LONDON STANSTED AIRPORT

Stansted Transformation Proaramme (STN-TP)

Terminal Extension

Contamination Desk Based Assessment (July 2023)

MAG London Stansted Airport

BUILDING FOR THE FUTURE

MOTT MACDONALD

Issue and Revision Record

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Executive Summary

As part of Stansted Transformation Programme (STN-TP), Mott MacDonald Limited has been commissioned by Stansted Airport Limited (STAL) to undertake a Geo-environmental and Geotechnical desk study for the potential extension of the existing Terminal. The proposed works include partial demolition of the existing Track Transit System, full demolition of two Skylink walkways and bus-gate buildings along with the construction of a three bay extensions to the existing passenger terminal a baggage handling building, plant enclosure, 3 no. Skylink walkways and associated hardstanding.

This report summarises the potential geotechnical and geo-environmental risks and constraints that relate to the site and delivery of the proposed development and provide high level recommendations for any future intrusive ground investigation and risk assessment (where required).

The following resources were utilised for drafting this report:

- Envirocheck report consisting of the geological, geo-environmental and historical information.
- Freely available online resources including British Geological Survey (BGS) Geoindex Onshore, Zetica.
- Information from past reports and ground investigation (GI) undertaken for previous phases of work.

The published geology underlying the site shows:

- No presence of any Artificial and Made Ground indicated on published BGS maps. However, some made ground is expected to be associated with the previous site development.
- Superficial deposits of:
  - Lowestoft Formation comprising clay with traces of sand and gravel of chalk fragments and flints from Anglian Stage underlying any Made Ground.
  - Kesgrave Beds comprising of sand and gravel from Early to Mid-Pleistocene Period, which is not evident in the BGS mapping, but encountered in the historical and past GI boreholes. This is either interbedded or underlying Lowestoft Formation.
- Bedrock of London Clay Formation comprising firm to stiff clay of Ypresian Age.

Exploratory holes from the BGS confirm the ground condition as follows:

- Made Ground between 0.00m bgl to 1.7m bgl.
- Lowestoft Formation encountered between 0.00m bgl and 7.25m bgl (4.6m – 21.5m thick); underlain or interbedded by
- Kesgrave Beds encountered between 6.30m bgl and 18.90m bgl (0.2m – 2.75m thick); underlain by
- London Clay Formation encountered between 12.65m bgl and 21.75m bgl with no proven thickness.

Groundwater was encountered within the Lowestoft Formation and Kesgrave Beds at a depth range of 3.2m bgl to 18.9m bgl. The Lowestoft Formation is classified as a Secondary Undifferentiated Aquifer and the bedrock London Clay Formation is classified as Unproductive stratum.

There are identified features of archaeological importance within the site boundary due to the presence of a historical development along with moat which was demolished and backfilled as part of the airport development. A Desk Based Assessment has been submitted to address the potential archaeology on the site. For further details, reference should be made to Stansted Airport, Terminal Extension, Essex: Historic Environment Desk-Based Assessment, 2023/73, July 2023. This concludes that there is negligible potential for archaeological assets to be impacted by the works due to extensive previous surveys and development.

A geotechnical risk register was also carried out to identify the geotechnical risks. Based on these , recommendations for supplementary ground investigations are also recommended.

The historical map review reveals that prior to the development of the existing airport the area was largely undeveloped with only limited previous development which included Colchester Hall centrally in the application

site and a former depot including various unspecified tanks located in the southern part of the application site. The former Stansted Mountfitchet Airfield, a World War II airbase, was present approximately 500m to the west. The following key sources of contamination associated with the application site were identified:

- S1: Contamination associated with land use as an airport – possible spills or leaks of hydraulic oils, oil filled cables, fire-fighting foams, use of glycols etc;
- S2: Bulk fuel storage and distribution – onsite aviation fuel distribution lines and possible former tanks around Satellite 3; and
- S3: Possible localised infilling of unnamed drains, former moat previously onsite or other unidentified areas of made ground.

A preliminary qualitative risk assessment identified the risks from these contamination sources ranging from very low to moderate/low for human health, very low to moderate/low for controlled water and moderate/low for the built environment.

A ground investigation survey including a programme of monitoring is recommended to refine the understanding of contamination risks and the conceptual site model. It is recommended that this is undertaken in conjunction with geotechnical investigations required to collect data to inform the ground model and foundation design.

Results of the investigation should be reported in an updated risk assessment to identify where remedial requirements may be needed, if any. The findings of the current report and subsequent phases of assessment should be discussed with the relevant regulator.

1.0 Introduction

Mott MacDonald Limited has been commissioned by Stansted Airport Limited (STAL) to undertake a Geo-environmental and Geotechnical desk study for the potential extension of Terminal (hereon referred to as 'the Site') as part of the Stansted Transformation Programme.

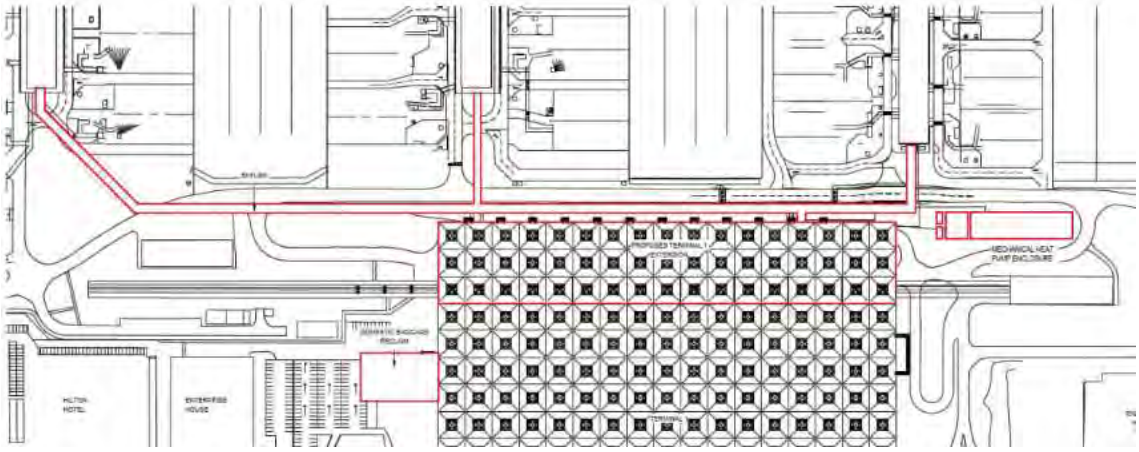
1.1 Proposed Development

The proposed development includes:

- Partial demolition of the existing Track Transit System;
- Full demolition of two Skylink walkways and bus-gate buildings;
- Construction of:
  - three bay extensions to the existing passenger terminal;
  - baggage handling building;
  - a plant enclosure;
  - three Skylink walkways; and
  - associated hardstanding.

The development proposals are summarised in Figure 1.1.

Figure 1.1: Proposed development



Source: STN.XX.00>XX-PAW-A-GA-BLDSTR-2910

1.2 Report Objectives

The purpose of this report is to summarise readily available ground related information for the site and identify potential geo-environmental and geotechnical hazards which may place a constraint upon the proposed works. These hazards may pose a risk to the development itself, human health or the environment. By identifying these geotechnical and geo-environmental risks at an early stage, opportunity is provided to consider them whilst undertaking the optioneering process, and therefore minimise or account for abnormal development costs associated with ground related risks.

The objectives of this report are as follows:

- Establish the likely geological sequence at the site, and any known variations within the wider area;
- Review the historical development of site;
- Identify potential geotechnical hazards associated with the proposed scope of work;
- Summarise geo-environmental considerations associated with the proposed scope of works;
- Develop a conceptual site model of potential pollutant linkages;

- Undertake a land contamination risk assessment; and
- Outline the recommendations for intrusive ground investigation for geotechnical and land contamination purposes.

Further recommendations are provided at the end of this report to aid in the management of the identified ground related risks.

1.3 Source of Information

An Envirocheck report (Appendix A) consisting of geological, geo-environmental and historical information has been purchased (Landmark PLC Group, 2023) along with freely available online sources of information to compile this report. Additionally, information from past ground investigation (SOCOTEC, April 2023) that was undertaken in 2022 for another site located approximately 200m north-east of the proposed site, have been also considered within this report.

For further information on the resources used within the report, refer to Section 7.0.

1.4 Limitations and Uncertainties

This report is based primarily on information collated from desk-based activities, and so those using or relying on the information herein should recognise the uncertainties associated with desk-based activities and the limited intrusive investigation that can only examine a fraction of the subsurface conditions.

This document is issued for the party which commissioned it (STAL) and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

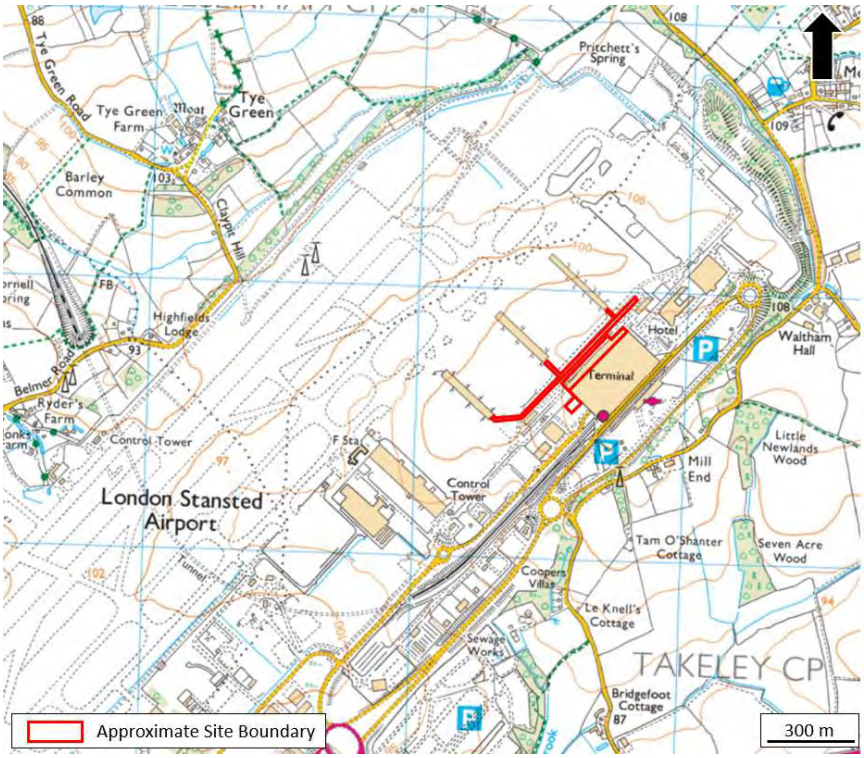
Mott MacDonald is not insured for, and therefore will not undertake surveys to identify asbestos or provide any guidance on the treatment of asbestos, or similarly for toxic mould. Should the presence of asbestos or toxic mould be suspected during the course of the study, Mott MacDonald would recommend the appointment of a specialist contractor to address the issue and would not provide advice on risk or remedial measures.

