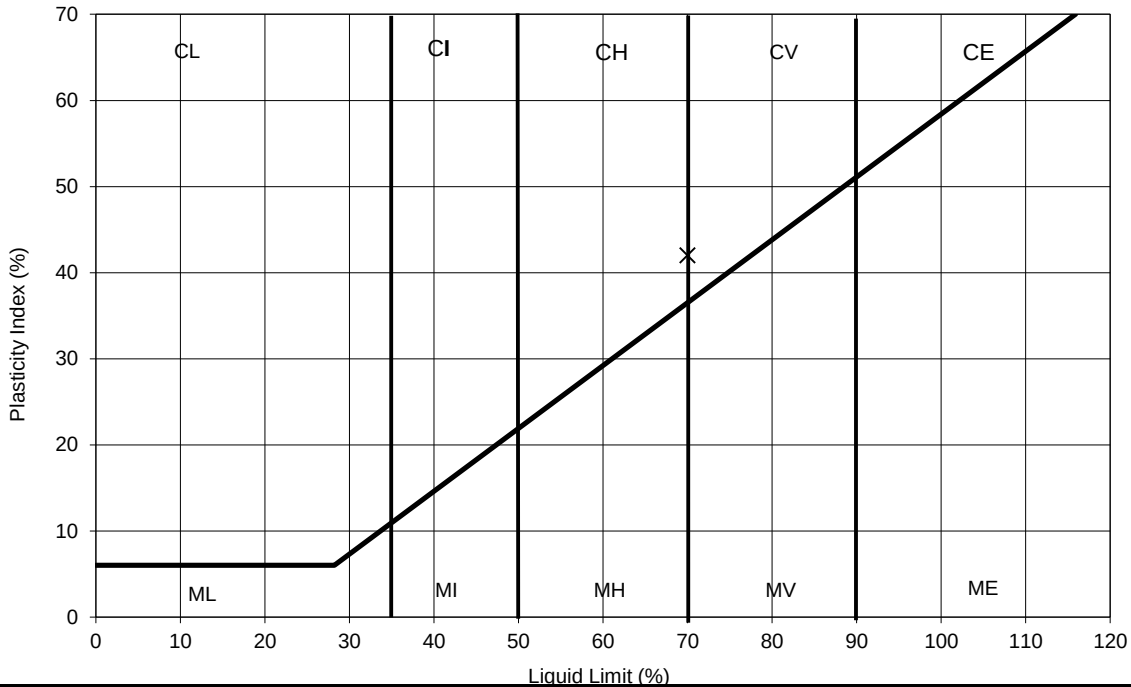
Borehole/Pit No. CP05



NATURAL MOISTURE CONTENT	**59**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**70**	**%**
PLASTIC LIMIT	**28**	**%**
PLASTICITY INDEX	**42**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P

Date: 17/10/2019

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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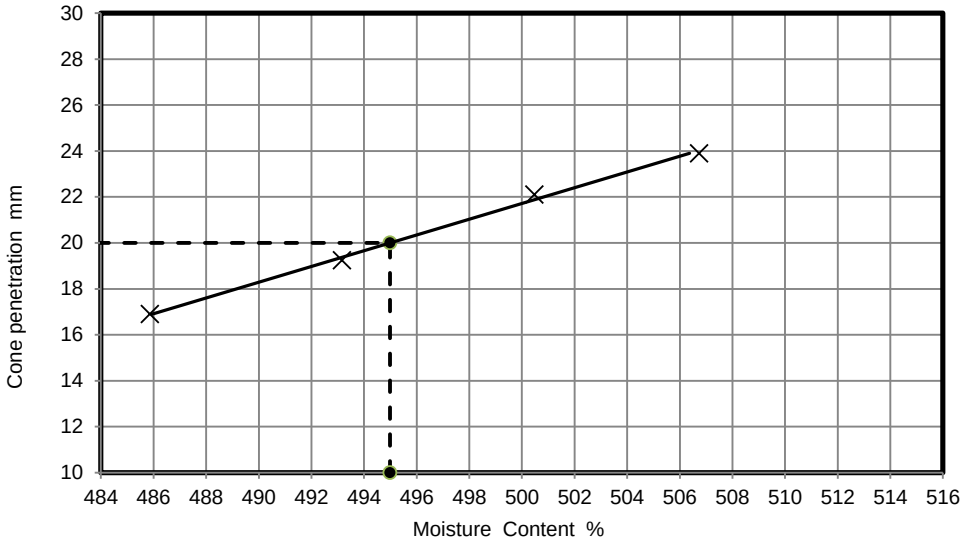
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

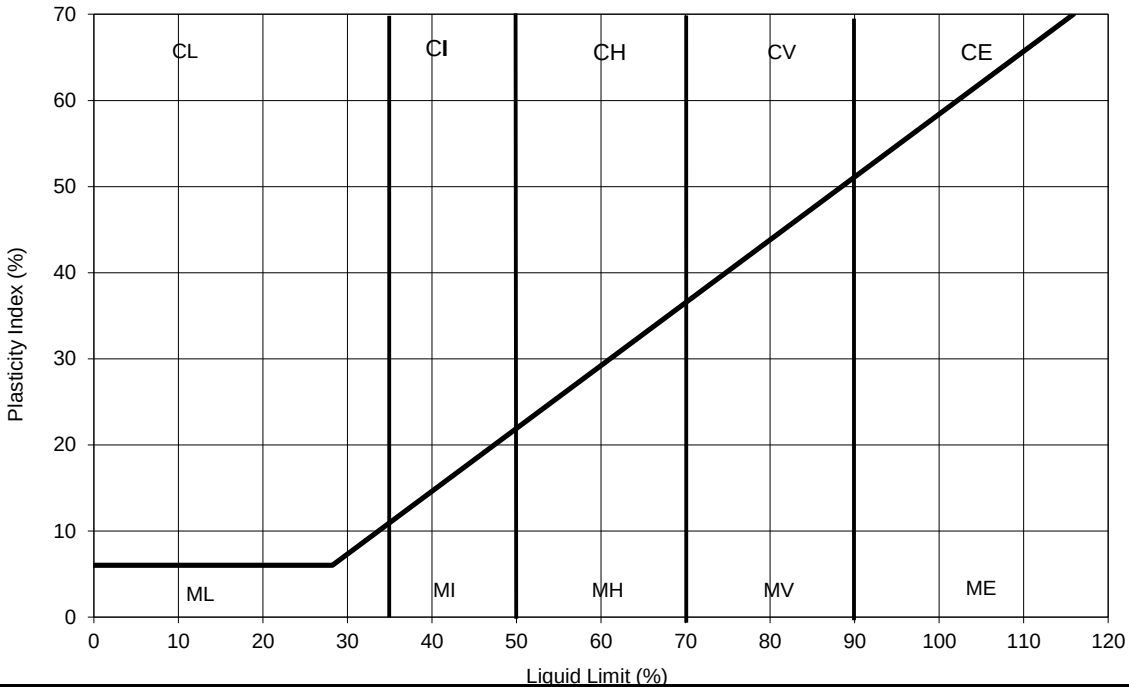
Site Name	Tilbury			Sample No.	12
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Medium strength black, brown and light brown mottled decayed wood PEAT			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019
				Job No.	27216
				Borehole/Pit No.	CP05



NATURAL MOISTURE CONTENT	**341**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**495**	**%**
PLASTIC LIMIT	**384**	**%**
PLASTICITY INDEX	**111**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P
Date: 17/10/2019

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

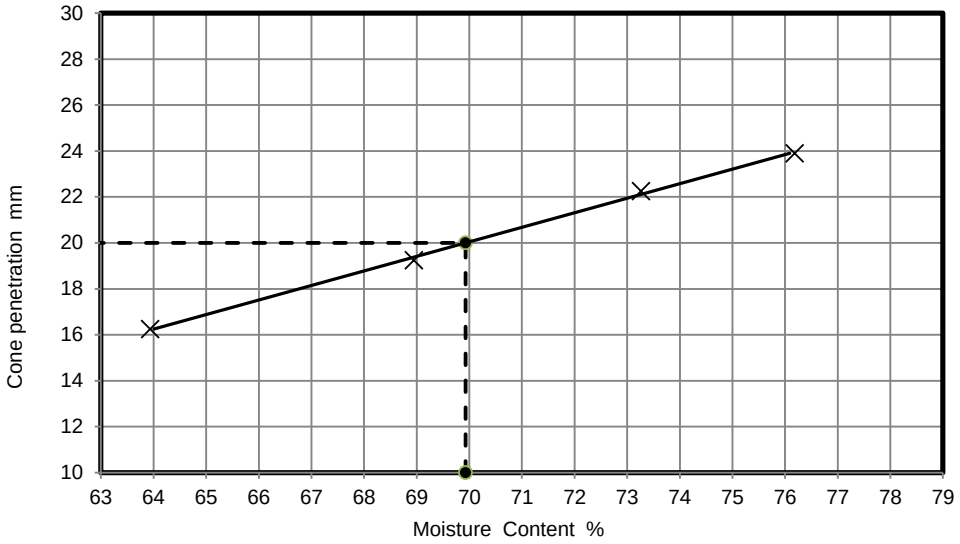
MSF-5 R2

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	13
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength grey with numerous brown stains silty CLAY with occasional decayed wood fragments			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

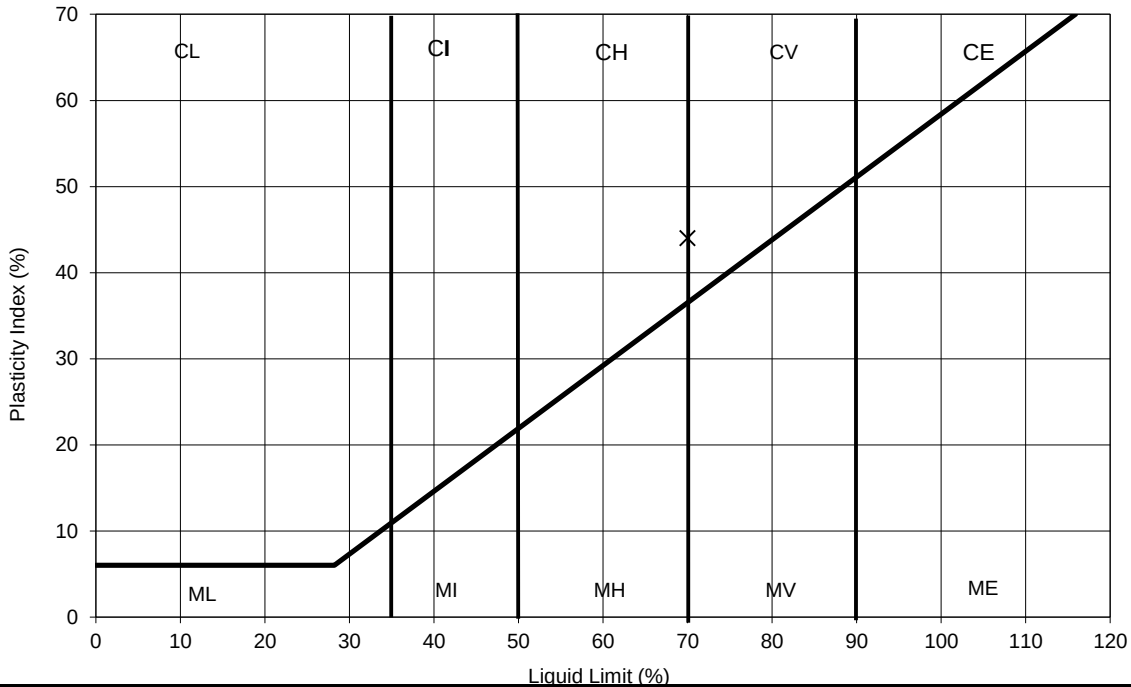
Borehole/Pit No. CP06



NATURAL MOISTURE CONTENT	**51**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**70**	**%**
PLASTIC LIMIT	**26**	**%**
PLASTICITY INDEX	**44**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P

Date: 17/10/2019

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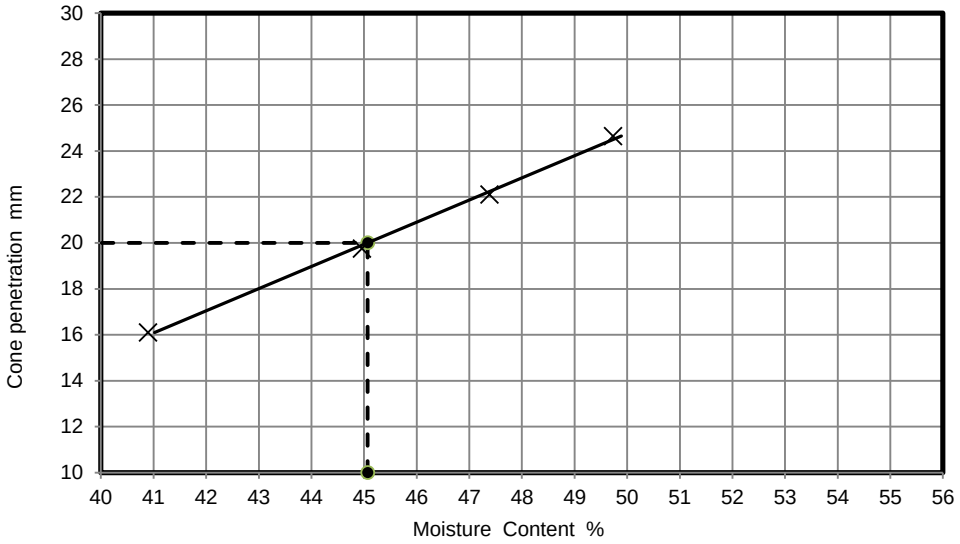
LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	14
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly fine sandy slightly peaty silty CLAY with rare decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

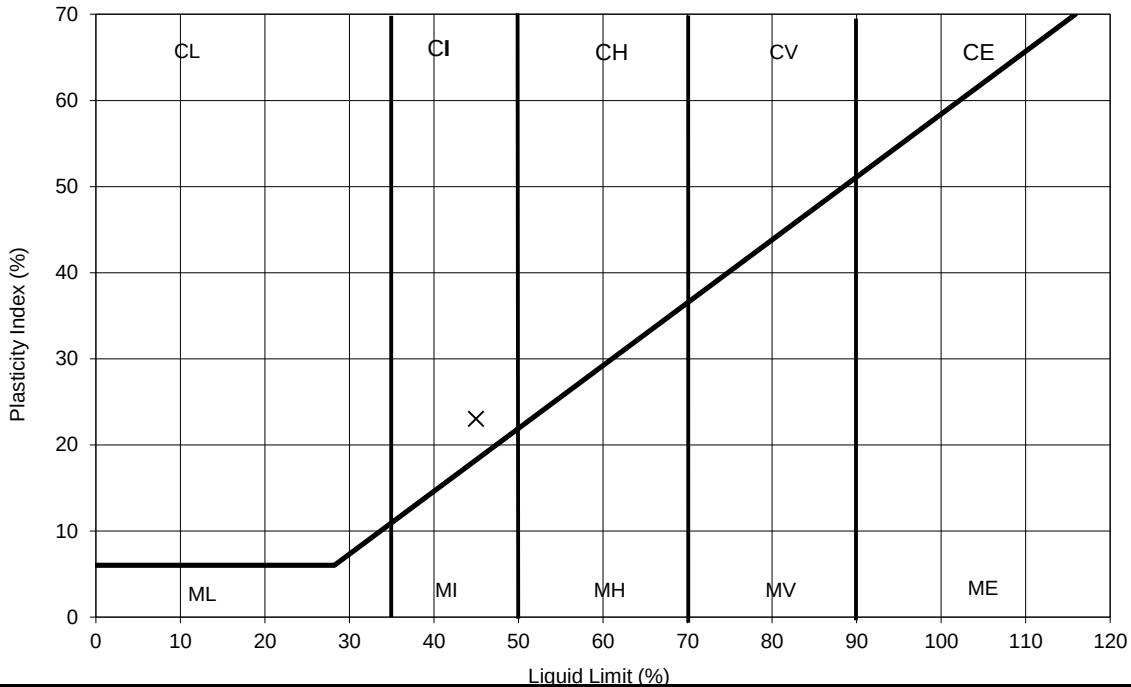
Borehole/Pit No. CP06



NATURAL MOISTURE CONTENT	**51**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**45**	**%**
PLASTIC LIMIT	**22**	**%**
PLASTICITY INDEX	**23**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P