2.0 Summary of Phase 1 Assessment

This section includes Table 2.1 – Table 2.14 which summarise the available geotechnical and geo-environmental information for the site location (expanded to include a greater area than shown in Figure 1.1 to cover other possible features), from both historical and current data as detailed in Section 1.3. The sources for the information are included within the appendices (where applicable), including the Envirocheck Report (Appendix A) and publicly available information from the British Geological Survey (BGS) (Appendix D), information from past ground investigation (Appendix F), Ordnance Survey (OS), Environment Agency (EA) and Google Earth Pro.

2.1 Site Specific Information

Table 2.1: Summary of Site-specific Information

Detail	Description
Site Location	The site is located at Stansted Airport, covering the outer north-western entry to Terminal , leading to aircraft stands (Satellite 1 to 3) with the postcode CM24 1RG and grid reference 555560, 223730. It extends to an approximate area of 2.4 hectares. The A120 is located approximately 1.7km south and M11 is located approximately 3.5km west of the site. A site location plan is presented in Figure 2.1. **Figure 2.1: Site Location**  Source: OS Maps (2023)
Description of the Site and Surrounding Area	The application site is irregular in shape with several discrete areas required for the proposed development. All areas are located within the existing airport boundary. **Terminal extension** The proposed terminal extension is located on the north western elevation of the terminal building. This area currently comprises part of the existing terminal and includes the Airport Track Transit System (TTS), a fully automated people mover system connecting the main terminal with the three satellite buildings (Satellite1, 2 and 3). Adjacent to this and within the footprint of the application site, are the existing bus gate/advance passenger vehicle (APV) building, an access building to Satellite 3, roadways, areas of macadam hardstanding and grassed areas. Satellite 2 and 3 buildings, airport apron and runway are located to the northwest. **Plant Enclosure** Almost adjacent to the northern extent of the terminal extension is an area that currently comprises macadam surfaced hardstanding and is the location for the new plant enclosure . A maintenance building associated with the TTS is located approximately 20m to the southeast of this location. Satellite 3 and associated airfield operations are located to the northwest.

Detail	Description
	Skylinks The application site includes linear walkways extending away from the terminal towards the three satellite terminals. These are all located airside and currently comprise a mixture of airfield apron, grassed areas and existing elevated walkways. Further airfield operations are located beyond. **Baggage handling building** The final part of the application site is located off the south western elevation of the terminal.. The area currently comprises part of a concrete and hardstanding surfaced service area including three waste skips, bin storage and a covered smoking area. Car parking, some minor areas of planting and the main terminal building are situated beyond. Stansted Airport railway terminus is present approximately 75m to the south west. The surrounding area beyond the airport comprises agricultural land, the M11 motorway to the northwest and A120 trunk road to the south.
Site Walkover Notes	A site walkover was conducted by Mott MacDonald on the 10th November 2021, as part of the planning stage for a previous study for a site approximately 200m north-east of this proposed development. The details that were summarised were site-specific to this location. However, a site walkover was not carried out as part of this desk study and no relevant information regarding the proposed site were available from the past site walkover.
Topography	Overall, most of the site immediately to the rear of the existing terminal is relatively flat with typical ground elevations between 100m AOD and 102m AOD. A very shallow slope is present towards the south-west of the site, as the land rises to the airfield. It is recommended that a topographic survey is undertaken at the site prior to the commencement of works.
Utilities	The site is likely to be underlain by a network of buried utilities used to service Stansted Airport. A full utility drawing for the Stansted Airport was provided by STAL. However, any further up-to-date service and utility information should be obtained from the Client before commencement of any intrusive works. It is recommended that a Ground Penetration Radar (GPR) survey is conducted before any intrusive works on site. This report should be updated upon receipt of information regarding existing utilities.

2.2 Summary of Geotechnical and Geo-environmental Information

A summary of significant geotechnical and geo-environmental information within approximately 500m of the site has been presented below. The observations have been informed by the Envirocheck Report (Landmark PLC Group, 2023). For further detail, please refer to the Appendix A.

Table 2.2: Geotechnical and Geo-Environmental Information

Detail	Description
Published Geology	The British Geological Survey (BGS) of England and Wales 1:50,000 map series sheet number 222, Geological Survey of Great Britain National Grid Series 1:10,000 (TL52SE), and the associated BGS memoir, along with the BGS Onshore Geoindex (2023) have been reviewed to interpret and present the geological units and deposits that are likely to be present underlying the site. **Artificial Deposits** The BGS 1:50,000 mapping indicates no artificial ground present underlying the site. However, as the site is in a developed state, it is likely that worked ground will be encountered. The mapped artificial deposits within the vicinity of the site are >2km north and north-west of the site. It should be noted that BGS mapping only indicates artificial deposits where they occur at a thickness more than 2.5m. **Superficial Deposits** The BGS 1:50,000 mapping indicates the site is underlain by Lowestoft Formation with other deposits such as Head mapped at around 1.0km to the north-west and south-west of site. Alluvium is also found approximately 1.0km to the south-west of the site. These are associated with the water courses present in those areas including Pincey Brook to the south-west of site. The Kesgrave Formation is present approximately 2km to the north-west of the site. The mapped locations of the superficial deposits are illustrated in Figure 2.2. The Lowestoft Formation forms an extensive sheet of chalky till together with outwash sands and gravels, silts and clays. The till is characterised by its chalk and flint content. The carbonate content of the till matrix is about 30%. These are formed in the Anglian Stage which is approximately 0.423 – 0.48 million years ago with varying thickness at different locations. It is expected to be locally present up to 60m in buried valleys. From Figure 2.5, the deposit is expected to be found at an average thickness of 10m within the site proximity. Head is poorly sorted and poorly stratified, angular rock debris and/or clayey hillwash and soil creep, mantling a hillslope and deposited by solifluction and gelifluction processes. It comprises of gravel, sand and clay depending on the upslope source and distance from the

source. There may be presence of lenses of silt, clay or peat and organic material locally within the unit. The thickness of this unit can be variable.

Alluvium is a general term for the clay, silt, sand and gravel. It is the unconsolidated detrital material deposited by a river, stream or other body of running water as a sorted or semi-sorted sediment in the bed of the stream or on its floodplain or delta, or as a cone or fan at the base of a mountain slope. Both Alluvium and Head deposits are formed approximately 0.00 – 2.58 million years ago in the Quaternary Period. The thickness of this unit can be variable.

The Kesgrave Catchment Subgroup is mainly gravel characterised by quartzite from the Triassic, Carboniferous, and Devonian rocks. The members comprise bodies of cross-bedded and massive, moderately sorted sand and gravel which a thickness ranging between 5m to 12m. These are formed during the Early to Mid-Pleistocene period, which is dated approximately 2.58 – 0.126 million yes ago. The unit is expected to be overlain by the Lowestoft Formation. From Figure 2.5, the unit is expected to be found as a discontinuous feature in between the Lowestoft Formation and bedrock for a smaller thickness.

Figure 2.2: Mapped Superficial Deposits

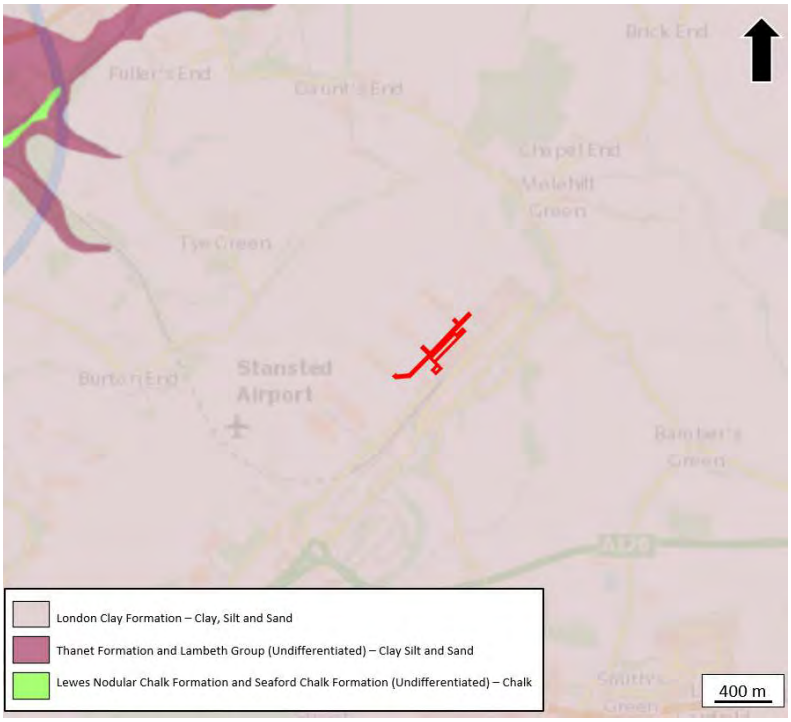
Source: BGS Geoindex (2023)

Bedrock

The BGS 1:50,000 mapping indicates the principal bedrock underlying the site is London Clay Formation (

Figure 2.3) which was formed 56.0 – 47.8 million years ago in the Ypresian Age.

The London Clay Formation mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty or very silty clay, clayey silt an sometimes silt, with some layers of sandy clay, carbonate concentrations and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of formation. The BGS map shows the London Clay Formation to a maximum depth of approximately 65m within the site proximity, with a slight dip from north-west to south-east. The mapped bedrock geology within site is as shown in Figure 2.3.

Detail	Description
	Figure 2.3: Mapped Bedrock Deposits  Source: BGS Geoindex (2023) **Structural** No structural features (e.g.: faults or folds) have been recorded in the BGS or the Envirocheck Report within 1km of the site. However, this does not preclude their presence.
Hydrogeology	**Aquifer Classification** **Superficial Deposits** The Lowestoft Formation is classified as a Secondary Undifferentiated Aquifer with medium vulnerability. The Kesgrave Formation is classified as a Secondary Aquifer which is described as permeable layers capable of supporting water supplies are at a local rather than strategic scale. **Bedrock** The London Clay Formation has been classified as 'Unproductive' strata and described as rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow. **Groundwater Flooding** BGS data does not show the potential for groundwater flooding at the site. The closest groundwater flood susceptible area is indicated 389m to the south west.
Hydrology	**Flood Risk** According to the Envirocheck Report, the site is not within a Flood Zone, meaning it has a very low probability for flooding. The Environment Agency Flood Map for Planning also classifies the site as 'Very Low Risk for flooding' from groundwater, rivers and sea. However, based on the 1:10,000 Site Sensitivity Map from Envirocheck, the proposed site is likely to get flooded from surface water with a low to high possibility under the return period of 30 – 1000 years. **Surface Water Features** There is presence of water courses around the site boundary based on the Envirocheck Reports. The nearest surface water body is an unnamed inland river approximately 325m to the south-east of the site centred around NGR 555870, 223389. The Environment Agency catchment explorer indicates that watercourse to the east of the site drain to the River Rodding catchment. The Environment Agency Catchment explorer indicates Pincey Brook is found approximately 300m west of the site where it is present in a culvert. It is present in a channel approximately 700m to the south of the site. This was historically encountered within the location of Satellite

Detail	Description
	3 (see Table 2.4 for further details) and may have been subsequently removed/infilled. The Pincey Brook drains into the Upper Lea catchment.
Water Abstractions	No water abstraction points are situated onsite. The nearest water abstraction point is the Environment Agency designated groundwater source located 748m south of the site with a yearly abstraction rate of 23m^3 from glacial gravels. The active dates of this abstraction point are not stated.
Discharge Consents	The Envirocheck reported four surface water discharge consents within 500m site boundary with the closest situated at 203m south of site to the 'Culverted Trib of Rodding' and relates to three separate consents, all of which have since been revoked. The remining discharges are to the Trib of Rodding or Roding.
Registered Radioactive Substances	There is no report of any registered radioactive substance onsite or within 500m of the site.
Waste Related Activities	The Envirocheck report records no historic landfill or waste sites within the site and the 500m surrounding it.
Landfill sites	
Recorded Pollution Incidents	The Envirocheck report recorded a Category 3 (Minor incident) pollution incident on 18th October 1995 which involved release of unknown sewage pollutants to an unnamed surface water located 428m south-west of site. No further pollution incidents are recorded within 500m of the application boundary.
Sensitive Land Uses and Statutory Designations	The site is within a Nitrate protection zone. Greenstreet Spring/Pigeon Wood which is an ancient woodland is recorded 396m north of the site.
Unexploded Ordnance (UXO) Risk	According to the freely available open-source data (Zetica UXO, 2023) the site is in an area of 'Low' Bombing Density. However, there are areas that are indicated as Luftwaffe Target locations and reported UXO finds in reasonable proximity to site. Due to this, a preliminary UXO risk assessment was undertaken for a previous development location approximately 200m north-east of the present site. In this, it found there to be a low risk of indicative German UXO, and a medium risk of indicative British / Allied UXO and recommended a detailed UXO threat assessment was undertaken for the site. It was also reported that the original Stansted Airport was used as a bomber airfield and major maintenance depot during WWII by the Royal Air Force (RAF) and United States Army Air Force (USAAF). More details can be provided if required. It is therefore recommended that a site specific UXO risk assessment is commissioned for the site prior to any intrusive works.
Geotechnical Risks	The Envirocheck Report summarises the potential for ground stability hazards to occur on site, details of which are provided below: • Collapsible Ground: Very low. • Compressible Ground: No hazard. • Potential for Landslide: Very low. • Dissolution Stability: No hazard. • Running Sand: Very low. • Shrinkage and Swelling Clay: Low (Hazard associated with the London Clay Formation).
Radon Potential	The site is in a lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). No radon protective measures are necessary in the construction of new dwellings or extensions.
World Heritage Sites	According to the Envirocheck Report, there are no World Heritage Sites located within 1km of the site.
BGS Estimated Soil Chemistry	BGS estimated soil chemistry for Arsenic, Cadmium, Chromium, Lead and Nickel were 15-25, <1.8, 60-90, <100 and 30-45 mg/kg, respectively.
BGS Recorded Mineral Sites	According to the Envirocheck Report, there are no records of any mineral sites within a 1km radius of the site.
Industrial Land Use	No evidence of industrial land use is found onsite. The Envirocheck report listed a total of 42 facilities comprising contemporary trade directories and points of interests within 500m. Table 2.3 summarises the facilities within 250m of the site.
Notification of Installations Handling Hazardous Substances (NIHHS)	According to the Envirocheck Report, there are no records of any NIHHS within a 1km radius of the site.

Detail	Description
Registered Explosive Sites	There are no registered explosive sites within the vicinity of the site.
Control of Major Accident Sites (COMAH)	No presence of a COMAH site is recorded onsite or within 1km of the site boundary as evidenced in the Envirocheck report.
Fuel Station Entries	No record of a fuel station onsite. The nearest fuel station is indicated as being 100m to the east. However, this is considered to be erroneously positioned, the actual position given by the postcode and online mapping shows the fuel station (BP Connect) is approximately 1.5km southwest.
Recorded Tanks	There are no records of tanks presently onsite. The only tank within 500m proximity to the site is a tank categorised by the Envirocheck report as an Industrial Feature which is situated 460m south-west of site. Tanks are however recorded as historical features – refer to section 2.3.
Integrated Pollution and Prevention Controls	No record of a pollution and prevention control entry is found within 500m of the site.

Table 2.3: Industrial Land Uses – Contemporary Trade Directory entries

There are no recorded industrial land uses indicated within the application boundary although the Envirocheck report does not list the on-site airport as an industrial land use. Eleven contemporary trade directories, and 14 points of interest are noted within 250m and are listed below.

Name	Category	Location relative to site
London Stansted Airport	Point of Interest - Airport and Landing Strips	67m east
Chimera Agencies	Point of Interest - Distribution and haulage	97m south
Aeropeople	Point of Interest - Aviation engineering	97m south
London Stansted	Point of Interest - Airport	100m south
Acetech Personnel Ltd	Point of Interest - Aviation engineering	100m south
Gate Aviation	Point of Interest- Commercial cleaning service	100m south
BP Connect	Point of Interest - Petrol and Fuel Station	100m east
Stansted Airport Police Station	Points of Interest - Police Station	100m south
London Stansted	Point of Interest- Airport and Landing Strip	100m south
Stansted Airport Ltd	Point of Interest- Airport and Landing Strip	100m south
Stansted Citylink	Contemporary trade directory- Bus and coach operations	101m east
Dougland Industrial Support Services Ltd	Contemporary Trade Directory -Commercial cleaning services	101m east
Dixon Travel	Contemporary Trade Directory - Manufacture and sales of electrical goods	101m east
Rmc Readymix (East Anglia)	Concrete & Mortar Ready Mixed	101m east
Curry Pc World,	Contemporary Trade Directory - Manufacture and sales of electrical goods	101m east
I S S Aviation	Contemporary Trade Directory - Commercial cleaning services	101m east
Derichebourg Multiservices	Contemporary Trade Directory - Commercial cleaning services	101m east
Stansted Citylink	Point of Interest- Bus and coach operations	101m east
London Stansted Airport	Point of Interest- Airport and Landing Strips	101m east
Stansted Airport	Point of Interest- Airport and Landing Strip	101m east
Stansted Airport	Point of Interest- Airport and Landing Strip	101m south
Stansted Airport Rail Station	Point of Interest - Public Transport, Stations and Infrastructure	113m south
Stansted Airport Station	Point of Interest - Public Transport, Stations and Infrastructure	113m south
London Stansted Airport	Point of Interest - Airport and Landing Strips	124m east
Stansted Airport Satellite 2	Point of Interest - Airport and Landing Strips	158m west

2.3 Historical Mapping

A summary of significant historical land use and development within approximately 500m of the site has been presented below. The observations have been informed by the Envirocheck historical maps, and only mapped features where significant change has been recorded are included in the summary and included in Table 2.4.