Date: 17/10/2019

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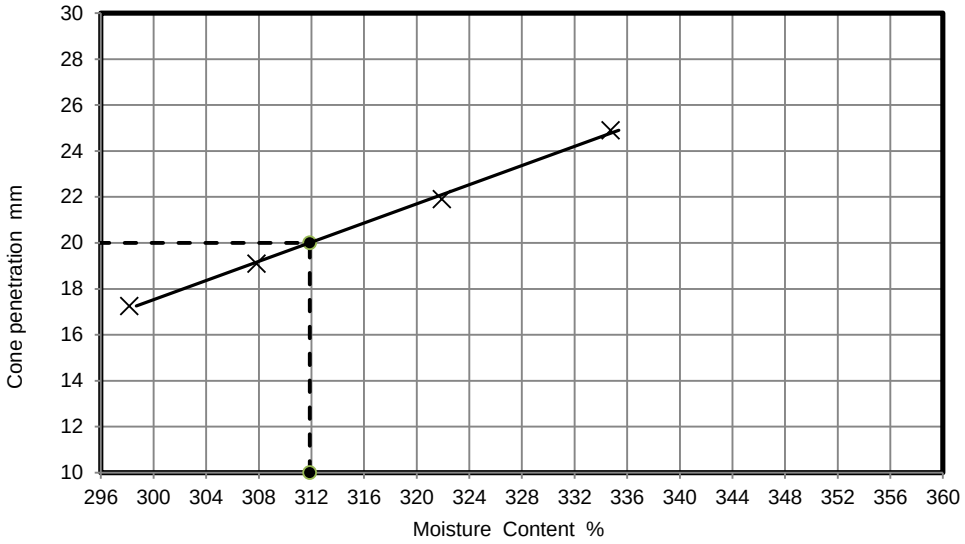
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

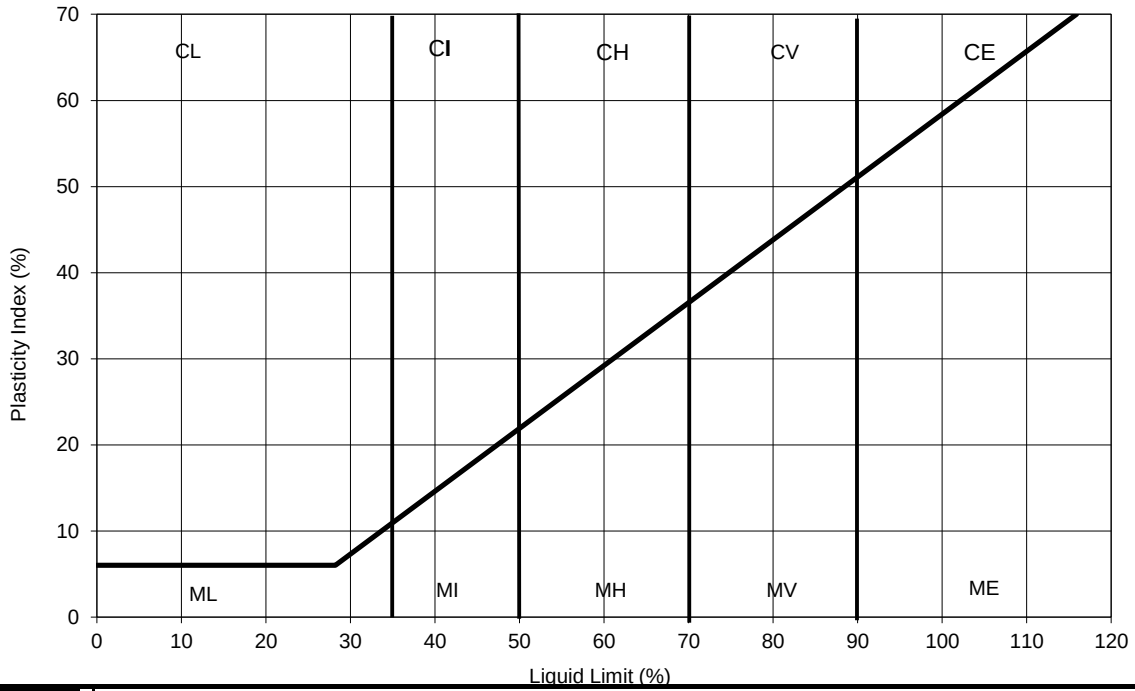
Site Name	Tilbury			Sample No.	15
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Low strength black and brown mottled PEAT with occasional decayed wood			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019
				Job No.	27216
				Borehole/Pit No.	CP06



NATURAL MOISTURE CONTENT	**310**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**312**	**%**
PLASTIC LIMIT	**215**	**%**
PLASTICITY INDEX	**97**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

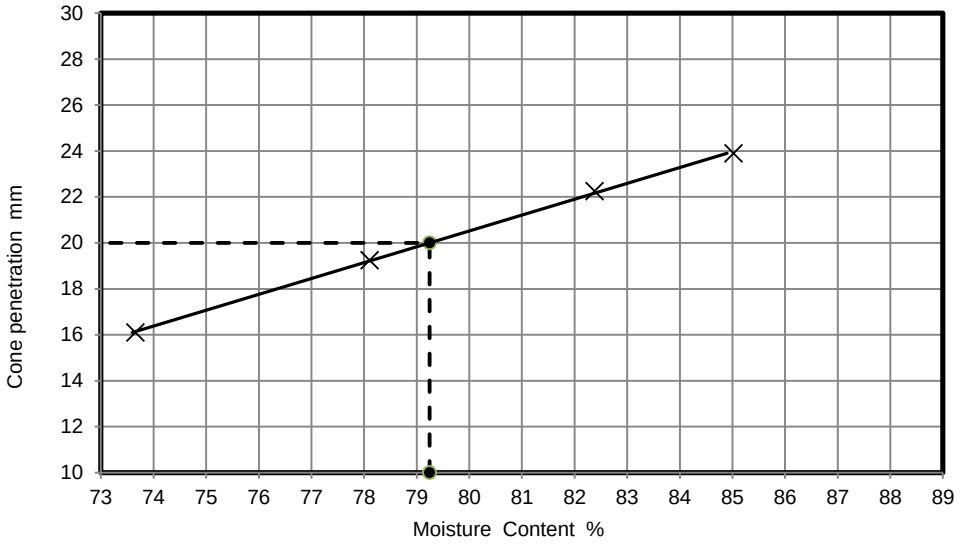
2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	16
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength grey mottled brown silty CLAY with occasional brown stains, deacyed wood fragments and pockets of light grey fine sand			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	14/10/2019

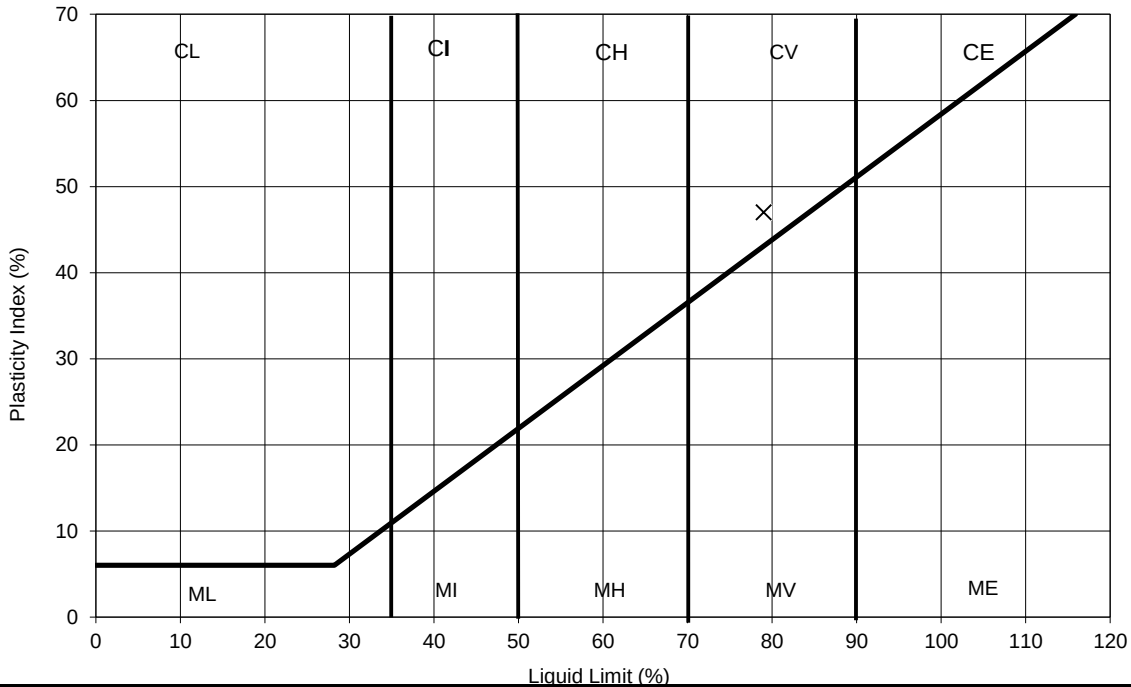
Job No.	27216
Borehole/Pit No.	CP07



NATURAL MOISTURE CONTENT	**62**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**79**	**%**
PLASTIC LIMIT	**32**	**%**
PLASTICITY INDEX	**47**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

Checked and Approved

Initials: J.P
Date: 17/10/2019

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2519

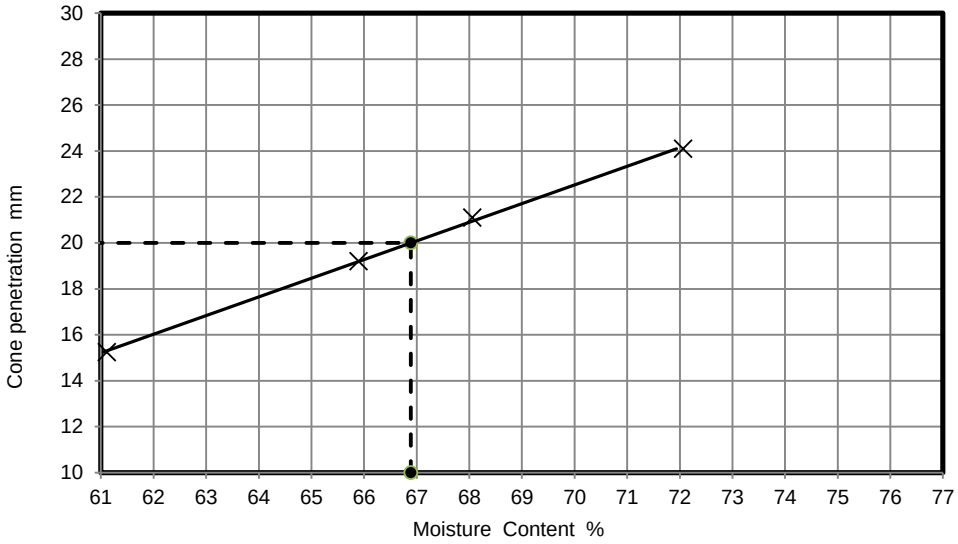
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	17
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey mottled dark grey slightly fine sandy slightly peaty silty CLAY			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

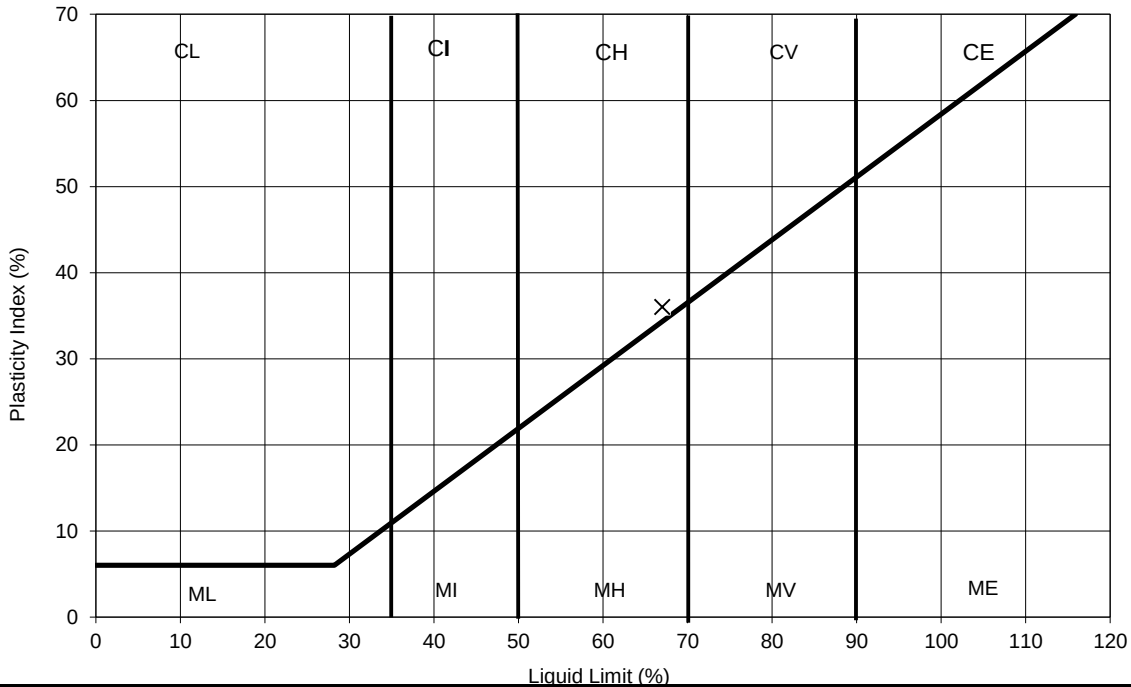
Borehole/Pit No. CP07



NATURAL MOISTURE CONTENT	**70**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**67**	**%**
PLASTIC LIMIT	**31**	**%**
PLASTICITY INDEX	**36**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

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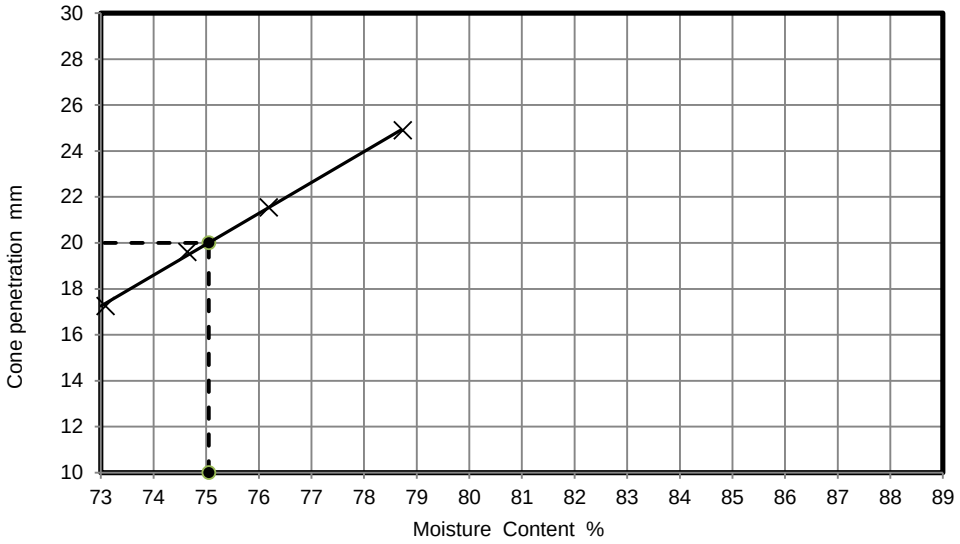
LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Site Name	Tilbury			Sample No.	18
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Extremely low strength grey slightly fine sandy silty CLAY			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
				Project Started	01/10/2019
				Date Tested	15/10/2019

Job No. 27216

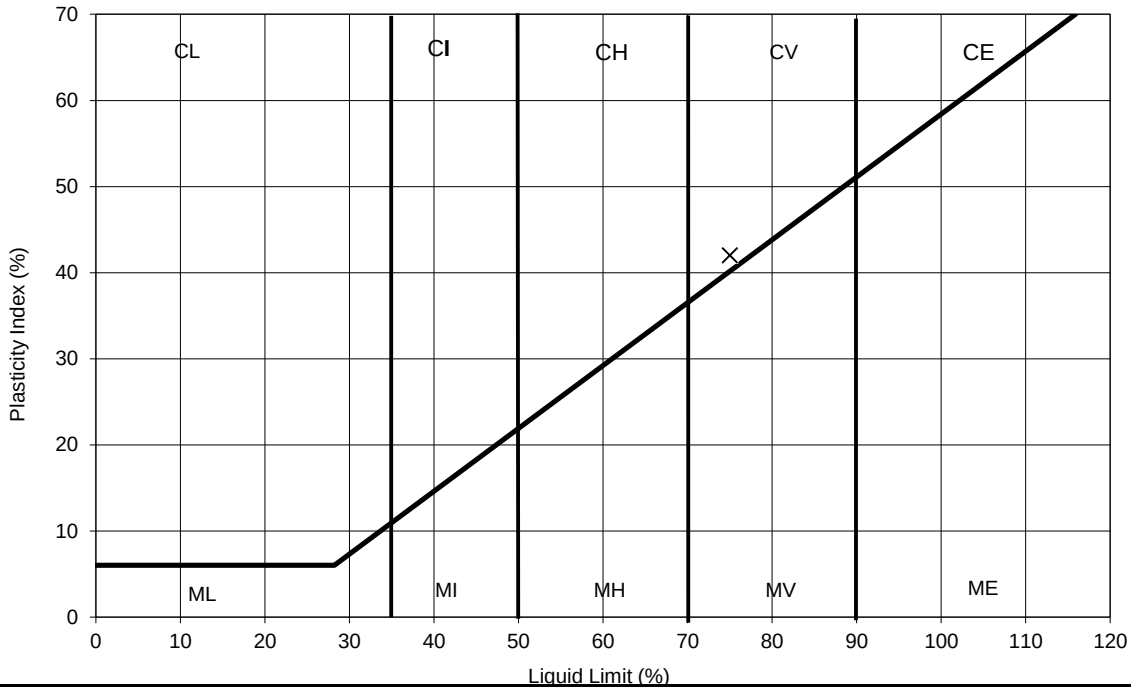
Borehole/Pit No. CP07



NATURAL MOISTURE CONTENT	**75**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**75**	**%**
PLASTIC LIMIT	**33**	**%**
PLASTICITY INDEX	**42**	**%**