Table 2.4: Summary of Historical Mapping

Year [Scale]	On-site	Surrounding Area
1876 [1:2,500]	• Site is largely undeveloped along the north-east with vegetation and fields. • Colchester Hall present around the centre of the site (between the present Satellite 2 and the terminal), along with some wood and fir vegetations. • A moat appears to be surrounding Colchester Hall. • Associated road connections are also mapped from Colchester Hall towards south (beneath the current terminal building).	• Site not developed with only some vegetation mapped within 100m north-west of the site. • Watercourse is marked approximately 300m northwest of the site. Flow indicated from north-east to south-west. • Newhouse observed at 400m northwest of the site. • Pond is located in between the current location of Satellite 2 and 3. • Another water body is located within 100m of the south-west corner of the site. • Blunt Cottages, Little Coopers and Great Coopers observed approximately 150m south-west of the site. • High House, Old Windmill and Teagles present at around 400m south-east of the site.
1881 [1:10,560]	• No significant changes	• 'Pincey Brook' is marked at approximately 600m along the south-west boundary of the site.
1897 [1:2,500]	• Most of the trees within the site boundary and surrounding area are not mapped.	• A further watercourse is shown approximately 300m south-west of the site from north-east to south-west.
1898 [1:10,560]	• No significant changes.	• A watercourse is also marked within 250m north of the site boundary.
1920 – 1921 [1:2,500]	• No significant changes.	• A watercourse is now mapped approximately 150m north-east with a flow direction represented from east to west.
1923 [1:10,560]	• No significant changes.	• No significant changes.
1950 – 1951 [1:10,560]	• Presence of small developments within the boundary (south-west of site) and near Colchester Hall.	• Further developments are evident in the south-west and south-east regions of the site. • Presence of numerous clusters of pits towards the west of the site. • Presence of some tank like features at approximately 750m south-west of the site.
1960 [1:10,000]	• Many of the buildings present in the previous map have now disappeared. • Colchester Hall and moat remains present.	• Watercourse mapped at 150m north-east is now named as 'Pincey Brook'. • Majority of the developments that were mapped in 1950s has disappeared. • The pits are also not present.
1970 [1:2500]	• Moat present near Colchester Hall seems to have reduced in size, suspected to be partially infilled. • Part of a depot including one building shown in the footprint of the site around the proposed skywalk location in the southwest.	• Presence of a caravan park, deport and numerous tanks, the closest of latter being shown within 30m of the site around the proposed skywalk location. • Fire service training school located approximately 200m south-west of the site. • Presence of an embankment near 'Pincey Brook' at approximately 600m south-west of the site. • Several drains are mapped at the south-west and north-west of the proposed site boundary.

Year [Scale]	On-site	Surrounding Area
		• Mill House and Mill end mapped at the south-east portion of the site. • A 'Track' from Colchester Hall to road near High House is now evident. • Significant developments in the north-west area of the site, suspected to be associated with the Airport.
1971 [1:10,000]	• No significant changes.	• Engineering works are mapped approximately 250m south-west of the site. • 'Sewage Works' is marked near the tank like feature that was mapped in 1950's. • Developments towards approximately 1km north-east of the site.
1985 – 1992 [1:2,500]	• Colchester Hall and moat is now absent. • Stansted Airport Passenger Terminal is now fully developed.	• Airport Satellite 1 & 2 and associated foot bridge developed, with the displacement of tanks previously visible. • Presence of monorail and associated tunnels and substation along the south-east boundary of the site. • 'Terminal Road North' is present in front of the Terminal building. • Airport developments such as runway and associated spaces is now clearly visible. • Runway Approach Lights are now present. • 'Pincey Brook' that was marked previously at the north-east and west of the site is now disappeared, suspected to be infilled fully. • The pond features mapped previously at the north-east and south-east of the site is not present. • A series of towers (suspected to be light towers) are located near Satellite 1 and 2, approximately 300m to the south-west boundary of the site. • Depot (the existing cargo handling areas) now shown around 300m south-west of the site. • Enterprise House present at around 100m south-west of the site. • Developments in the roadways including 'Terminal Road South' and associated round abouts. • Car parks beside Terminal Road North and along the south-east site boundary is present. • Numerous drains present near Satellite 3 location, north-west of the site and along the north-east site boundary. • Presence of a school approximately 250m across Terminal Road South, south-east of the site. • Several slopes in place up north and east-side of passenger terminal, within satellite 3 position and at the south-eastern site boundary along Terminal Road North. These indicate the possibility of earthworks/embankments.
1993 [1:2,500]	• No significant changes.	• No significant changes.
1992 – 1993 [1:10,000]	• No significant changes.	• Mast present at approximately 900m towards north-west of the site. • 'Pincey Brook' is not mapped in the entire length as compared to previous maps. It is now present at approximately 800m south-west of site along with the sewage works.

Year [Scale]	On-site	Surrounding Area
		• A fire station is located approximately 500m west of the site. There are various other developments in the closer proximity. • Presence of filter beds near the sewage works.
1996-1999 [1:2,500]	• No significant changes.	• Presence of Control tower and Electricity Sub-station at approximately 400m south-west of the site.
1999 [1:10,000]	• No change apparent on site except a modification in foot bridge connection with the Terminal.	• Presence of warehouse approximately 750m south-west of the site (at the location of previously mapped developments). • Extension of depot is evident. • School that was mapped previously is still present.
2006 [1:10,000]	• Extension of Terminal building and alteration in the foot bridge connection is evident.	• The drain flowing from the north-eastern site border is now site now truncated to a few distance and is identified from the Envirocheck Report as a Potentially Infilled Land. • Development in the location of 'Satellite 3'. • Warehouse approximately 750m south-west of the site is now disappeared. • Presence of a building beside Gorefield roundabout and an associated car park. • More buildings in Stansted courtyard. • Extension of depot and development of nearby car parks.
2023 [1:10,000]	• Foot bridge connection from 'Satellite 3' is present.	• 'Satellite 3' is now fully developed. Non-existence of the slopes previously encountered from 1992-1993. • Hotel built southwest of the previously mapped Enterprise House just outside the southwestern site boundary. • The school is now marked as 'High House Day Nursery'

A previous desk study completed for a nearby development related to Stansted Airport approximately 200m north-east of this site by Mott MacDonald in 2021 reported that 'Pincey Brook' may have been infilled as part of the wider development of Stansted Airport. No records of the construction or material used in the infilling of 'Pincey Brook' was noted.

Also, in the Envirocheck 1:10,000 Site Sensitivity Map, there is presence of a linear infilled feature across the Satellite 3 location, which is inferred to be the infilled 'Pincey Brook' based on the historical maps.

Although historical maps do not show development of the airfield, it is known that the original Stansted Airport, located approximately 800m southwest of the site, was used during WWII by the Royal Air Force (RAF) and United States Army Air Force (USAAF) as a bomber airfield and major maintenance depot (Ramboll Environ, 2018). This was constructed in 1942 (MAG, 2023) and historic air photographs show the former airbase perimeter road was located approximately 500m to the west of the site. It is unclear from the photographs whether associated airfield operations extended onto the proposed development site.

2.3.1 Site Sensitivity

There was no ecological data available for the proposed site while drafting this report, however it is understood that a Preliminary Ecological Appraisal has been completed in parallel with it. This, any other associated reports and their findings should be consulted on prior to any further stages of works being completed.

2.3.2 Archaeological Remains

From the historical mapping, it is clear that there was the historical Colchester Hall and associated moat at the centre of the proposed site. This was suspected to be demolished and backfilled as part of the development of the airport. A Desk Based Assessment has been submitted to address the potential archaeology on the site.

For further details, reference should be made to:

- Stansted Airport, Terminal Extension, Essex: Historic Environment Desk-Based Assessment, 2023/73, July 2023.

2.4 BGS Borehole Records

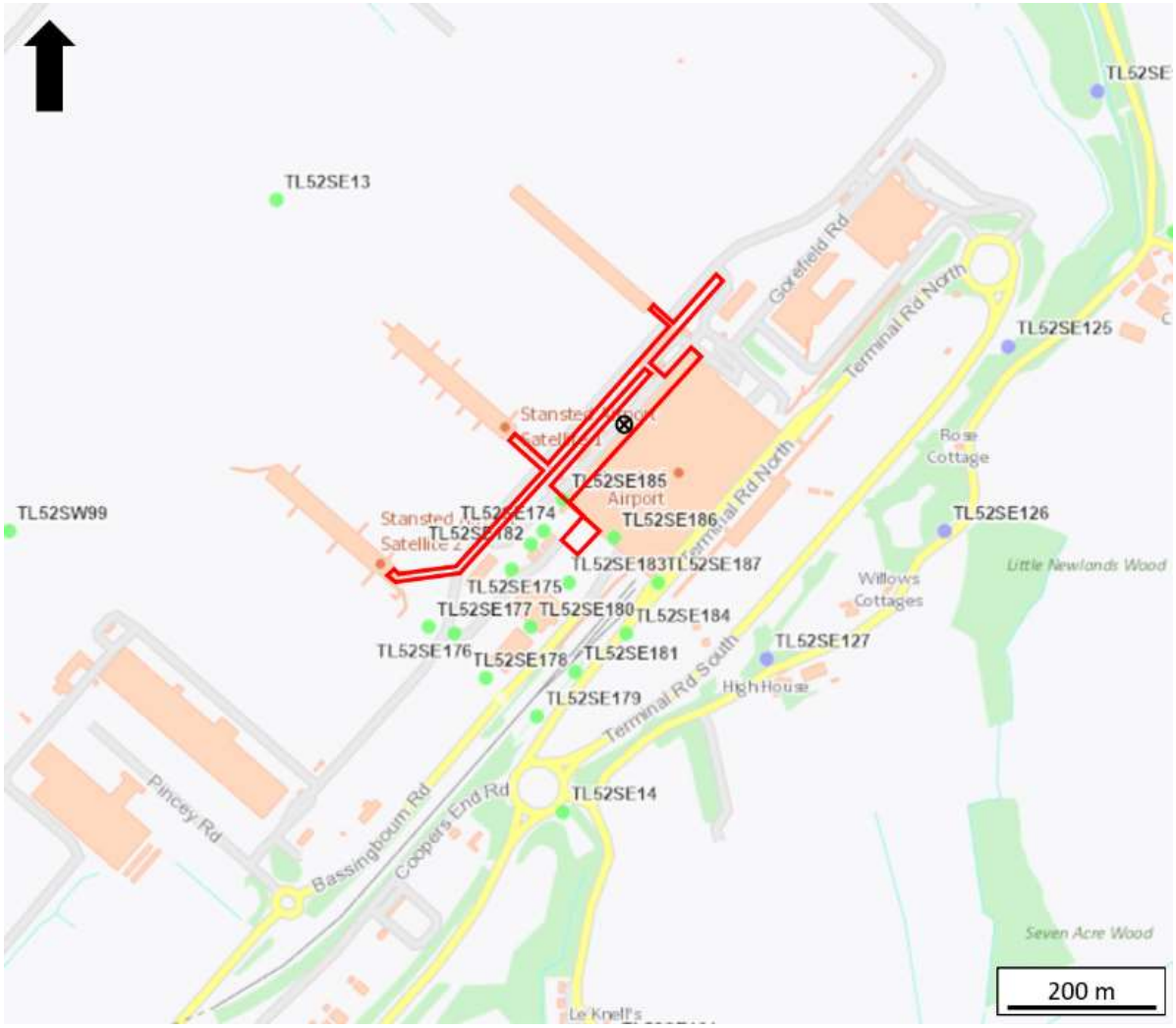
A summary of the historical BGS boreholes reviewed within this report are provided below. The boreholes have been selected based on their proximity to the site and their representation of the geology presented by the BGS 1:50,000 mapping. The indicative locations of the selected boreholes are presented in Figure 2.4.

Table 2.5: BGS Borehole Summary

BGS Reference	Location	Approximate Distance (m)	Compass Direction	Eastings	Northings	Depth (m bgl)	Ground Level (m AOD)
TL52SE185	On-site	162	SW	555560	223640	21.00	105.55
TL52SE174	Off-site	210	SW	555530	223590	15.00	98.70
TL52SE182	Off-site	235	SW	555510	223570	20.00	103.90
TL52SE175	Off-site	295	SW	555480	223530	25.00	98.60
TL52SE186	Off-site	180	SW	555640	223580	22.00	106.95
TL52SE183	Off-site	268	SW	555570	223510	23.00	105.40
TL52SE187	Off-site	251	SW	555710	223510	22.65	106.95
TL52SE13	Off-site	650	NW	555110	224110	16.80	103.30
TL52SE14	Off-site	615	SW	555560	223150	17.00	100.00

*As majority of the boreholes are within site boundary, all distances and compass directions are taken with respect to the black cross symbol in Figure 2.4

Figure 2.4: BGS Borehole Location Plan



Source: BGS Geoindex (2023)

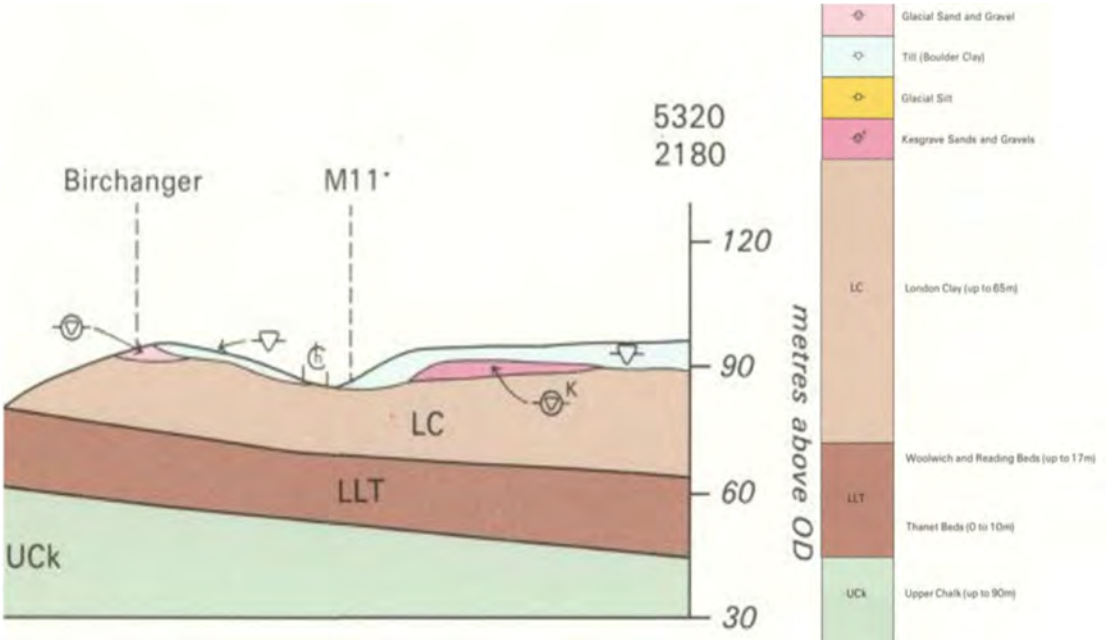
Table 2.6: Summary of Encountered Strata

Strata	Top Depth (m bgl)	Base Depth (m bgl)	Thickness (m)
Topsoil/ Made Ground*			
Engineering description is not available.	0.00	0.20 – 1.70	0.20 – 1.70
Lowestoft Formation			
Firm to stiff yellowish brown sandy silty CLAY with fine to coarse medium gravel/sand sized Chalk fragments and medium gravel of flint.	0.00 – 7.25	6.30 – 21.75	4.60 – 21.50
Kesgrave Sand and Gravel*			
Medium dense fine to coarse brown SAND with fine to medium coarse flint gravel, or;	6.30 – 18.90	6.50 – 21.40	0.20 – 2.75
Dense fine to coarse rounded or sub-angular flint GRAVEL with grey medium to coarse silty sand and occasional flint cobbles.			
London Clay Formation			
Stiff to very stiff mottled bluish grey/reddish brown fissured silty CLAY with dark grey and brown silt partings, occasional scattered selenite crystals (in TL52SE175)	12.65 – 21.75	15.00 – 25.00**	0.30 – 10.70***

*Not encountered at all locations, **Base not proven, ***Thickness not proven.

Figure 2.5 presents a cross section of the approximate distribution of geological units within close proximity to the site. It represents the Kesgrave Beds as a lens in between the Lowestoft Formation and London Clay Formation. The Kesgrave Beds are found interbedded with the Lowestoft Formation, and so there is variation in the encountered depths and thickness of the unit within the BGS boreholes. This variation in the spatial distribution also means that the unit sometimes much thinner, or absent, within some of the borehole logs reviewed.

Figure 2.5: Geological Cross-Section



Source: BGS Maps (British Geological Survey, 1990)

2.4.1 Groundwater Observations

A summary of the groundwater strikes from the BGS borehole logs are presented below in Table 2.7.

Table 2.7: Summary of Groundwater Strikes

BGS Reference	Strike (m bgl) [m AOD]	Strata	Groundwater	Groundwater Seepage
TL52SE185	16.45 [89.10]	Kesgrave Sand and Gravel	Rose to 8.3m in 20 minutes	9.8m
TL52SE174	9.90 [93.85]	Kesgrave Sand and Gravel	Rose to 4.9m in 20 minutes	4.25m and 9.0m
TL52SE182	6.75 [97.15]	Kesgrave Sand and Gravel	Rose to 6.55m in 20 minutes	-
TL52SE175	11.70 [86.90]	Kesgrave Sand and Gravel	Rose to 3.05m in 30 minutes	-
TL52SE186	11.80 [95.15]	Lowestoft Formation	Rose to 10.55m in 20 minutes	5.4m
	18.80 [88.15]	Kesgrave Sand and Gravel	Rose to 11.30m in 20 minutes	
TL52SE183	12.80 [92.6]	Lowestoft Formation	Rose to 9.35m in 20 minutes	into borehole over weekend at 18.60m
TL52SE187	12.50 [94.45]	Lowestoft Formation	Rose to 12.20m in 20 minutes	into borehole overnight at 10.00m, rose to 9.80m
	18.90 [88.05]	Kesgrave Sand and Gravel	Groundwater rose to 13.80m in 20 minutes	
TL52SE13	3.20 [100.10] and 15.90 [87.40]	Lowestoft Formation	-	-
TL52SE14	6.30 [93.70]	Possible Kesgrave Beds	-	-
	8.60 [91.40]	Lowestoft Formation		

It is evident from the historical groundwater monitoring that the average rise of groundwater after 20 minutes within the Kesgrave Beds is greater than 5m and for the Lowestoft Formation is less than 2m. This indicates that the Kesgrave Bed is under confined sub-artesian conditions with the Lowestoft acting as an aquiclude. Among the groundwater observations, two boreholes (TL52SE186 and TL52SE187) showed multiple groundwater strikes at different locations within different units. This suggests that the groundwater is not continuous within the substratum, or there is presence of perched groundwater within the Lowestoft Formation.

2.4.2 Geotechnical Testing

The results of the in-situ testing that is available from the available borehole logs are summarised in Table 2.8.

Table 2.8: Summary of in-situ testing

Test	Unit	Number of Tests	Minimum	Maximum	Mean	Median
Standard Penetration Test (SPT)	Lowestoft Formation	68	14	45	27.5	26
	Kesgrave Sand and Gravel	13	16	49	27.1	22
	London Clay Formation	16	23	53	38.9	39

The SPT results within the Lowestoft formation shows an increasing trend with depth, and lower values at the boundary between Kesgrave Beds.

Based upon the above values and according to BS 5930+A1 (2020), the Kesgrave Sand and Gravel can be categorised under ‘medium dense’ in terms of the relative density, which is consistent with the borehole logs.

There are few SPT values available for London Clay, which is recorded as more than 50 at depths. This, and the other data, suggests that the unit is getting stiffer with depth.