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying method

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Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
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UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

Job No.	Project Name	Programme	
27216	Tilbury	Samples received	30/09/2019
		Schedule received	27/09/2019
Project No.	Client	Project started	01/10/2019
4593	TerraConsult South	Testing Started	15/10/2019

Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type		%	%	%	%	%	
CP01	1	1.50	1.95	U	Greyish brown slightly mottled dark orangish brown silty CLAY with traces of fine rootlets and selenite crystals	60	100	79	32	47	
CP02	2	1.50	1.95	U	Light orangish brown slightly mottled grey silty CLAY	58	100	72	30	42	
CP02	3	3.50	3.95	U	Extremely low strength grey slightly peaty silty CLAY with occasional decayed wood fragments	87	100	77	30	47	
CP02	4	6.00	6.45	U	Extremely low strength black and dark brown mottled PEAT with occasional wood fragments	380	100	473	335	138	
CP03	5	1.50	1.95	U	Very low strength dark brown PEAT with numerous wood fragments becoming at 1.55m bluish grey slightly peaty silty CLAY with occasional pockets of peat	127	100	150	50	100	
CP03	6	6.00	6.45	U	Medium strength black and brown PEAT with occasional decayed wood fragments	421	100	508	400	108	
CP04	7	1.50	1.95	U	Low strength grey slightly peaty silty CLAY with occasional brown stains and decayed wood fragments	59	100	77	33	44	
CP04	8	3.50	3.95	U	Extremely low strength grey slightly peaty silty CLAY with occasional black flecks	99	100	87	34	53	
CP04	9	6.00	6.45	U	Low strength black mottled brown PEAT with occasional wood fragments	469	100	679	429	250	
CP05	10	1.50	1.95	U	Very low strength brownish grey and grey mottled slightly peaty silty CLAY with traces of decayed wood, occasional roots and carbonaceous deposits	62	100	71	28	43	
CP05	11	3.50	3.95	U	Extremely low strength grey slightly mottled brown slightly peaty silty CLAY with occasional decayed wood fragments	59	100	70	28	42	
CP05	12	6.00	6.45	U	Medium strength black, brown and light brown mottled decayed wood PEAT	341	100	495	384	111	

Test Methods: BS1377: Part 2: 1990:
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3, 4.4 and 5.0

Test Report by K4 SOILS LABORATORY
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UKAS TESTING 2519

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Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

Job No.	Project Name	Programme	
27216	Tilbury	Samples received	30/09/2019
		Schedule received	27/09/2019
Project No.	Client	Project started	01/10/2019
4593	TerraConsult South	Testing Started	15/10/2019

Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type		%	%	%	%	%	
CP06	13	1.50	1.95	U	Very low strength grey with numerous brown stains silty CLAY with occasional decayed wood fragments	51	100	70	26	44	
CP06	14	3.50	3.95	U	Extremely low strength grey slightly fine sandy slightly peaty silty CLAY with rare decayed wood fragments	51	100	45	22	23	
CP06	15	6.00	6.45	U	Low strength black and brown mottled PEAT with occasional decayed wood	310	100	312	215	97	
CP07	16	1.50	1.95	U	Very low strength grey mottled brown silty CLAY with occasional brown stains, deacyed wood fragments and pockets of light grey fine sand	62	100	79	32	47	
CP07	17	3.50	3.95	U	Extremely low strength grey mottled dark grey slightly fine sandy slightly peaty silty CLAY	70	100	67	31	36	
CP07	18	6.00	6.45	U	Extremely low strength grey slightly fine sandy silty CLAY	75	100	75	33	42	

Test Methods: BS1377: Part 2: 1990:
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3, 4.4 and 5.0

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Date: 17/10/2019

UKAS TESTING 2519

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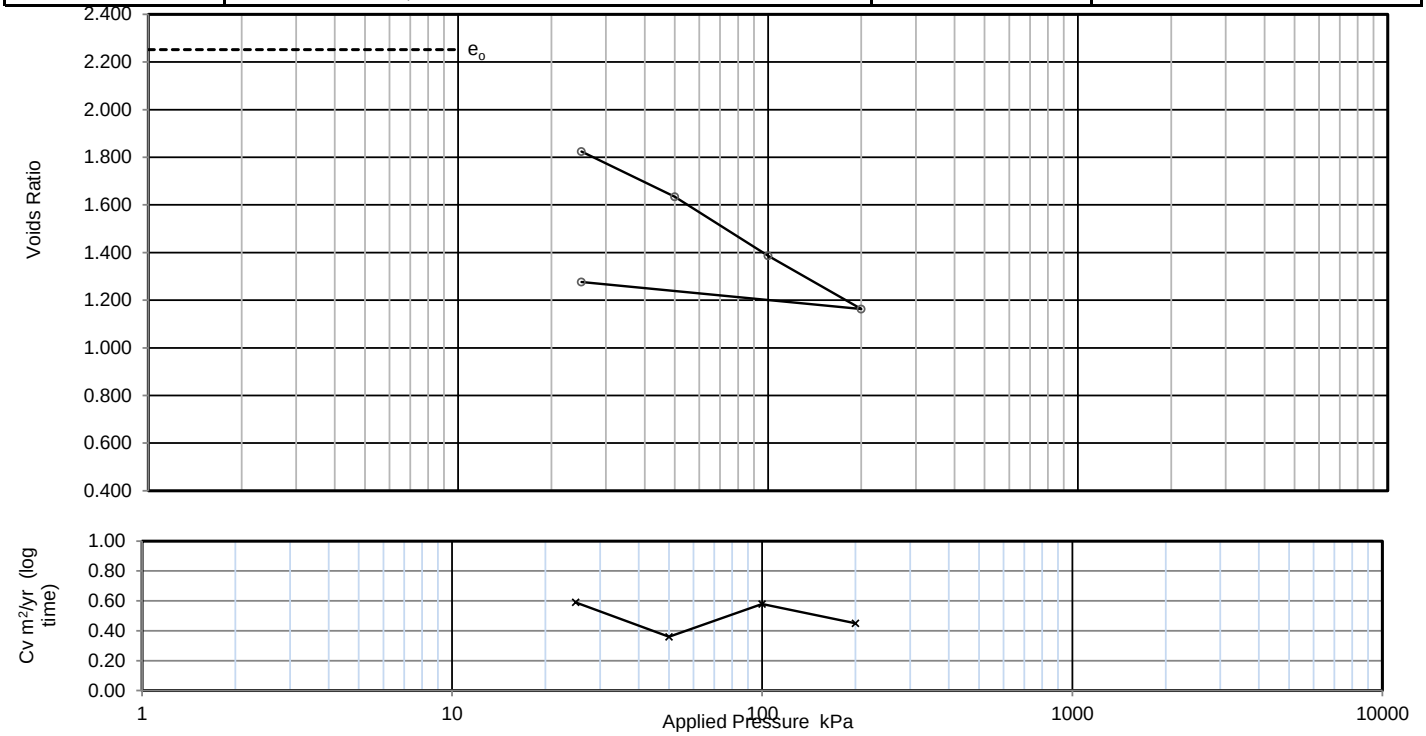
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP02	
			Sample No.	3	
Site Name	Tilbury		Depth Top	3.50	m
Project ID	4593	Client TerraConsult South	Depth Base	3.95	m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional decayed wood fragments		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started	02/10/2019	



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	2.252	-	-	-
25	1.824	5.7	0.59	0.68
50	1.634	2.7	0.36	0.43
100	1.386	1.9	0.58	0.56
200	1.163	0.94	0.45	0.58
25	1.277	0.3		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 2.50 Mg/m3

Specimen details	Initial	Final	
Diameter	75.05	-	mm
Height	19.90	13.93	mm
Moisture Content	93.0	58.1	%
Bulk density	1.48	1.74	Mg/m3
Dry density	0.77	1.10	Mg/m3
Voids Ratio	2.252	1.277	
Saturation	103	114	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
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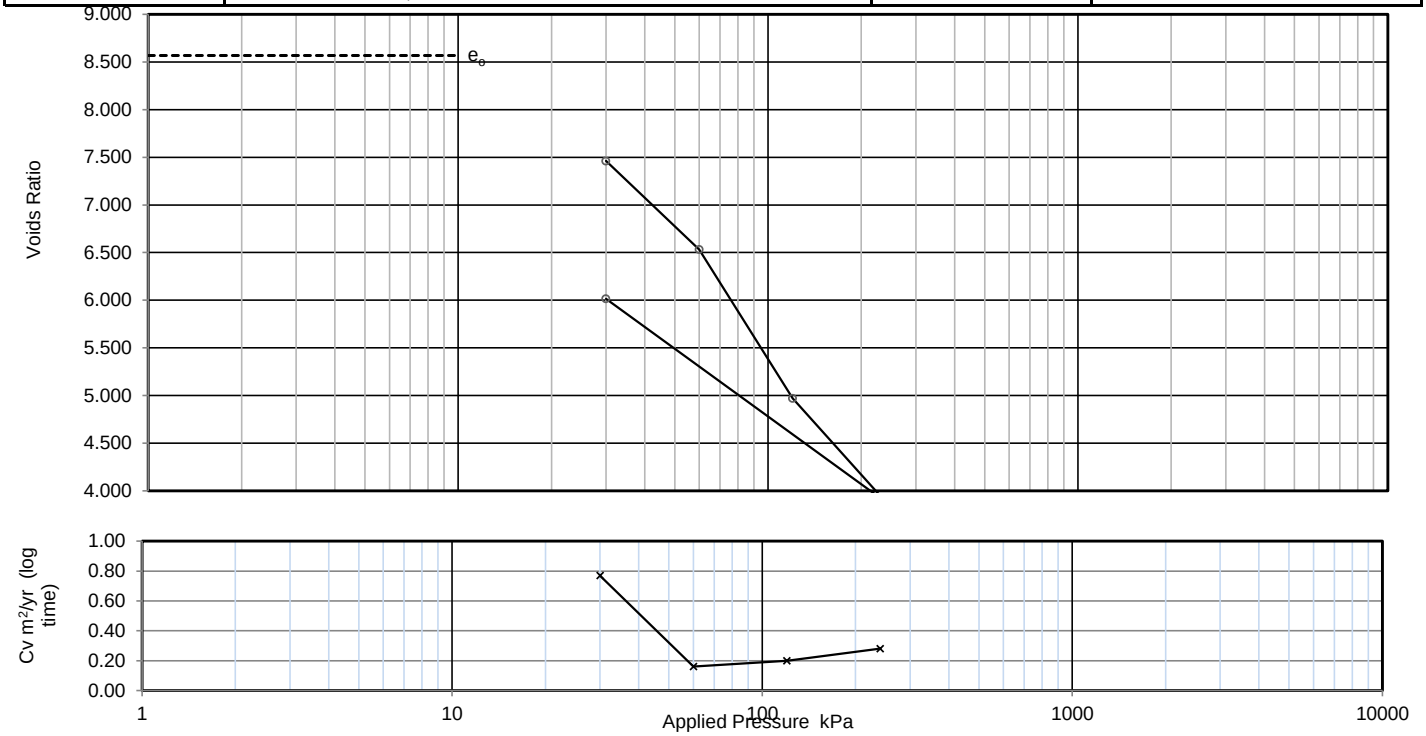
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP03	
			Sample No.	6	
Site Name	Tilbury		Depth Top	6.00	m
Project ID	4593	Client TerraConsult South	Depth Base	6.45	m
Soil Description	Medium strength black and brown PEAT with occasional decayed wood fragments		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started	02/10/2019	



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	8.568	-	-	-
30	7.462	4.1	0.77	18
60	6.533	3.7	0.16	2.5
120	4.971	3.5	0.2	1
240	3.883	1.5	0.28	0.55
30	6.015	0.83		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 1.75 Mg/m3

Specimen details	Initial	Final	
Diameter	74.90	-	mm
Height	18.70	13.71	mm
Moisture Content	441.4	316.6	%
Bulk density	0.99	1.04	Mg/m3
Dry density	0.18	0.25	Mg/m3
Voids Ratio	8.568	6.015	
Saturation	90	92	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

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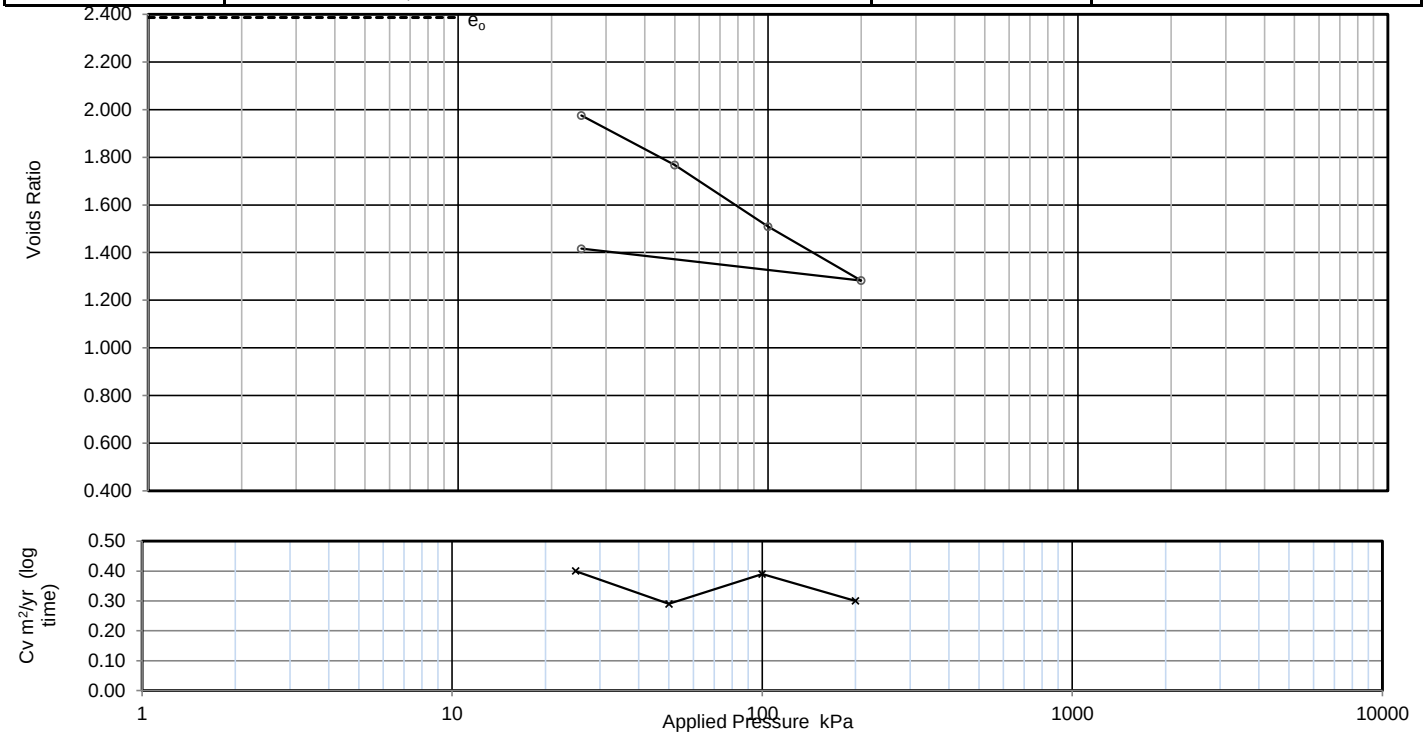
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP04	
			Sample No.	8	
Site Name	Tilbury		Depth Top	3.50	m
Project ID	4593	Client TerraConsult South	Depth Base	3.95	m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional black flecks		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started		



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	2.387	-	-	-
25	1.975	5.3	0.4	0.36
50	1.767	2.8	0.29	0.4
100	1.509	1.9	0.39	0.42
200	1.282	0.9	0.3	0.41
25	1.416	0.34		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 2.50 Mg/m3