2.5 Past Ground Investigation within close proximity

2.5.1 2017 Ground Investigation – Ramboll Environ/ ST Consult

Concerning the development of a multi-storey car park at London Stansted Airport a ground investigation was carried out by Ramboll Environ in August 2017. As part of their scope a desk study was undertaken, and a combined geotechnical and geo-environmental intrusive ground investigation was designed. ST Consult was appointed as specialist ground investigation contractor for the works and undertook the fieldwork between 30th May and 13th June 2017. Fieldwork comprised of:

- 6 no. cable percussion (CP) boreholes bored to a maximum depth of 30.0m bgl, using 2000/3000 shell and auger rigs: BH1 to BH6;
- 5 no. windowless sample (WS) holes to a depth of 6.45m bgl, drilled using a using an Archway Dart windowless sampler rig: WS1 to WS5;
- 3 no. machine-excavated trial pits to a maximum depth of 2.7m bgl, excavated using a 5-tonne tracked excavator with a 450mm bucket: S1 to S3 and S3a;
- Obtaining disturbed and undisturbed geotechnical samples for testing from the above exploratory holes;
- Geo-environmental sampling of soils and groundwater for analyses;
- 5 no. TRL Dynamic Cone Penetrometer (DCP) tests, from 0.5 to 2.0m bgl at each of the WS hole locations;
- Trial pit soakaway tests within each of the trial pit holes;
- In-situ Standard Penetration Tests (SPT) at regular intervals within the CP boreholes and WS holes;
- In-situ hand penetrometer tests on samples of cohesive soil recovered from the exploratory holes;
- Installation of groundwater and gas monitoring equipment.

Geotechnical and geo-environmental laboratory testing of samples collected from exploratory holes was undertaken by i2 Analytical Ltd, sub-contracted by ST Consult.

2.5.2 2017 Ground Investigation – Volkerfitzpatrick Ltd

A ground investigation scheduled by Volkerfitzpatrick Ltd was carried out in November 2017 regarding the echo compound expansion. No GIR or desk study has been made available for review, results of in-situ test data and limited laboratory testing has been assessed. Ground investigation comprised:

- 13 no. made ground samples collected
- 12 no. plate bearing tests (PBT)
- 6 no. dynamic cone penetration (DCP) tests
- 9 no. plate loading tests (PLT)
- 9 no. California bearing ratio (CBR) tests
- 14 no. moisture content tests
- 1 no. chemical test

2.5.3 2018 Ground Investigation – ST Consult

For the development of the Stansted Arrivals Building (ST Consult, 2018), a factual ground investigation report was delivered by ST Consult with the scope of the investigation provided by Ramboll UK/Marriott Civils. Fieldwork was undertaken between 6th-17th August 2018, 250m to the SW of the proposed development site and comprised:

- 7 no. Cable Percussion (CP) boreholes bored to a maximum depth of 40.0m bgl, using Dando 2000 shell and auger rigs: BH1 to BH6, BH5 had to be rebored at location 5A due to obstruction.

- 7 no. windowless sample (WS) holes to a depth of 6.45m bgl, bored using a using an Archway Dart windowless sampler rig: WS1 to WS7
- 6 no. dynamic probes (by same rig)
- 7 no. TRL dynamic cone CBR probes
- In-situ Standard Penetration Tests (SPT) at regular intervals within the CP boreholes and WS holes
- Installation of groundwater and gas monitoring equipment.
- In-situ hand penetrometer tests on samples of disturbed cohesive soil recovered from the exploratory holes.

Geotechnical laboratory and geo-environmental testing of samples collected from exploratory holes was undertaken by i2 Analytical Ltd, sub-contracted by ST Consult.

2.5.4 2022 GI – SOCOTEC UK Ltd.

A ground investigation was scoped by Mott MacDonald and undertaken by SOCOTEC UK Limited for Marriott Civils at Stansted Airport, to inform a previously proposed project (located approximately 200m north-east of proposed site (Terminal 1)) and associated pier in May 2022. The GI comprised of the following:

- Twelve cable percussion boreholes up to 20.60m depth (CP01 to CP11, RC02A).
- Five dynamic sampling with rotary core follow-on boreholes up to 26.5m depth (RC01, RC01A, RC02 to RC04).
- Twenty dynamic sampling boreholes up to 5.45m depth (DS01 to DS20).
- Fourteen machine excavated trial pits up to 4.0m depth (TP01 to TP14).
- Fifteen Cone Penetration Tests up to 18.20m depth (CPT01 to CPT15) with seismic soundings.

The location plan of the above exploratory holes with respect to the proposed site is shown in Figure 2.6.

Figure 2.6: Past GI Borehole Location Plan

Source: SOCOTEC GI Factual Report, 2023

The ground model derived from the past GI exploratory holes is presented in Table 2.9.

Table 2.9: Ground model from past GI

Strata	Top Depth (m bgl)	Bottom Depth (m bgl)	Thickness (m)
Made Ground/Topsoil Described as a variety of materials: Grey angular to subangular medium to coarse GRAVEL of concrete and brick with high cobble content. Cobbles are of concrete and brick. Light brownish grey silty gravelly fine to coarse SAND with rare rootlets. Gravel is angular to subrounded, fine to coarse of flint and chalk, or; Firm to stiff mottled dark brown and grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of flint, brick and macadam, or; Light grey CONCRETE with rebar and medium cobble content and fine to medium sand. Cobbles are angular of brick. (Reworked LOWESTOFT FORMATION),	0.00	0.10 – 5.50	0.10 – 5.50
Possible Head Deposits (Encountered in TP04 and TP11) Firm brown mottled light grey gravelly CLAY with pockets of black peat/clay. Gravel is angular to subangular, fine to coarse of flint and Chalk, with frequent orangish brown staining, occasional wood fragments (up to 200x100mm).	1.40 – 2.10	2.40 – 2.90	0.30 – 1.50
Lowestoft Formation			

Strata	Top Depth (m bgl)	Bottom Depth (m bgl)	Thickness (m)
Firm to stiff mottled dark grey and brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to rounded, fine to coarse of Chalk.	0.10 – 20.20	1.50 – 23.28	0.10 – 19.36
Kesgrave Sands and Gravels Medium/very dense grey and white slightly sandy silty rounded to subrounded fine to medium GRAVEL of chalk and flint. Sand is fine to coarse, or; Loose brown, white and grey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk, or; Light grey and grey clayey fine to coarse SAND.	5.00 – 19.30	6.00 – 20.20	0.30 – 2.56
London Clay Formation Stiff to very stiff brownish grey slightly sandy silty micaceous laminated CLAY with occasional lenses of light brown silt/fine sand and rare trace fossils. Sand is fine to medium. Rare claystone nodules, fissures are randomly orientated closely and medium spaced randomly orientated planar smooth clean.	21.75 – 23.28	25.80 – 26.50*	3.22 – 4.12**

*Base not proven, **Thickness not proven

It should be noted that the Head deposits that has been mapped within the trial pits (TP04 and TP11) is not mapped in the 1:50,000 BGS Geoindex superficial deposits. Also, as per the borehole logs, some of the Lowestoft Formation is described as Sand and Gravel which is now interpreted in Table 2.9 as Kesgrave Beds.

The following field tests were carried out as part of the GI (see Table 2.10):

Table 2.10: Summary of field tests of past GI

Type	Quantity	Remarks
Plate Loading Test	7	Conducted within trial pits TP01, TP04 to TP07, TP13 AND TP14
Dynamic Cone Penetrometer	7	Carried out within trial pits TP01, TP04 to TP07, TP13 AND TP14 using TRL probe. CBR values calculated.

Ground gas and groundwater monitoring instrumentation was installed in selected boreholes as specified by MML. A programme of groundwater and ground gas monitoring after GI was undertaken over a period of four months by SOCOTEC. The details of the groundwater observations during the GI are given in Table 2.11, and monitoring are presented in Table 2.12

Table 2.11: Summary of Groundwater strikes of past GI

Exploratory hole Reference	Depth (m bgl) [m AOD]	Unit	Groundwater	Remarks
CP01	12.50 [92.29]	Kesgrave Gravel	Rose to 11.0m in 20 minutes	-
CP02	10.00 [94.63]	Lowestoft Formation	Rose to 8.63m after 20 minutes	-
CP03	13.40 [92.73]	Kesgrave Gravel	Rose to 9.30m after 20 minutes	-
CP04	12.20 [92.68]	Kesgrave Gravel	Rose to 8.30m after 20 minutes	-
CP05	1.7m [103.47]	Made Ground	Rose to 1.4m after 20 minutes	Slow seepage
	13.10 [92.07]	Kesgrave Gravel	Rose to 10.5m after 20 minutes	Seepage
CP06	10.30 [94.82]	Lowestoft Formation	Rose to 8.60m after 20 minutes	-
CP10	5.00 [99.88]	Kesgrave Sand and Gravel	Rose to 3.5m after 20 minutes	Seepage
	10.00 [94.88]	Lowestoft Formation	Rose to 9.5m after 20 minutes	Medium inflow
CP11	19.30 [85.34]	Kesgrave Sand	Rose to 16.35m after 20 minutes	-
DS05	2.18 [102.87]	Made Ground	Remained at 2.18m after 20 minutes	-

Exploratory hole Reference	Depth (m bgl) [m AOD]	Unit	Groundwater	Remarks
DS06	3.20 [101.80]	Made Ground	Remained at 3.20m after 20 minutes	-
DS14	2.20 [102.71]	Made Ground	Rose to 1.9m after 20 minutes	-

Table 2.12: Summary of groundwater monitoring results

Exploratory hole	Response zone (mbgl)	Ground Level (mAOD)	Groundwater level (mbgl)		Geological unit	Groundwater Depth (mbgl)
			Minimum	Maximum		
CP01	11-12.5	104.79	7.31	7.89	Lowestoft Formation	97.48
CP03	13.5-15	106.13	8.75	9.35	Lowestoft Formation	97.38
CP04	12-13.5	104.88	4.23	8.16	Lowestoft Formation	100.65
CP06	9.0-11.0	105.12	4.23	4.75	Lowestoft Formation	100.89
CP07	5-20.05	104.28	5.12	7.52	Lowestoft Formation	99.16
CP09	4.5-7	104.9	1.75	6.47	Lowestoft Formation	103.15
CP10	10-11.0	104.88	2.22	2.55	Lowestoft Formation	102.66
CP11	16-18.5	104.64	0.95	5.6	Lowestoft Formation	103.69
DS03	2-3.0	105.5	0.47	1.3	Made Ground	105.03
DS05	1.5-3.5	105.05	1.14	1.97	Made Ground	103.91
DS06	1-3.4	105	1.76	2.69	Made Ground	103.24
DS08	0.8-1.7	104.75	1.2	1.59	Made Ground/ reworked Lowestoft Formation	103.55
DS10	0.5-2	104.43	1.81	1.85	Lowestoft Formation/ Made Ground	102.62
DS13	1.5-4.5	105.06	2.31	3.77	Made Ground/Lowestoft Formation	102.75
DS18	3.5-5.5	105.8	1.57	4.75	Lowestoft Formation	104.23
DS19	3-4.5	104.34	1.9	3.57	Lowestoft Formation	102.44
RC01	2.5-5.5	106.23	1.05	5.54	Lowestoft Formation	105.18
RC02	22.5-25.9	105.24	7.73	10.6	London Clay Formation	97.51
RC03	22.5-25	103.85	2.47	11.53	London Clay Formation	101.38
RC04	5.5-9.5	104.35	0	2.15	Lowestoft Formation	104.35

Geotechnical laboratory testing of samples was undertaken by Pro Soils Laboratory (PSL) in accordance with the required standards. The summary of the laboratory testing is as shown in Table 2.13.

Table 2.13: Summary of Laboratory Testing

Test type	Quantity
Classification / Index tests	
Water content	222
Atterberg Limits	174
Particle Density	26
Particle Size Distribution	44
Strength Tests	
Unconsolidated Undrained Triaxial Compression	50
Consolidated Undrained Triaxial Compression	17
Compaction / Earthworks Tests	
Compaction (light) 2.5kg	2
California Bearing Ratio (CBR)	2
Moisture condition value / water content relationship	2

Test type	Quantity
Consolidation Tests	
One-Dimensional (Oedometer) Tests	30
Geochemical tests	
pH and sulphate contents	50
Organic matter content	13

Sampling of groundwater from borehole installations was also done as part of the post-fieldwork monitoring and sampling programme. The results revealed some exceedances relative to the UK Drinking Water Standard (DWS) and the Environmental Quality Standard (EQS) guideline values which are summarised herein in Table 2.14. Similarly, groundwater monitoring results were summarised in Table 2.12 showing groundwater levels over the monitoring period.

Table 2.14: Exceedances recorded for groundwater tests conducted in past GI

Exploratory Hole	Determinand	DWS (mg/l)	EQS (mg/l)	Recorded concentration (mg/l)	Geology
CP03	Ammoniacal Nitrogen	0.38	-	0.51	Lowestoft Formation
CP04	Ammoniacal Nitrogen	0.38	-	0.69	Lowestoft Formation
CP07	Sulphate	250	-	890-900	Lowestoft Formation
	Calcium	250	-	300-360	
	Sodium	200	-	220	
	Manganese	0.123	0.05	0.15-0.37	
	Magnesium	50	-	58-76	
CP10	Sulphate	250	-	400	Lowestoft Formation
	Sodium	200	-	330	
	Manganese	0.123	0.05	0.061	
CP11	Sulphate	250	-	580-640	Lowestoft Formation
	Manganese	0.123	0.05	0.088	
	Sodium	200	-	300-440	
RC01	Sulphate	250	-	300	Lowestoft Formation
	Sodium	200	-	340	
RC02	Sulphate	250	-	310-350	London Clay Formation
	Magnesium	50	-	59	
RC03	Sulphate	250	-	410	London Clay Formation
	Ammoniacal Nitrogen	0.38	-	0.46	
	Sulphate	250	-	370	
	Magnesium	50	-	62	
DS03	Nitrate	50	-	69	Made Ground
	Sulphate	250	-	470	
DS06	Ammoniacal Nitrogen	0.38	-	7.6	Made Ground
	Sulphate	250	-	260	
DS13	Ammoniacal Nitrogen	0.38	-	1.1-1.2	Made Ground / Lowestoft Formation
	Sulphate	250	-	290	

*Locations not reported within this table did not record any exceedances. *Ranges are provided where exceedances were identified in each of the two sampling rounds conducted at this location

In addition to these, geo-environmental laboratory testing was scheduled by MML on selected soil samples and was conducted by Eurofins Chemtest Ltd. (Chemtest) in accordance with relevant test methods.

For more details, reference should be made to the below document:

- Ground Investigation Report (Factual account of Fieldwork, Monitoring and Laboratory Testing) – SOCOTEC, Report No. D2027-22, April 2023.

3.0 Preliminary Geotechnical Assessment

The following sections identify potential geotechnical risks associated with the proposed development based on the anticipated geology likely to be encountered at the site. The risks identified below should be reviewed and revised accordingly on completion of any further investigation.

3.1 Geological Considerations

Below is a summary of the potential geotechnical risks associated with the likely geology to be encountered at the site. It has been assumed that any topsoil will be removed prior to the commencement of excavation. The risks identified below should be reviewed and revised accordingly on completion of any further investigation, a detailed geotechnical risk register is presented in Section 4.

3.1.1 Made Ground

Although not recorded in the BGS mapping, Made Ground was encountered within multiple historical BGS boreholes to less than 2.0m thickness. The engineering description for the material encountered is unknown. From the past GI, the Made Ground is encountered up to a depth of 5.50m and is composed of varied materials including fine to coarse grained. Hence the below general considerations shall be associated for the unit in terms of geotechnical risks:

- The extent, thickness and composition of Made Ground is likely to be variable.
- Colchester Hall, and the associated moat, that is identified in historical maps at the centre of the site boundary is suspected to be infilled, but the infill material is unknown. 'Pincey Brook' is also shown on historical maps to cross the Satellite 3 location to the northeast of site in an east-west direction, is suspected to be infilled. However, there is no evidence of the material used for this and it is unlikely to affect the site within the redline.
- There is a potential for material to be contaminated as there are evidence of past industrial activities at the site including offsite petrol and fuel station storage tanks, and tanks associated with previous onsite historical activities.
- Depending on the composition of material, it may be of low strength and high compressibility if a cohesive material is encountered. If the Made Ground is composed of granular material, proper support should be provided for the excavation as it is likely to be at risk of instability / collapse.
- There is the potential for material of an anthropogenic nature within the site which may create large obstruction during the proposed intrusive works on-site.
- There is a potential for concrete to be attacked by aggressive ground.
- If a significant thickness of Made Ground is present, then it is possible it could act as a source of ground gas accumulating in areas of confined space, such as excavations. However, based on the available data, this is seen as low risk.

In addition to the above, there are potential contamination risks associated with the proposed demolition works on site (see Section 1.1).

3.1.2 Lowestoft Formation

Lowestoft Formation (Glacial Till) is identified across the site. The unit is typically described as a firm to stiff gravelly silty clay. The unit is variable in thickness that ranges between up to 21.50m from the various exploratory holes of historical and past GI. It is encountered below topsoil / Made Ground in all the borehole logs, and generally found above the Kesgrave Formation, but occasionally is interbedded with this unit.

The geotechnical risks associated with Lowestoft Formation are presented below:

- The strength and compressibility may vary with depth, this could lead to differential settlement.
- Groundwater is likely to be encountered within the unit, which may impact shallow excavations or the bearing capacity of the unit for shallow foundations.
- The plasticity of the clay may result in shrinking or swelling, depending on the groundwater level and weather conditions.

- Obstructions may be encountered within the unit, such as cobbles or boulders, which may lead to difficulties in undertaking intrusive works.
- If the unit has high silt content, the unit could be susceptible to freezing and therefore could undergo frost heave.

3.1.3 Kesgrave Sand and Gravel Formation

The Kesgrave Formation is found underlying, or sometimes interbedded with, the Lowestoft Formation. It is a relatively thin layer of less than 3.0m thickness of medium dense fine to coarse brown sand with fine to medium coarse gravel of flint. It is also encountered as dense fine to coarse rounded or sub-angular flint gravel with grey medium to coarse silty sand and occasional flint cobbles. The geotechnical risks associated with this unit are summarised below:

- Differential settlement may occur due to variation in composition, thickness, and relative density of the unit across the site.
- Obstructions may be encountered, such as cobbles, which could lead to difficulty in undertaking any intrusive works.
- Groundwater is likely to be encountered within the unit.
- The permeability of the unit is unknown.

3.1.4 London Clay Formation

The bedrock of the site is London Clay Formation, described as stiff to very stiff mottled bluish grey/reddish brown fissured silty clay with dark grey and brown silt partings. These are encountered at depths beyond 15.0m bgl to 26.0m bgl, with no proven thickness.

The geotechnical risks associated with the London Clay Formation are presented below:

- The strength and compressibility may vary with depth due to the differing amount of weathering within the unit, this could result in differential settlement.
- The presence of selenite crystals, gypsum/iron pyrite could present aggressive ground conditions to any below ground infrastructure and concrete.
- If beds of siltstone or mudstone are encountered, these may present an obstruction to intrusive works (e.g. deep foundations).

3.2 Engineering Considerations

Based on the proposed works at the site, and review of the developments within the surrounding area, it is likely that for lightly loaded structures a shallow foundation solution may be feasible. However, the other developments with moderate to heavy loading may require a piled foundation solution.

For shallow foundations, it will be key to understand the presence, thickness and properties of both the Made Ground and Lowestoft Formation. Additionally, the Made Ground will also require assessment with respect to any contaminants present. Consideration will need to be made with respect to the settlement limits (both total and differential) in the design of any shallow foundations.