Specimen details	Initial	Final	
Diameter	75.05	-	mm
Height	18.90	13.48	mm
Moisture Content	97.2	59.6	%
Bulk density	1.46	1.65	Mg/m3
Dry density	0.74	1.03	Mg/m3
Voids Ratio	2.387	1.416	
Saturation	102	105	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

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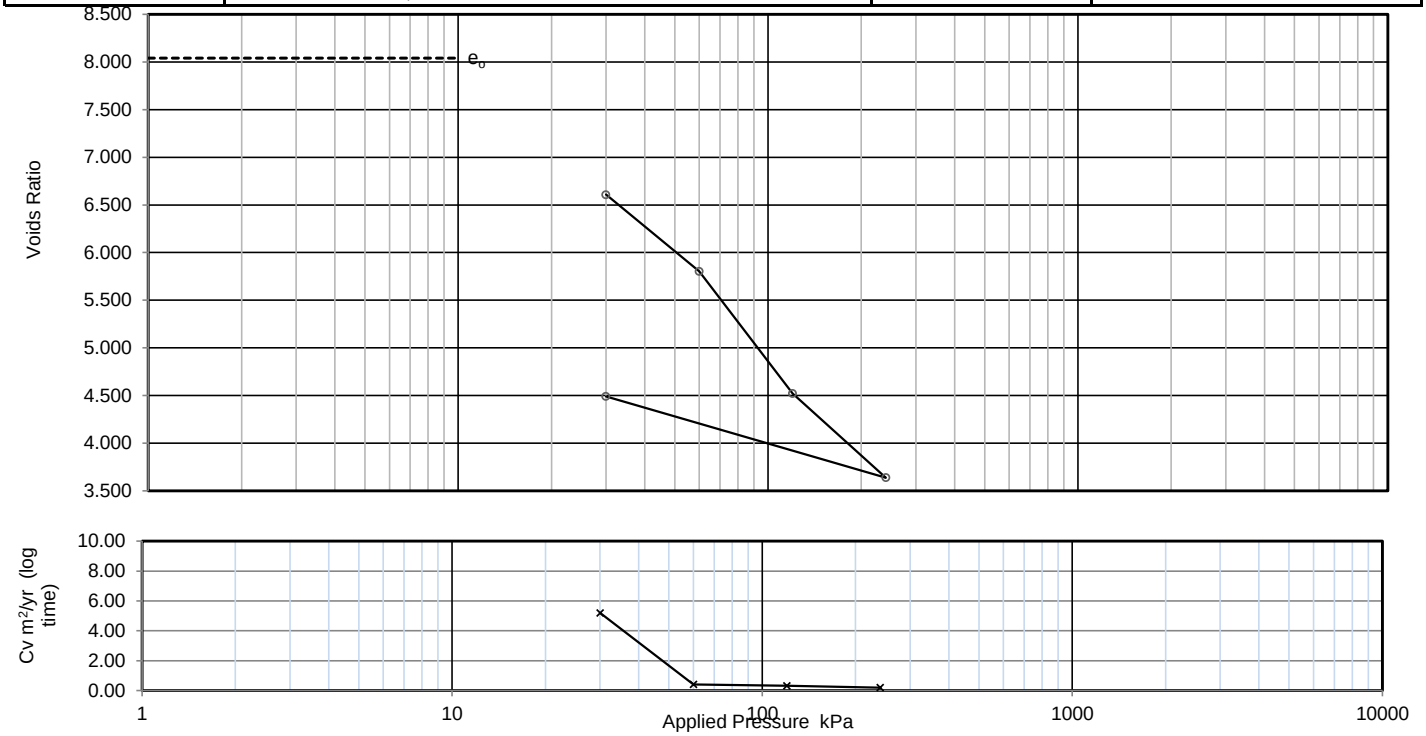
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP05	
			Sample No.	12	
Site Name	Tilbury		Depth Top	6.00	m
Project ID	4593	Client TerraConsult South	Depth Base	6.45	m
Soil Description	Medium strength black, brown and light brown mottled decayed wood PEAT		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started	02/10/2019	



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	8.041	-	-	-
30	6.608	5.7	5.2	17
60	5.803	3.5	0.41	2.1
120	4.520	3.1	0.32	1.1
240	3.638	1.3	0.19	0.54
30	4.491	0.88		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 1.75 Mg/m3

Specimen details	Initial	Final	
Diameter	75.05	-	mm
Height	19.00	11.54	mm
Moisture Content	328.6	270.6	%
Bulk density	0.83	1.18	Mg/m3
Dry density	0.19	0.32	Mg/m3
Voids Ratio	8.041	4.491	
Saturation	72	105	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

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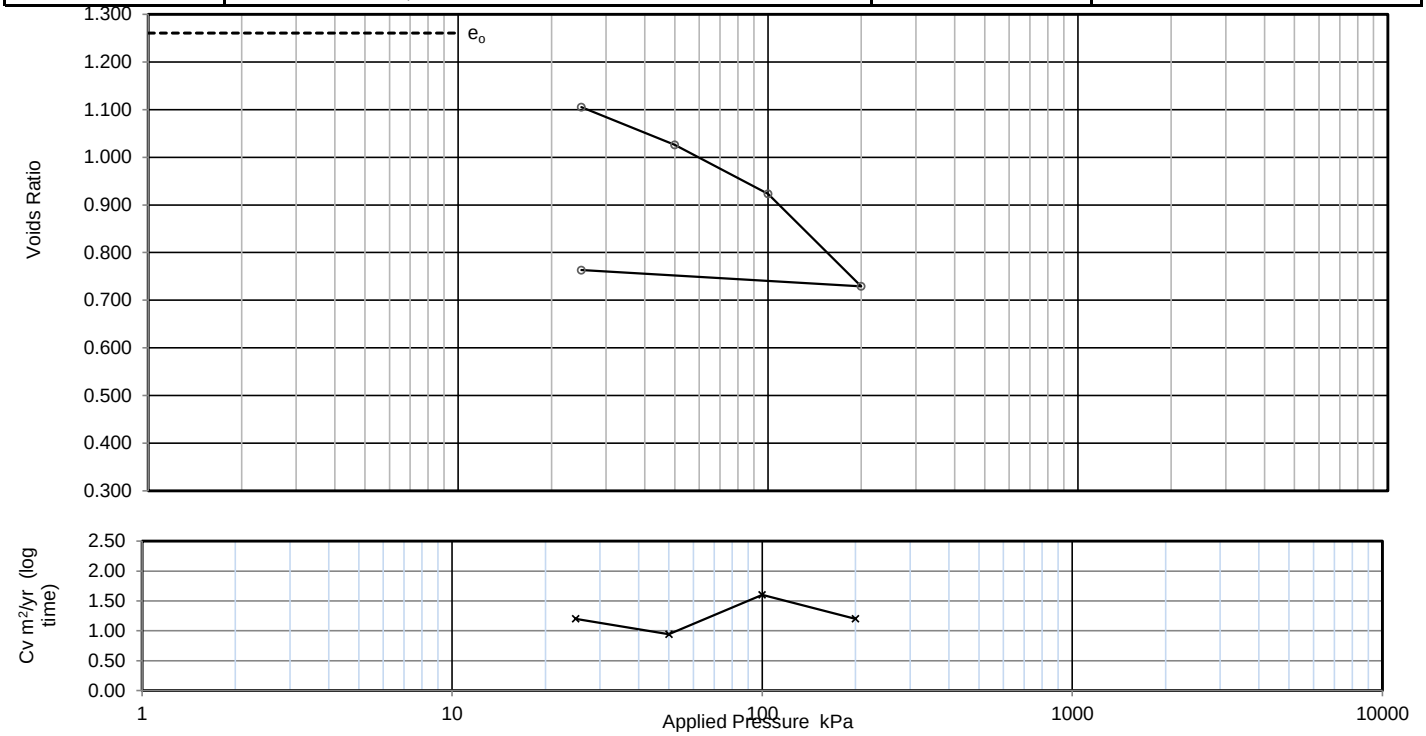
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP06	
			Sample No.	14	
Site Name	Tilbury		Depth Top	3.50	m
Project ID	4593	Client TerraConsult South	Depth Base	3.95	m
Soil Description	Extremely low strength grey slightly fine sandy slightly peaty silty CLAY with rare decayed wood fragments		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started	02/10/2019	



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	1.261	-	-	-
25	1.105	3	1.2	1.3
50	1.026	1.5	0.94	1.5
100	0.923	1	1.6	1.4
200	0.729	1	1.2	2.2
25	0.763	0.11		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 2.60 Mg/m3

Specimen details	Initial	Final	
Diameter	74.95	-	mm
Height	18.84	14.69	mm
Moisture Content	49.9	34.0	%
Bulk density	1.72	1.98	Mg/m3
Dry density	1.15	1.47	Mg/m3
Voids Ratio	1.261	0.763	
Saturation	103	116	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

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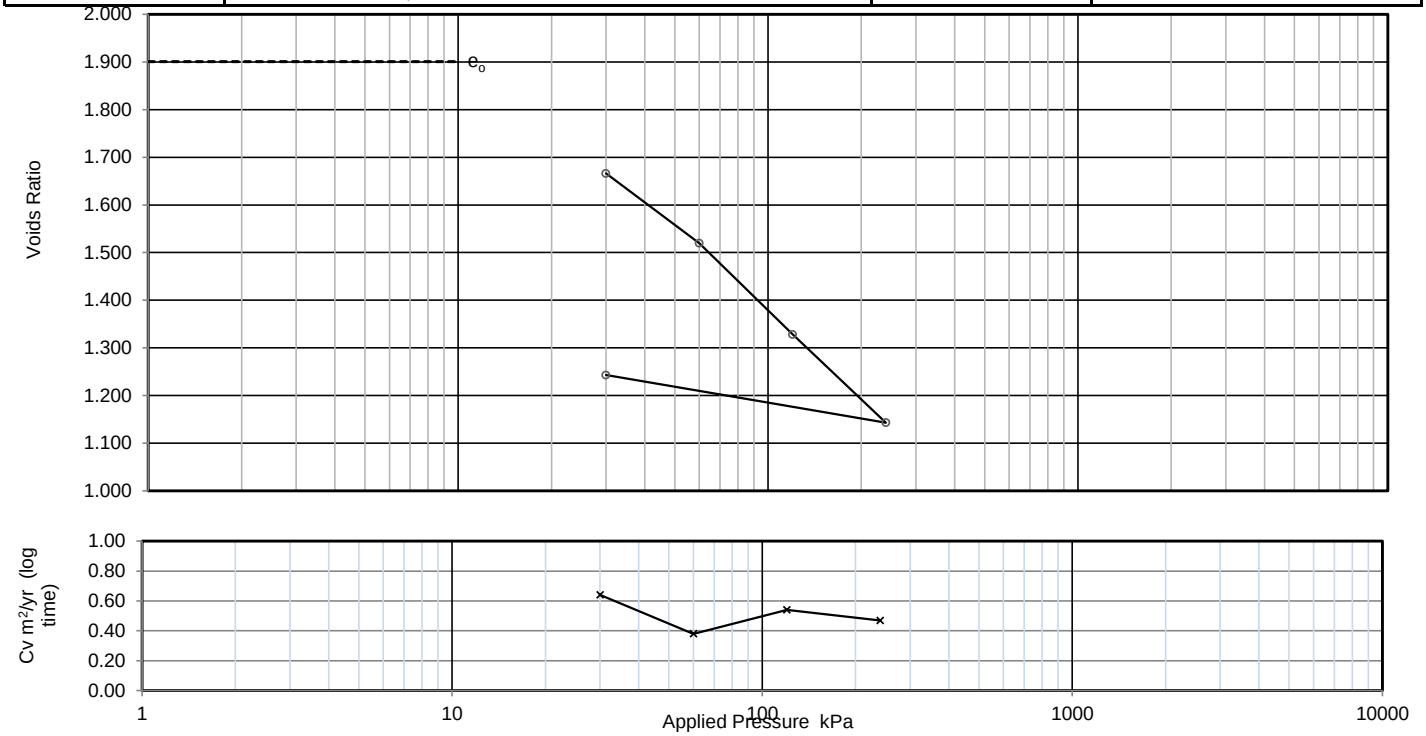
ONE DIMENSIONAL CONSOLIDATION TEST

			Job Ref	27216	
			Borehole/Pit No.	CP07	
			Sample No.	18	
Site Name	Tilbury		Depth Top	6.00	m
Project ID	4593	Client TerraConsult South	Depth Base	6.45	m
Soil Description	Extremely low strength grey slightly fine sandy silty CLAY		Sample Type	U	
			Sample Received	30/09/2019	
			Schedule received	27/09/2019	
			Project Started	01/10/2019	
Test Method	BS1377:Part 5: 1990, clause 3		Date Test started	02/10/2019	



Applied Pressure	Voids ratio	Mv	Cv (t50, log)	Cv (t90, root)
kPa		m2/MN	m2/yr	m2/yr
2.0	1.901	-	-	-
30	1.666	2.9	0.64	0.77
60	1.520	1.8	0.38	0.46
120	1.328	1.3	0.54	0.62
240	1.143	0.66	0.47	0.61
30	1.243	0.22		

Preparation

Orientation wthin sample: Vertical

Particle density: assumed 2.55 Mg/m3

Specimen details	Initial	Final	
Diameter	75.05	-	mm
Height	18.90	14.61	mm
Moisture Content	73.8	51.3	%
Bulk density	1.53	1.72	Mg/m3
Dry density	0.88	1.14	Mg/m3
Voids Ratio	1.901	1.243	
Saturation	99	105	%
Average temperature for test	22.0		oC
Swelling Pressure			kPa
Settlement on saturation			%

Remarks

Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
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Checked and Approved

Initials K.P

Date: 17/10/2019

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

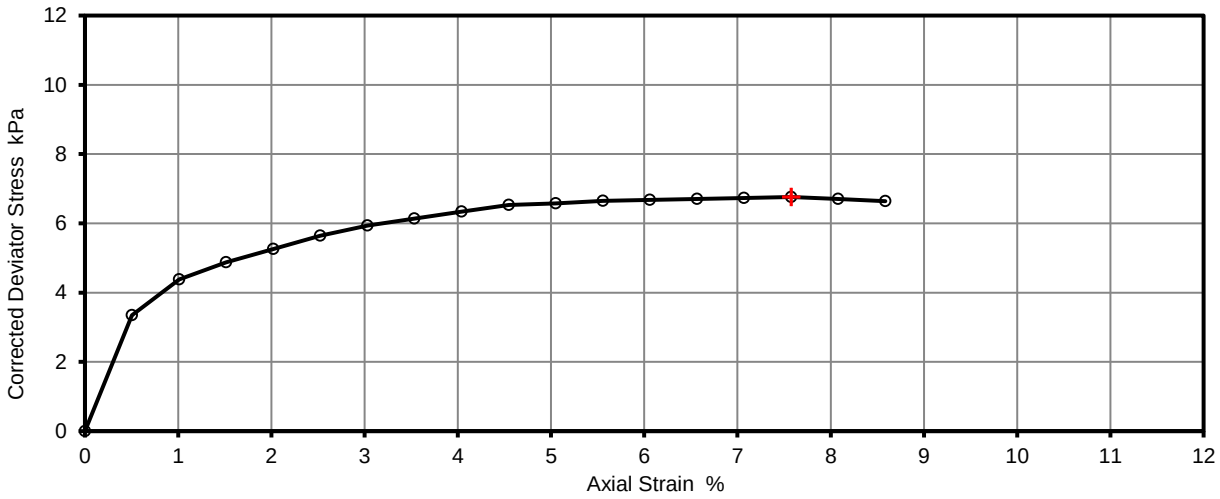
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP02
Site Name	Tilbury			Sample No.	3
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

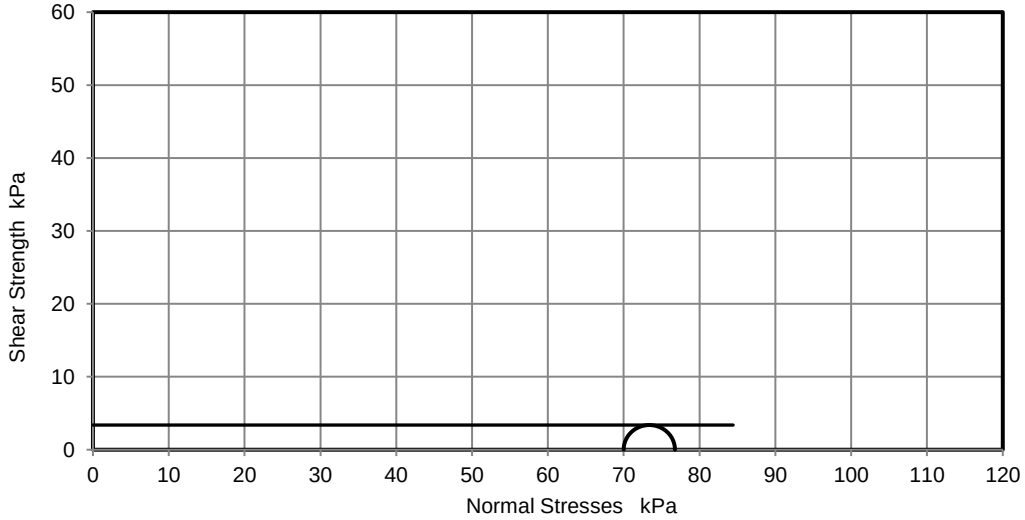
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.56	Mg/m3
Moisture Content	89	%
Dry Density	0.83	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	70	kPa
Axial Strain	7.6	%
Deviator Stress, (σ1 - σ3)f	7	kPa
Undrained Shear Strength, cu	3	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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Date 17/10/2019

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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

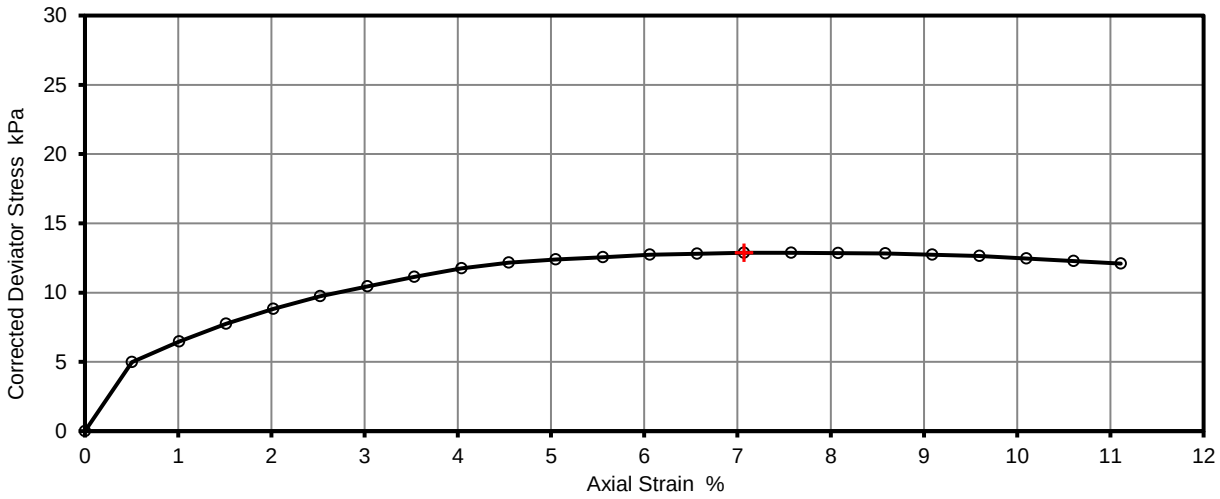
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP02
Site Name	Tilbury			Sample No.	4
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Extremely low strength black and dark brown mottled PEAT with occasional wood fragments			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

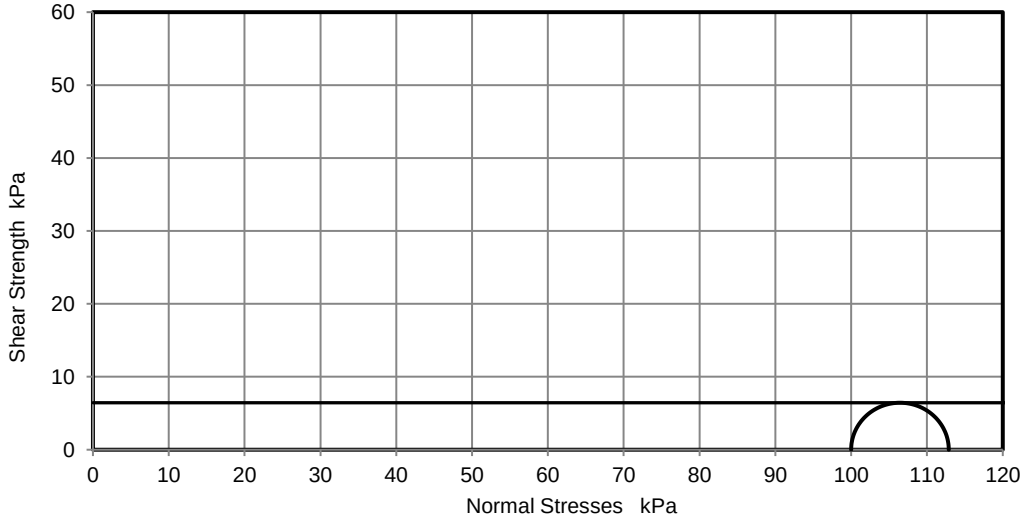
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.03	Mg/m3
Moisture Content	357	%
Dry Density	0.23	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	7.1	%
Deviator Stress, (σ1 - σ3)f	13	kPa
Undrained Shear Strength, cu	6	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



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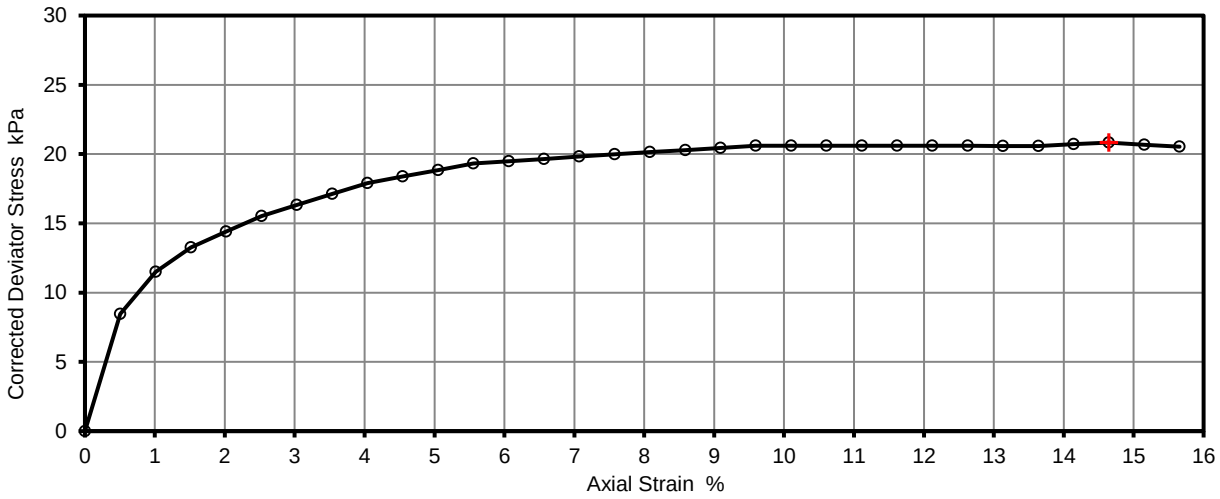
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP03
Site Name	Tilbury			Sample No.	5
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength dark brown PEAT with numerous wood fragments becoming at 1.55m bluish grey slightly peaty silty CLAY with occasional pockets of peat			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

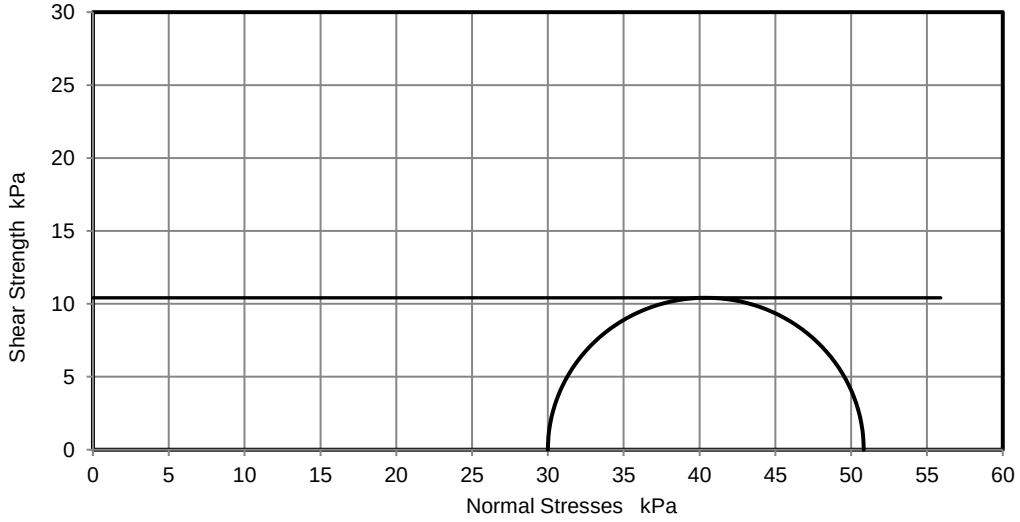
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.37	Mg/m3
Moisture Content	81	%
Dry Density	0.76	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	15	%
Deviator Stress, (σ1 - σ3)f	21	kPa
Undrained Shear Strength, cu	10	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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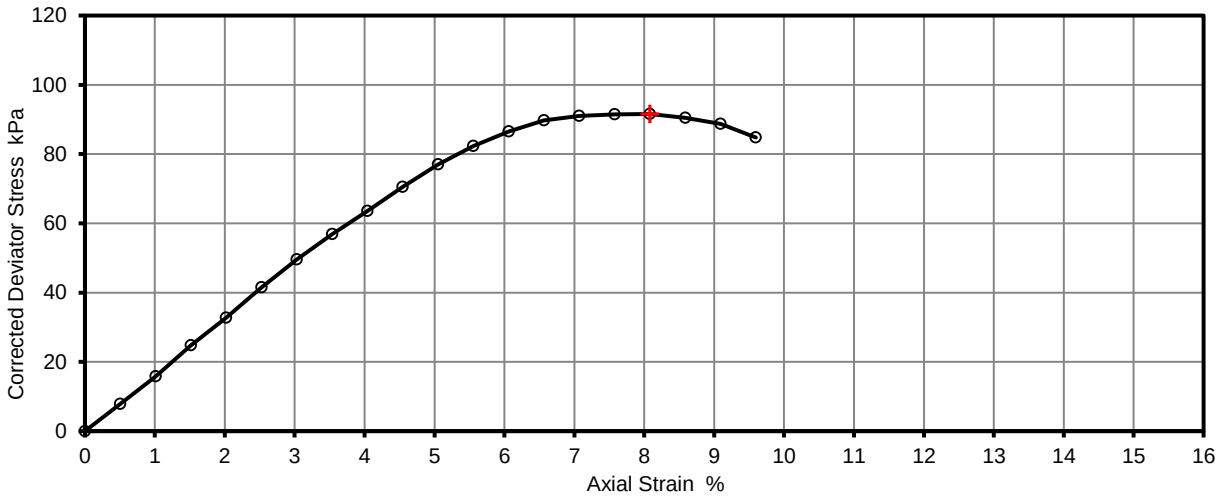
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP03
Site Name	Tilbury			Sample No.	6
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Medium strength black and brown PEAT with occasional decayed wood fragments			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

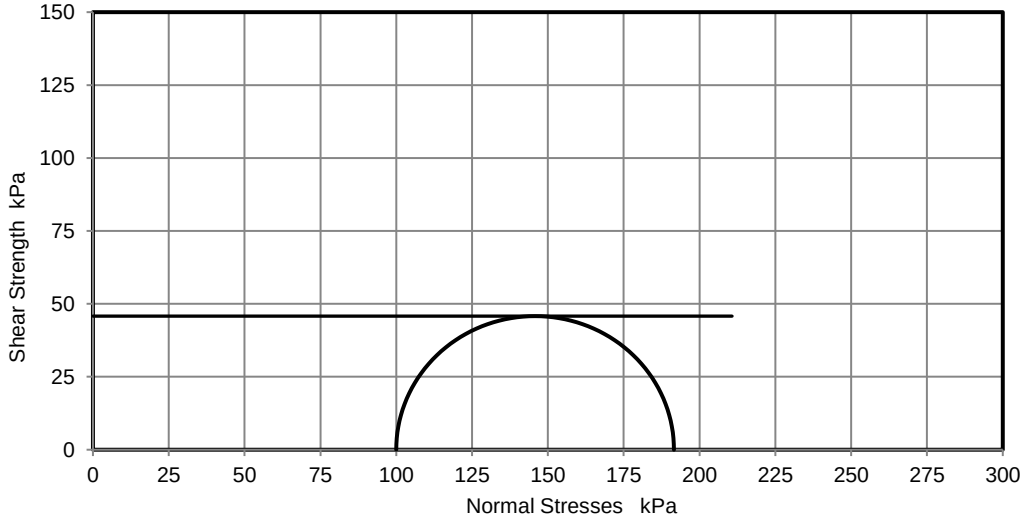
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.04	Mg/m3
Moisture Content	418	%
Dry Density	0.20	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	8.1	%
Deviator Stress, (σ1 - σ3)f	92	kPa
Undrained Shear Strength, cu	46	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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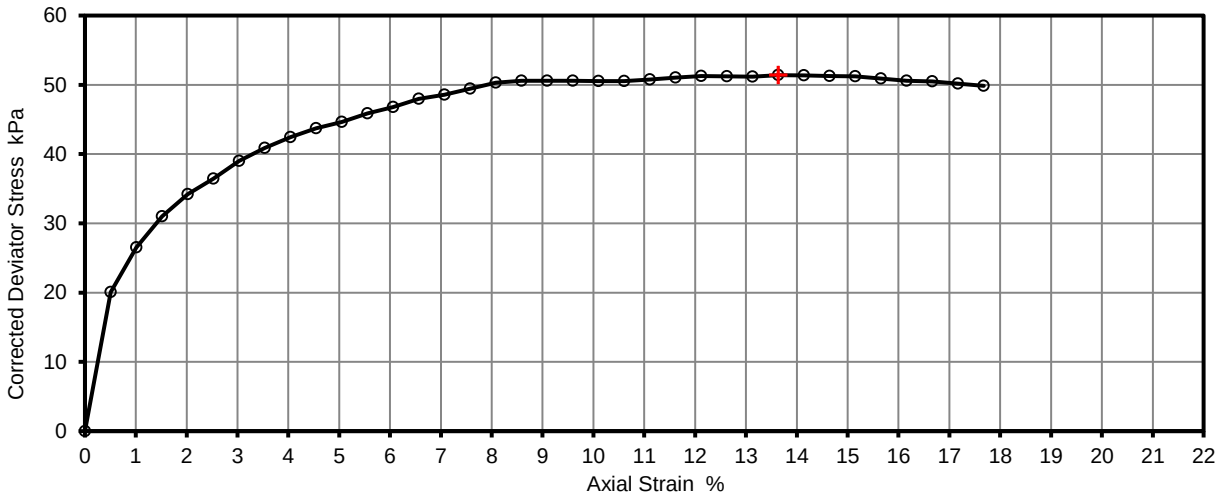
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP04
Site Name	Tilbury			Sample No.	7
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Low strength grey slightly peaty silty CLAY with occasional brown stains and decayed wood fragments			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

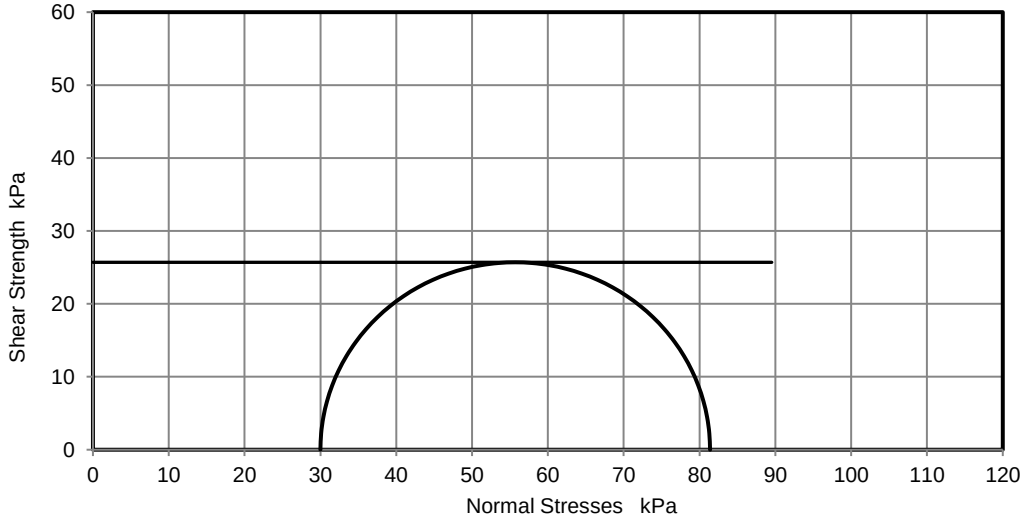
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.68	Mg/m3
Moisture Content	58	%
Dry Density	1.06	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	14	%
Deviator Stress, (σ1 - σ3)f	51	kPa
Undrained Shear Strength, cu	26	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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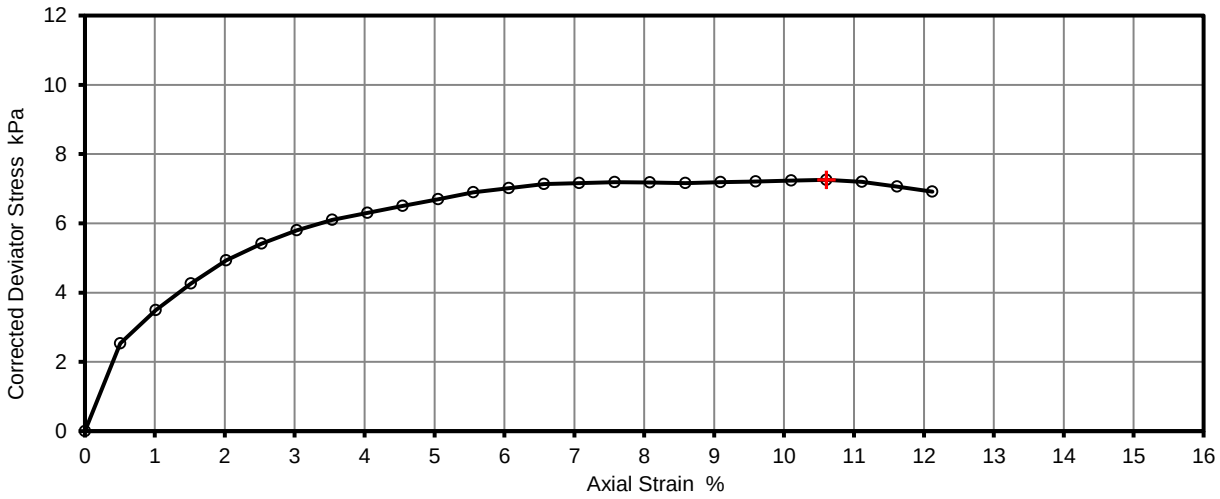
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP04
Site Name	Tilbury			Sample No.	8
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly peaty silty CLAY with occasional black flecks			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

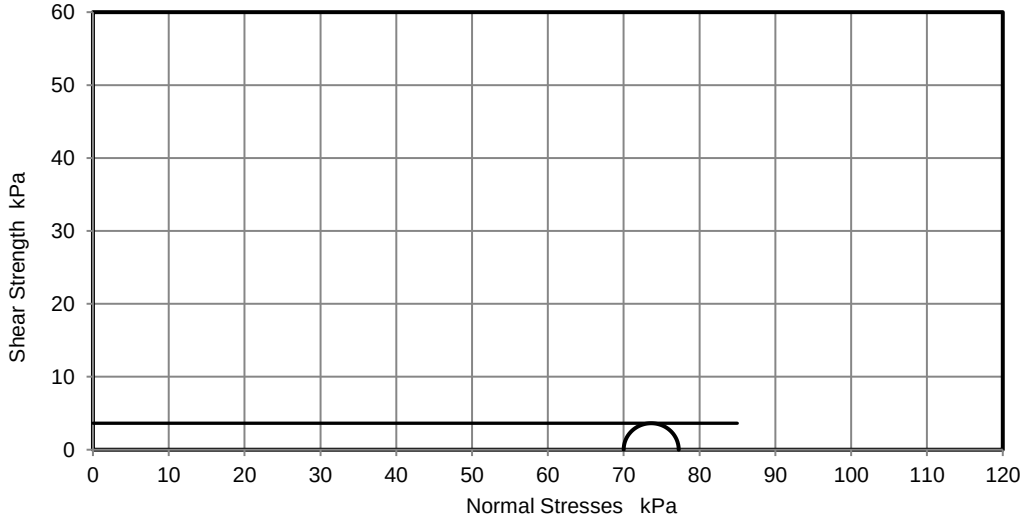
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.52	Mg/m3
Moisture Content	97	%
Dry Density	0.77	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	70	kPa
Axial Strain	11	%
Deviator Stress, (σ1 - σ3)f	7	kPa
Undrained Shear Strength, cu	4	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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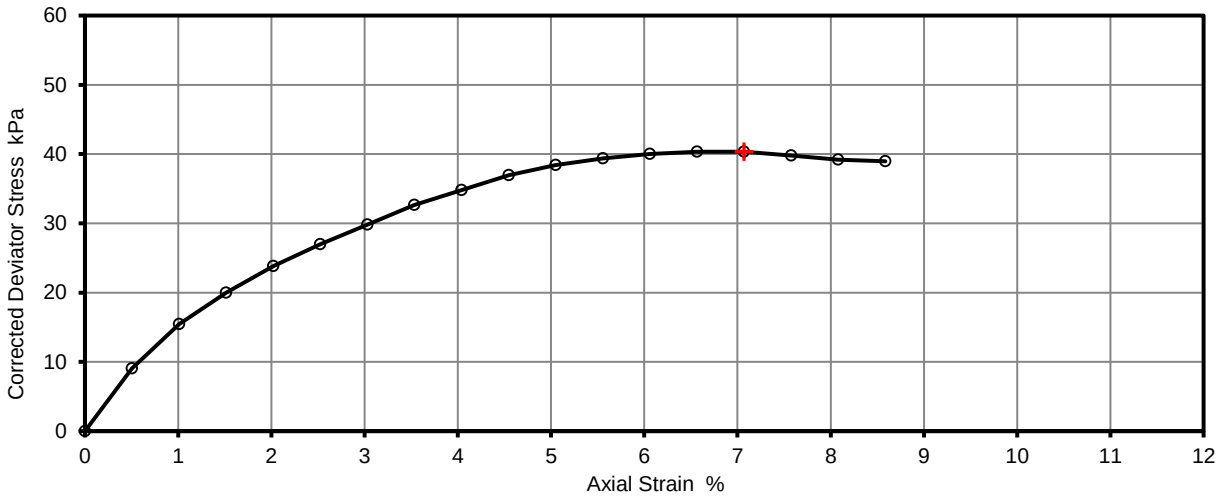
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP04
Site Name	Tilbury			Sample No.	9
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Low strength black mottled brown PEAT with occasional wood fragments			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

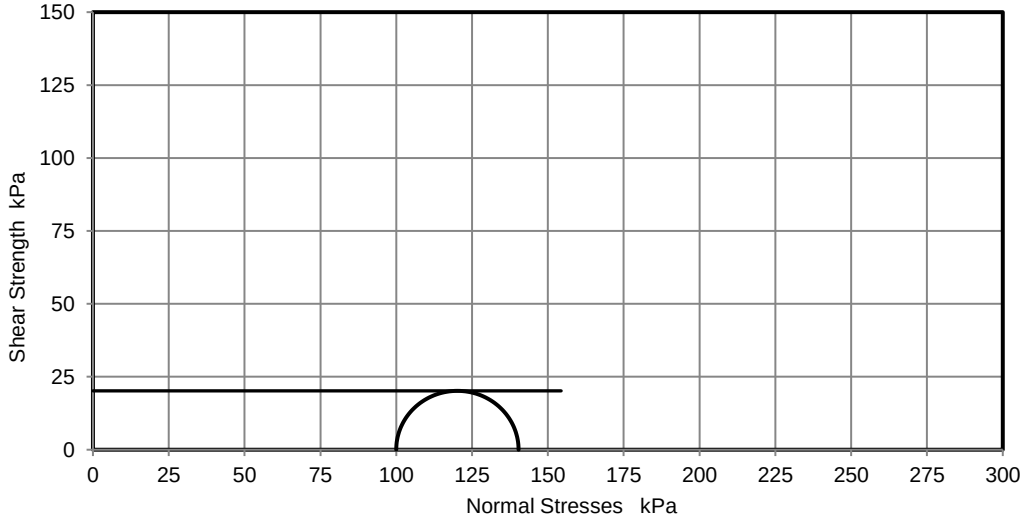
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.00	Mg/m3
Moisture Content	467	%
Dry Density	0.18	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	7.1	%
Deviator Stress, (σ1 - σ3)f	40	kPa
Undrained Shear Strength, cu	20	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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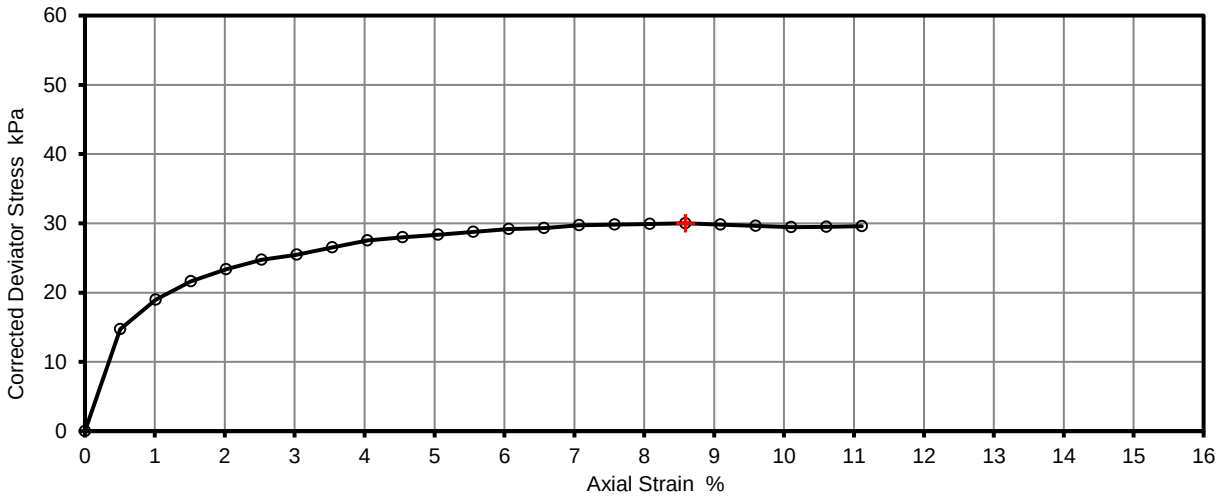
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP05
Site Name	Tilbury			Sample No.	10
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength brownish grey and grey mottled slightly peaty silty CLAY with traces of decayed wood, occasional roots and carbonaceous deposits			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

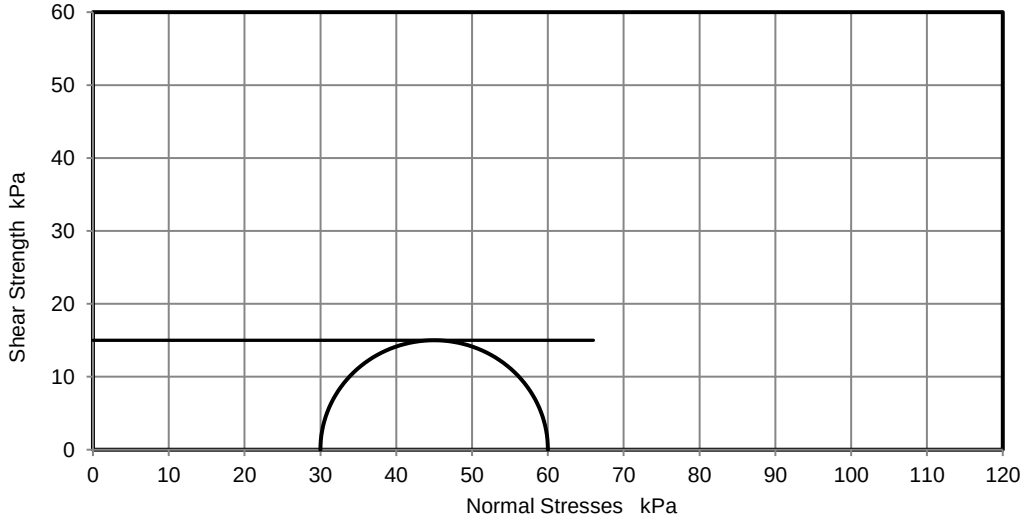
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.51	Mg/m3
Moisture Content	62	%
Dry Density	0.93	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	8.6	%
Deviator Stress, (σ1 - σ3)f	30	kPa
Undrained Shear Strength, cu	15	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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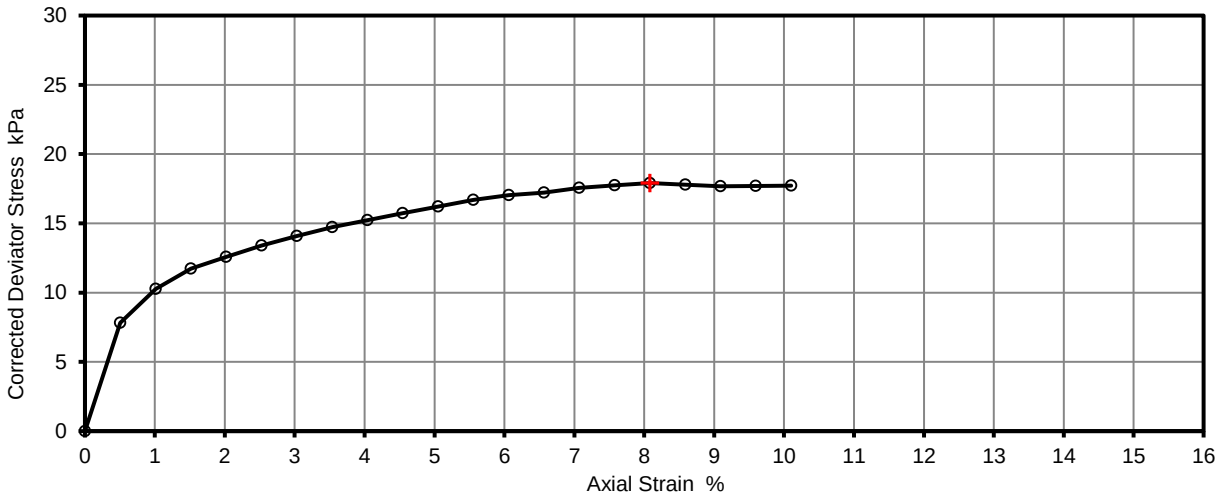
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP05
Site Name	Tilbury			Sample No.	11
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly mottled brown slightly peaty silty CLAY with occasional decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

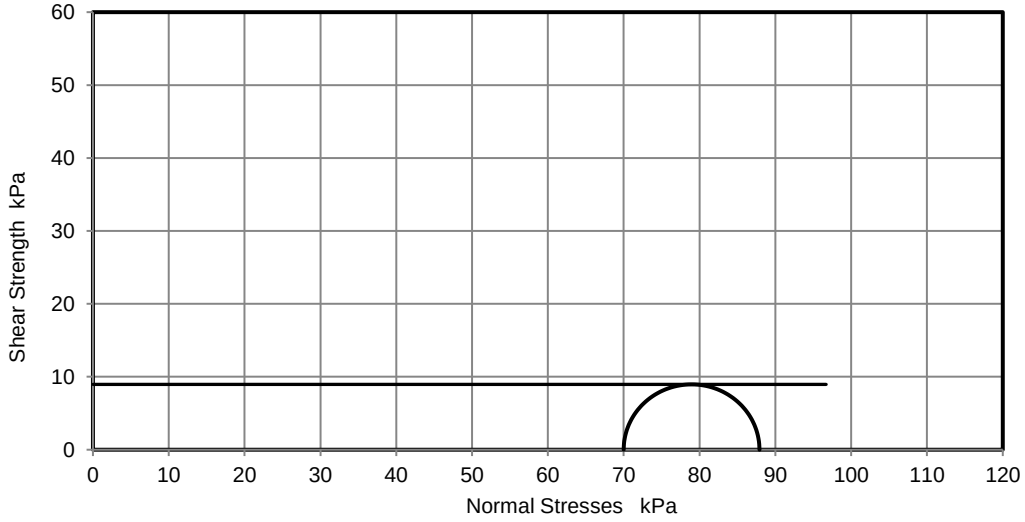
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.59	Mg/m3
Moisture Content	61	%
Dry Density	0.99	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	70	kPa
Axial Strain	8.1	%
Deviator Stress, (σ1 - σ3)f	18	kPa
Undrained Shear Strength, cu	9	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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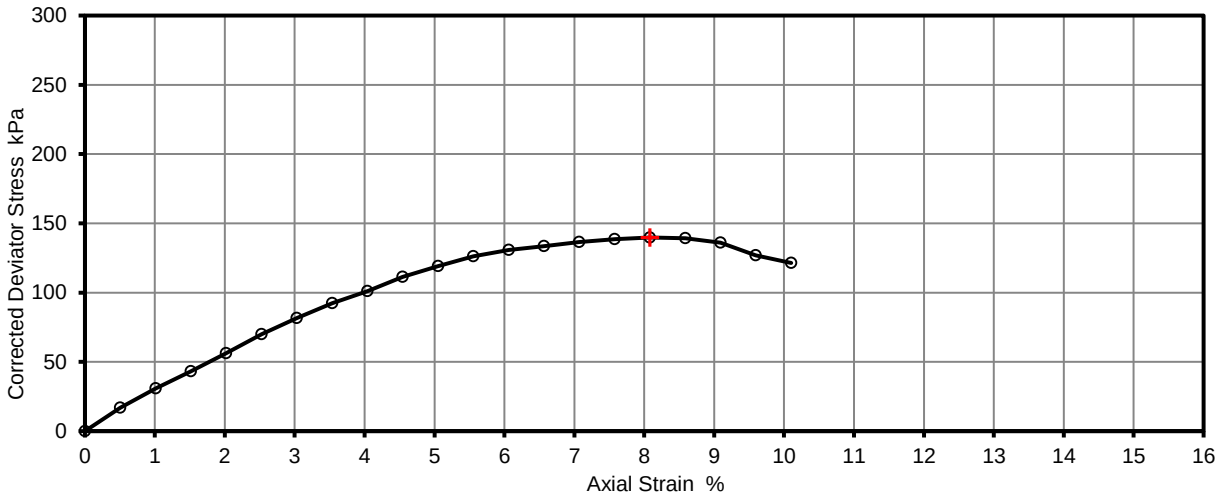
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP05
Site Name	Tilbury			Sample No.	12
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Medium strength black, brown and light brown mottled decayed wood PEAT			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

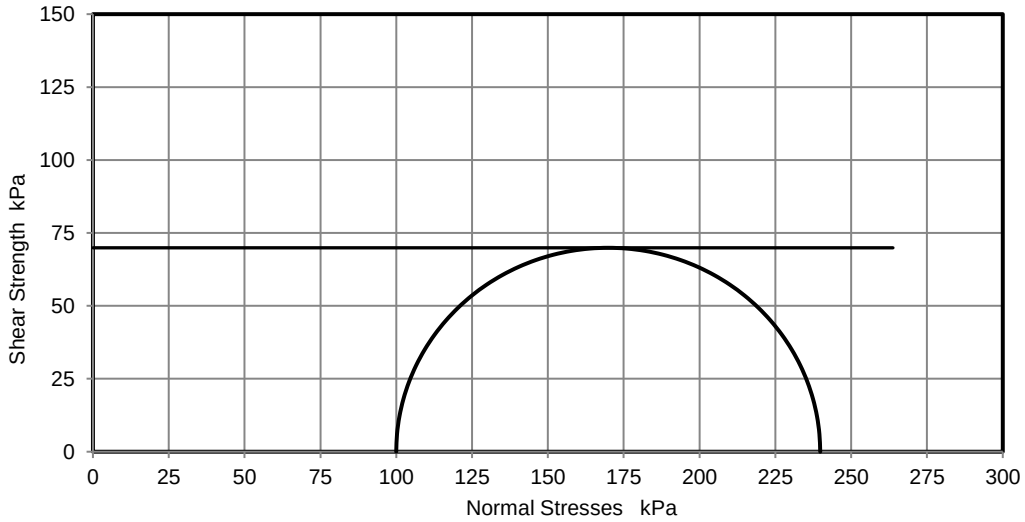
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.06	Mg/m3
Moisture Content	337	%
Dry Density	0.24	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	8.1	%
Deviator Stress, (σ1 - σ3)f	140	kPa
Undrained Shear Strength, cu	70	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



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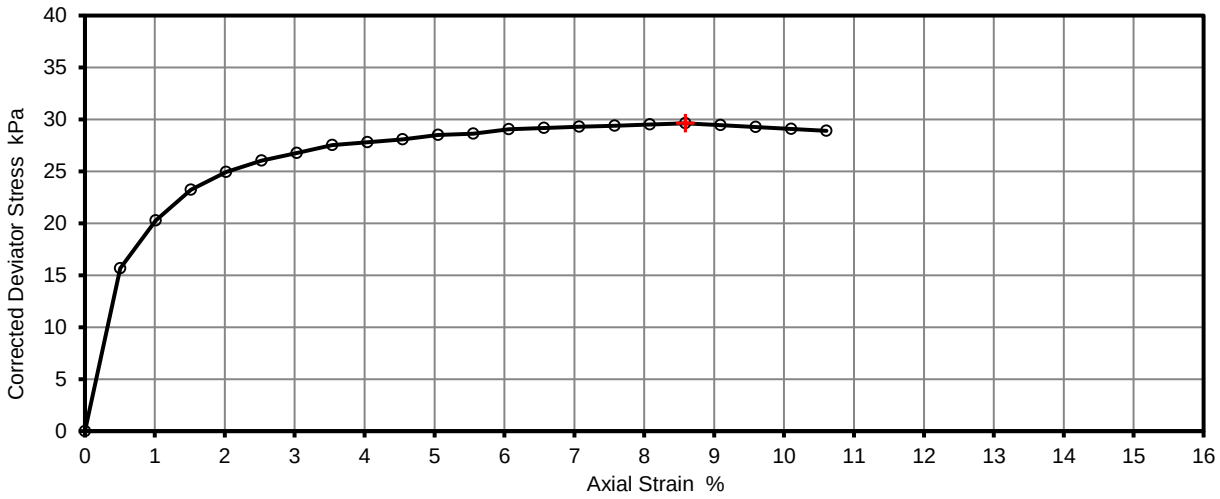
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP06
Site Name	Tilbury			Sample No.	13
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength grey with numerous brown stains silty CLAY with occasional decayed wood fragments			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

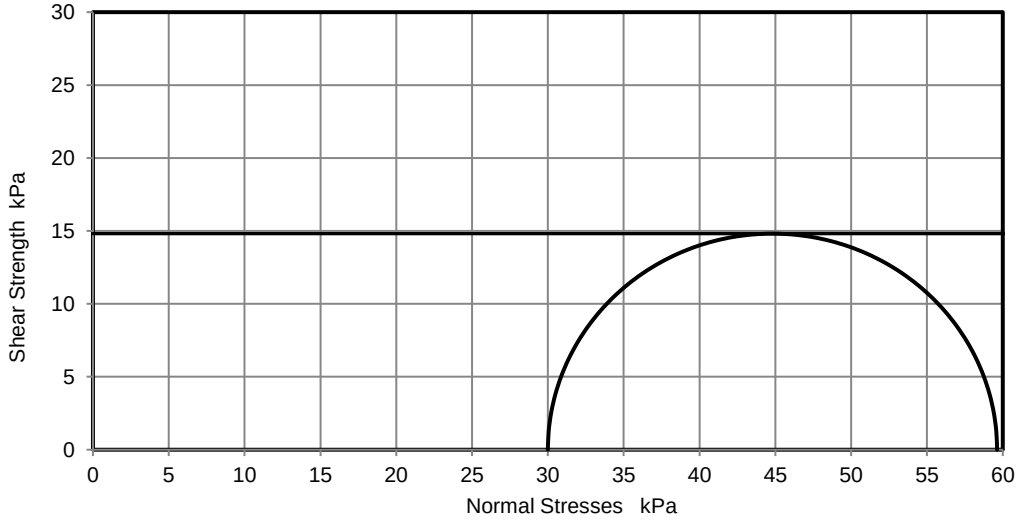
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.72	Mg/m3
Moisture Content	47	%
Dry Density	1.17	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	8.6	%
Deviator Stress, (σ1 - σ3)f	30	kPa
Undrained Shear Strength, cu	15	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Test Report by K4 SOILS LABORATORY
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Checked and Approved
Initials: J.P
Date 17/10/2019

UKAS TESTING 2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

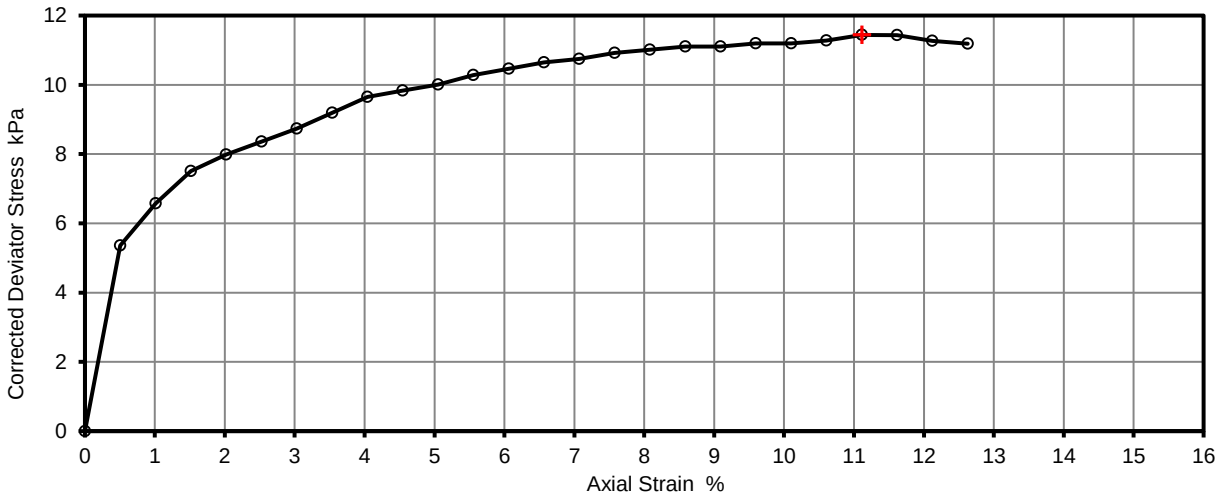
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP06
Site Name	Tilbury			Sample No.	14
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey slightly fine sandy slightly peaty silty CLAY with rare decayed wood fragments			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

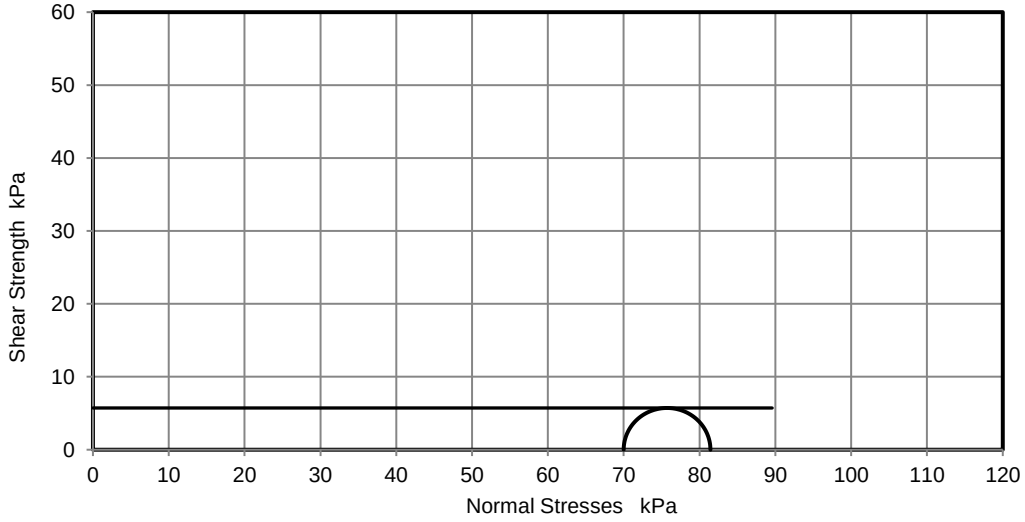
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.84	Mg/m3
Moisture Content	56	%
Dry Density	1.18	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	70	kPa
Axial Strain	11	%
Deviator Stress, (σ1 - σ3)f	11	kPa
Undrained Shear Strength, cu	6	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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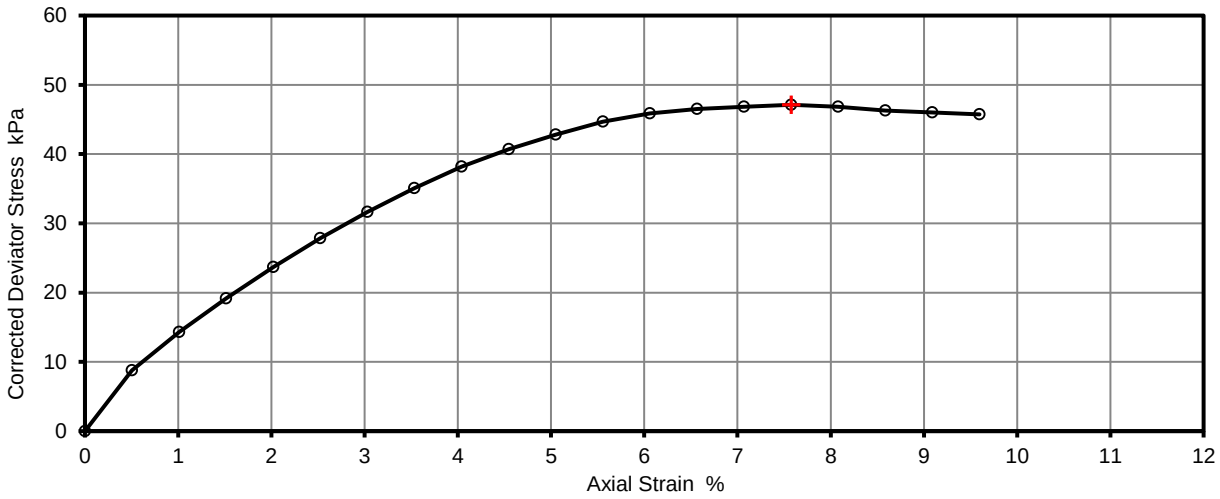
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP06
Site Name	Tilbury			Sample No.	15
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Low strength black and brown mottled PEAT with occasional decayed wood			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

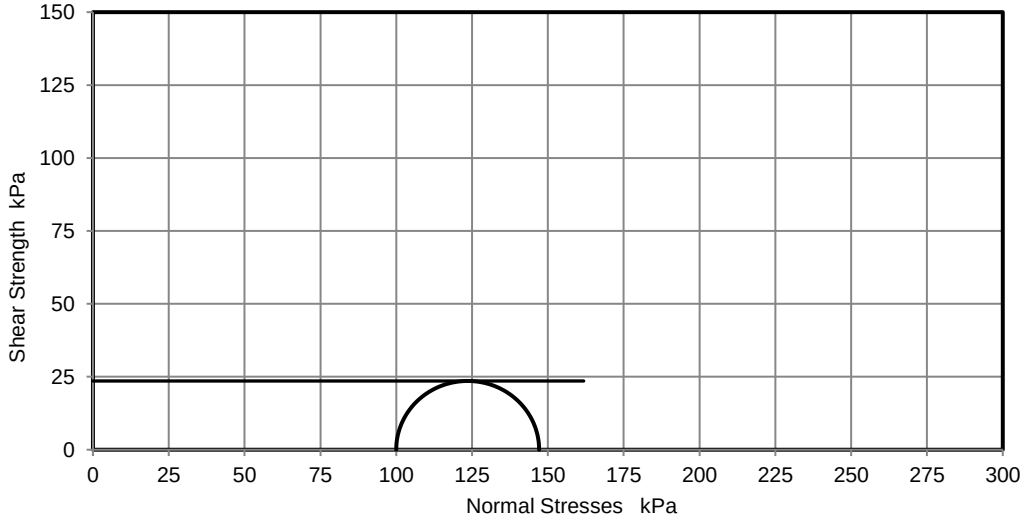
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	0.97	Mg/m3
Moisture Content	379	%
Dry Density	0.20	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	7.6	%
Deviator Stress, (σ1 - σ3)f	47	kPa
Undrained Shear Strength, cu	24	kPa ½(σ1 - σ3)f
Mode of Failure	Brittle	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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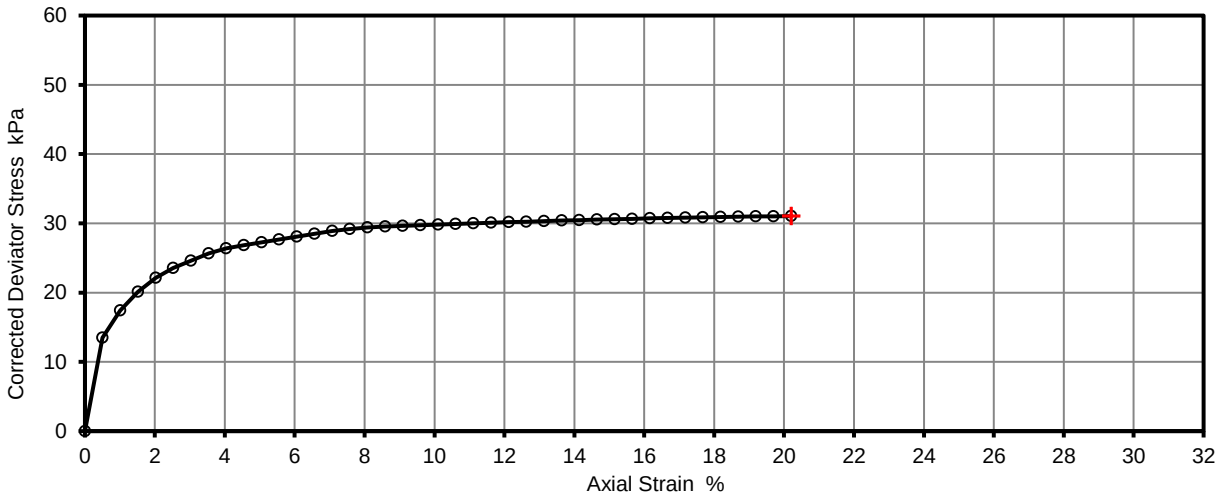
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP07
Site Name	Tilbury			Sample No.	16
Project No.	4593	Client	TerraConsult South	Depth Top	1.50 m
Soil Description	Very low strength grey mottled brown silty CLAY with occasional brown stains, deacyed wood fragments and pockets of light grey fine sand			Depth Base	1.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

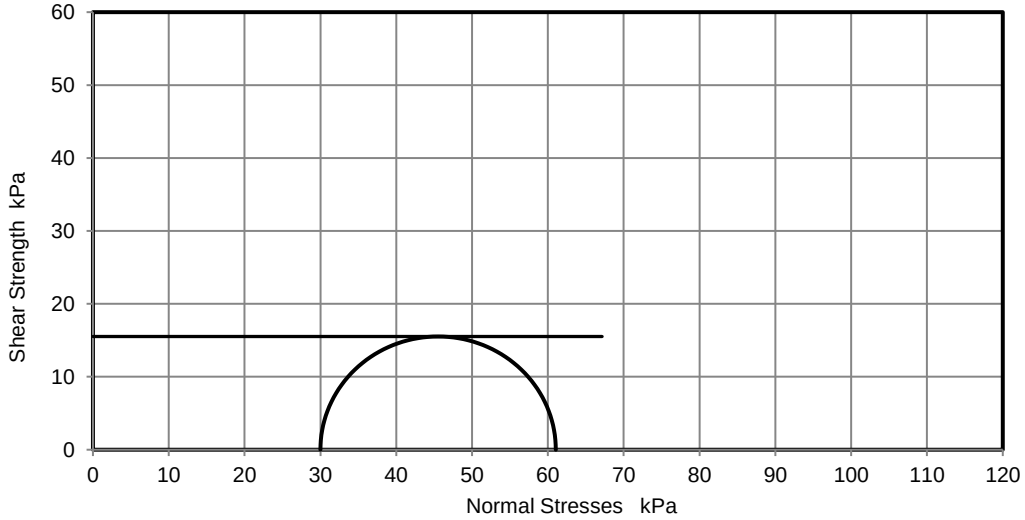
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.59	Mg/m3
Moisture Content	61	%
Dry Density	0.99	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	20	%
Deviator Stress, (σ1 - σ3)f	31	kPa
Undrained Shear Strength, cu	16	kPa ½(σ1 - σ3)f
Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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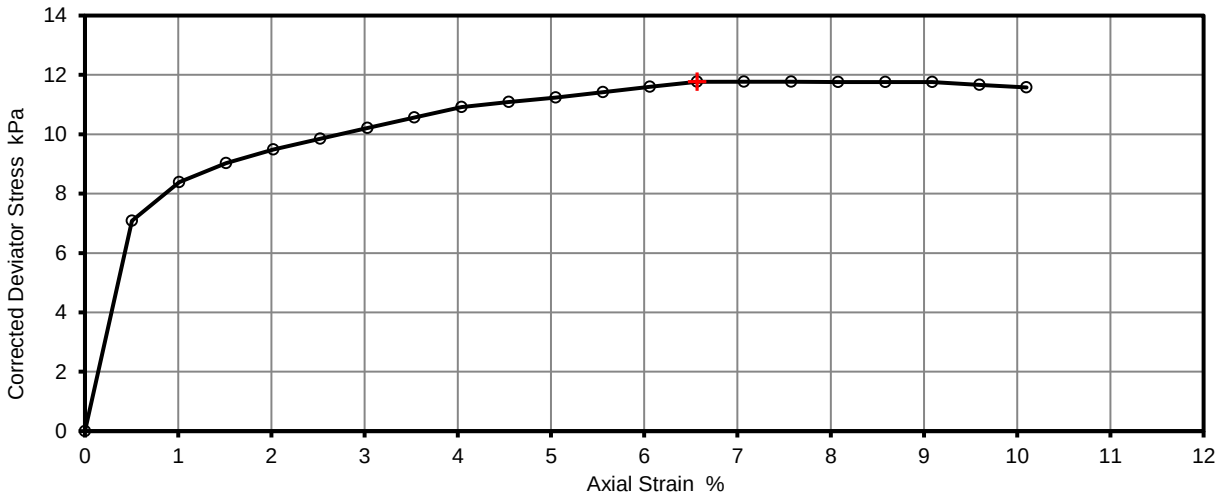
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP07
Site Name	Tilbury			Sample No.	17
Project No.	4593	Client	TerraConsult South	Depth Top	3.50 m
Soil Description	Extremely low strength grey mottled dark grey slightly fine sandy slightly peaty silty CLAY			Depth Base	3.95 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

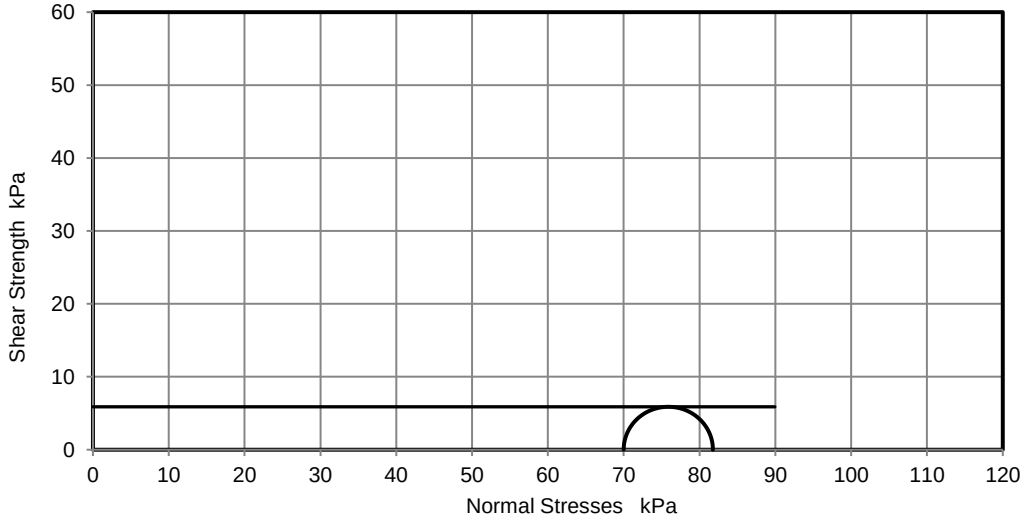
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.63	Mg/m3
Moisture Content	68	%
Dry Density	0.97	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	70	kPa
Axial Strain	6.6	%
Deviator Stress, (σ1 - σ3)f	12	kPa
Undrained Shear Strength, cu	6	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



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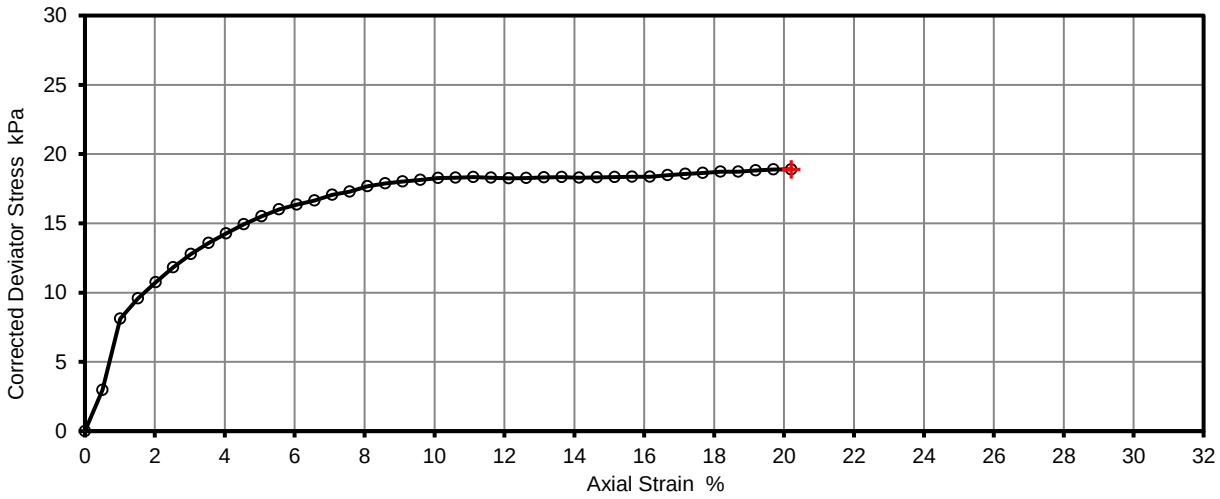
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	27216
				Borehole/Pit No.	CP07
Site Name	Tilbury			Sample No.	18
Project No.	4593	Client	TerraConsult South	Depth Top	6.00 m
Soil Description	Extremely low strength grey slightly fine sandy silty CLAY			Depth Base	6.45 m
				Sample Type	U
				Samples received	30/09/2019
				Schedules received	27/09/2019
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen			Date of test	14/10/2019

Remarks

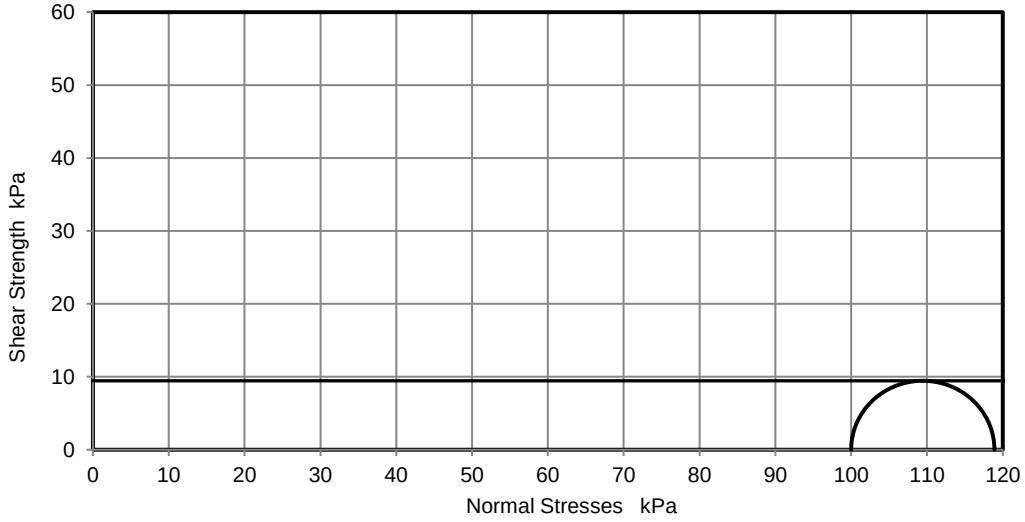
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	1.59	Mg/m3
Moisture Content	69	%
Dry Density	0.94	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	100	kPa
Axial Strain	20	%
Deviator Stress, (σ1 - σ3)f	19	kPa
Undrained Shear Strength, cu	9	kPa ½(σ1 - σ3)f
Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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Unconsolidated Undrained Triaxial Compression tests without measurement of pore pressure
Summary of Results

Tests carried out in accordance with BS1377:Part 7 : 1990 clause 8 or 9 as appropriate to test type.

Job No.	Project Name	Programme	
27216	Tilbury	Samples received	30/09/2019
		Schedule received	27/09/2019
Project No.	Client	Project started	01/10/2019
4593	TerraConsult South	Testing Started	14/10/2019

Hole No.	Sample				Soil Description	Test Type	Density		*w*	Length	Diameter	σ3	At failure				Remarks
	Ref	Top	Base	Type			bulk	dry					Axial strain	σ1 - σ3	cu	Mode	
		m	m				Mg/m3		%	mm	mm	kPa	%	kPa	kPa		
CP02	3	3.50	3.95	U	Extremely low strength grey slightly peaty silty CLAY with occasional decayed wood fragments	UU	1.56	0.83	89	198	102	70	7.6	7	3	B	
CP02	4	6.00	6.45	U	Extremely low strength black and dark brown mottled PEAT with occasional wood fragments	UU	1.03	0.23	357	198	102	100	7.1	13	6	B	
CP03	5	1.50	1.95	U	Very low strength dark brown PEAT with numerous wood fragments becoming at 1.55m bluish grey slightly peaty silty CLAY with occasional pockets of peat	UU	1.37	0.76	81	198	102	30	15	21	10	C	
CP03	6	6.00	6.45	U	Medium strength black and brown PEAT with occasional decayed wood fragments	UU	1.04	0.20	418	198	102	100	8.1	92	46	B	
CP04	7	1.50	1.95	U	Low strength grey slightly peaty silty CLAY with occasional brown stains and decayed wood fragments	UU	1.68	1.06	58	198	102	30	14	51	26	C	
CP04	8	3.50	3.95	U	Extremely low strength grey slightly peaty silty CLAY with occasional black flecks	UU	1.52	0.77	97	198	102	70	11	7	4	C	
CP04	9	6.00	6.45	U	Low strength black mottled brown PEAT with occasional wood fragments	UU	1.00	0.18	467	198	102	100	7.1	40	20	B	
CP05	10	1.50	1.95	U	Very low strength brownish grey and grey mottled slightly peaty silty CLAY with traces of decayed wood, occasional roots and carbonaceous deposits	UU	1.51	0.93	63	198	102	30	8.6	30	15	C	
CP05	11	3.50	3.95	U	Extremely low strength grey slightly mottled brown slightly peaty silty CLAY with occasional decayed wood fragments	UU	1.59	0.99	61	198	102	70	8.1	18	9	C	
CP05	12	6.00	6.45	U	Medium strength black, brown and light brown mottled decayed wood PEAT	UU	1.06	0.24	337	198	102	100	8.1	140	70	B	
CP06	13	1.50	1.95	U	Very low strength grey with numerous brown stains silty CLAY with occasional decayed wood fragments	UU	1.72	1.17	47	198	102	30	8.6	30	15	C	
CP06	14	3.50	3.95	U	Extremely low strength grey slightly fine sandy slightly peaty silty CLAY with rare decayed wood fragments	UU	1.84	1.18	56	198	102	70	11	11	6	C	
CP06	15	6.00	6.45	U	Low strength black and brown mottled PEAT with occasional decayed wood	UU	0.97	0.20	379	198	102	100	7.6	47	24	B	

Legend
UU - single stage test (single and multiple specimens) — σ3 Cell pressure — Mode of failure ; B - Brittle
UUM - Multistage test on a single specimen — σ1 - σ3 Maximum corrected deviator stress — P - Plastic
suffix R - remoulded or recompacted — cu Undrained shear strength, ½ (σ1 - σ3) — C - Compound

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Unconsolidated Undrained Triaxial Compression tests without measurement of pore pressure
Summary of Results

Tests carried out in accordance with BS1377:Part 7 : 1990 clause 8 or 9 as appropriate to test type.

Job No.	Project Name	Programme	
27216	Tilbury	Samples received	30/09/2019
		Schedule received	27/09/2019
Project No.	Client	Project started	01/10/2019
4593	TerraConsult South	Testing Started	14/10/2019

Hole No.	Sample				Soil Description	Test Type	Density		*w*	Length	Diameter	σ3	At failure				Remarks
	Ref	Top	Base	Type			bulk	dry					Axial strain	σ1 - σ3	cu	Mode	
		m	m				Mg/m3		%	mm	mm	kPa	%	kPa	kPa		
CP07	16	1.50	1.95	U	Very low strength grey mottled brown silty CLAY with occasional brown stains, deacyed wood fragments and pockets of light grey fine sand	UU	1.59	0.99	61	198	102	30	20	31	16	P	
CP07	17	3.50	3.95	U	Extremely low strength grey mottled dark grey slightly fine sandy slightly peaty silty CLAY	UU	1.63	0.97	68	198	102	70	6.6	12	6	C	
CP07	18	6.00	6.45	U	Extremely low strength grey slightly fine sandy silty CLAY	UU	1.59	0.94	69	198	102	100	20	19	9	P	

Legend
UU - single stage test (single and multiple specimens)
UUM - Multistage test on a single specimen
suffix R - remoulded or recompacted
σ3 Cell pressure
σ1 - σ3 Maximum corrected deviator stress
cu Undrained shear strength, ½ (σ1 - σ3)
Mode of failure ; B - Brittle; P - Plastic; C - Compound

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