For deep foundation, such as piled foundations, the properties of deeper units such as Kesgrave Beds and London Clay Formation will be more critical. Additionally, the risk of aggressive ground within the London Clay will require consideration.

The interaction with adjacent structures, and infrastructure, will also require consideration. The current terminal building is constructed on shallow foundations and therefore differential movement will require consideration in design.

For any ground bearing elements such as slabs, pavements and drainage consideration will need to be made of differential settlement limits, and localised variation in properties. It is however likely that the expected ground conditions will be a suitable founding stratum for these elements without ground improvement. Frost susceptibility should be considered, as it is possible that units at subformation level may have high silt content.

Based on the anticipated ground conditions, infiltration rates are anticipated to be low, meaning that soakaway drainage is unlikely to be feasible.

3.3 Groundwater Considerations

Multiple groundwater strikes were recorded within the historical records reviewed between 1.7m bgl and 19.3m bgl within the Made Ground, Lowestoft Formation and Kesgrave Formation. The groundwater observations for the past GI showed results of average groundwater rise after 20 minutes of water strike between 2.75m to 5m for the Kesgrave Beds and less than 2.0m for the Lowestoft Formation. There were also recorded groundwater strikes in Made Ground unit, with no significant rise.

As mentioned previously, it is evident from the historical groundwater observations that the Kesgrave Sand and Gravel is under confined sub-artesian conditions with the Lowestoft Formation acting as an aquiclude. Also, it was inferred that the groundwater is not continuous within the ground as the water is encountered within multiple units in some boreholes. This might be also due to the presence perched groundwater within the Made Ground and Lowestoft Formation.

The presence of groundwater within each of the above units will require consideration in design of any shallow or deep foundations, as well as taking into consideration when reviewing constructability and any required temporary works.

4.0 Geotechnical Risk Register

The Geotechnical Risk Register should be considered as a live document and should be updated throughout the course of the scheme. It is incumbent on all parties involved in the scheme to advise the other members when the risks change or develop.

Various threats are identified, and the potential consequence of these occurring are described in the register. The risk is derived by considering the severity of and likelihood for each risk and opportunity. Both the severity and likelihood have been assessed using a scale of 1 to 5, corresponding from “Minor” to “Catastrophic” for the severity and from “Extremely Unlikely” to “Almost Certain” for the likelihood. These ratings are summarised in Table 4.1: Risk Level Matrix, Table 4.2 and Table 4.3.

The geotechnical Risk Register for this scheme is presented below in Table 4.4.

Table 4.1: Risk Level Matrix

Likelihood		Severity				
		1	2	3	4	5
		Minor	Moderate	Serious	Major	Catastrophic
1	Extremely unlikely	1	2	3	4	5
2	Unlikely	2	4	6	8	10
3	Likely	3	6	9	12	15
4	Extremely Likely	4	8	12	16	20
5	Almost Certain	5	10	15	20	25

Table 4.2: Hazard Severity Table

Potential severity of harm occurring		
1	Minor	Minor damage or loss – (no human injury).
2	Moderate	Moderate damage or loss – (Slight injury or illness)
3	Serious	Substantial damage or loss – (Serios injury or illness)
4	Major	Major damage or loss – (Fatal injury)
5	Catastrophic	Catastrophic loss or damage – (Multiple Fatalities)

Table 4.3: Hazard Severity Table

Risk Classification	
Low (1-8)	Ensure assumed control measures are maintained and reviewed as necessary.
Medium (9-19)	Additional control measures needed to reduce risk rating to a level that is equivalent to a test of “reasonably required” for.
High (20-25)	Activity not permitted. Hazard to be avoided or risk to be reduced to tolerable level.

A ground investigation can help to mitigate ground and groundwater risks; however, these risks cannot be eliminated. Ground investigations by their nature can only investigate and monitor a small part of the subsurface conditions for a limited duration. Conditions on site identified during construction could reveal ground conditions that could not have been considered from the results of the ground investigation.

It is recommended that adequate and appropriate supervision must be provided during construction to assess the ground conditions encountered and interpret the result of the site testing. When appropriate, this

supervision during construction should be undertaken by a suitably experienced and qualified Engineering Geologist/Geotechnical Engineer.

Table 4.4 highlights the potential hazards that could be encountered during the site investigation and/or construction. The consequence of the hazard is outlined, and a score is given for the impact and likelihood for this hazard, leading to a rescoring of the impact and likelihood, resulting in a residual risk.

Table 4.4: Geotechnical Risk Register

Hazard	Consequence	Likelihood	Severity	Risk	Mitigation	Likelihood	Severity	
1. Made Ground	• Made Ground is likely to be encountered in varying thickness, and with varying composition, across the site. • Material could potentially be of low strength and high compressibility. • Unknown infill material of and Colchester Hall moat (and 'Pincey Brook'). • May contain perched water (see 9). • Potential for obstructions to intrusive works. • There is potential for material to be contaminated (see 14). • Potential for Aggressive Ground (see 5). • Potential for ground gas to be generated.	3	4	**Medium**	• A detailed Ground Investigation is required to determine the extent and properties of Made ground, this can be utilised to inform design. • Investigation should target areas that historically may have been infilled. • Use of correct personal protective equipment (PPE). • Samples should be taken from the Made Ground and tested for contamination. • Adopt best practice in undertaking any intrusive works.	2	4	**Low**
2. Lowestoft Formation	• Risk of differential settlement due to variable strength and compressibility. • Groundwater is likely to be encountered within the unit (see 9). • The material may be susceptible to shrinking or swelling. • Potential for obstructions (e.g. cobbles or boulders) to intrusive works. • The unit could be susceptible to undergo frost heave.	3	3	**Medium**	• A detailed Ground Investigation obtain samples of the material. Laboratory and in-situ testing to determine the geotechnical properties and parameters of the material. • Detailed design to take into account the findings of the GI.	2	3	**Low**
3. Kesgrave Sand and Gravel	• Differential settlement may occur due to variation in composition, thickness and relative density of the unit. • Risk of obstructions. • Groundwater is likely to be encountered within the unit (see 9). • Unknown permeability characteristic of the unit.	2	2	**Low**	• A detailed Ground Investigation obtain samples of the material. Laboratory and in-situ testing to determine the geotechnical properties and parameters of the material. • Detailed design to take into account the findings of the GI.	1	2	**Low**

Hazard		Consequence	Likelihood	Severity	Risk	Mitigation	Likelihood	Severity	
4.	**London Clay Formation**	• Risk of differential settlement due to variable strength and compressibility. • Beds of mudstone/siltstone may pose obstructions to deep foundations. • Risk of aggressive ground condition (see 5)	2	2	**Low**	• A detailed Ground Investigation obtain samples of the material. Laboratory and in-situ testing to determine the geotechnical properties and parameters of the material. • Detailed design to take into account the findings of the GI.	1	2	**Low**
5.	**Aggressive Ground Conditions**	• There is likely to be a high concentration of sulphates within the London Clay Formation caused by the presence of pyrite and selenite crystals that is likely to chemically attack any concrete. • Potential to encounter sulphates locally in Made Ground.	3	3	**Medium**	• Appropriate testing of both groundwater and soil samples from GI is recommended. • Application of an appropriate concrete mix, based on the GI results should be used.	2	3	**Low**
6.	**Ecology**	• Damage of ecologically important habitats.	2	3	**Low**	• Review of any ecological surveys and consult ecological expert prior to any works on site.	1	3	**Low**
7.	**Archaeology**	• Damage of areas of archaeological importance as there is evidence of potentially historically important areas such as Colchester Hall (and its associated moat) within site boundary. • A Desk Based Assessment has been submitted to address the potential archaeology on the site. For further details, reference should be made to Stansted Airport, Terminal Extension, Essex: Historic Environment Desk-Based Assessment, 2023/73, July 2023. No further mitigation measures are deemed necessary.	1	3	**Low**	• Best practice during construction works. If anything is encountered, consultation with an archaeological specialist.	1	3	**Low**
8.	**Unexploded ordnance (UXO)**	• Potential serious injury to construction workers, damage to plant, infrastructure or structures. • The UXO map from Zetica indicates that the site is in an area of 'Low' bombing density, but there are locations of Luftwaffe Target locations and reported UXO finds at closer proximity.	3	5	**Medium**	• A UXO assessment is recommended prior to any GI or intrusive works on site. Implement any mitigation measure suggested by this assessment.	2	5	**Medium**

Hazard	Consequence	Likelihood	Severity	Risk	Mitigation	Likelihood	Severity	
9. Shallow or Perched Groundwater	• Potential to destabilise excavations. • Perched groundwater may be present in the Made Ground (as encountered in previous GI in close proximity to site). • Potential to be contaminated (see 14). • Potential cost and programme delays.	3	4	**Medium**	• Groundwater monitoring programme to be completed post GI. • Contractor to use the best practice in disposing of any contaminated groundwater or material. • Suitable dewatering techniques should be adopted for excavation.	2	4	**Low**
10. Sub Artesian Groundwater in the Kesgrave Sand and Gravel	• Potential issues during construction of deep foundations.	3	3	**Medium**	• Groundwater observation during GI. • Groundwater monitoring programme to be completed post GI.	2	3	**Low**
11. Damage to Buried Utilities / Overhead services	• Temporary loss of utility. • Cost of repair and program delays. • Possible injury or death during intrusive works on site (GI and construction).	4	5	**High**	• Thorough review of any utilities records prior to intrusive works. • A GPR (PAS 128) survey should be carried out prior to any intrusive works on site. • Due skill and care required in executing the ground investigation and in-ground construction activities. • Follow Best Practice in Avoiding Underground Services (BPAUS) or similar.	2	5	**Medium**
12. Limited Ground Investigation Data	• There is limited historical BGS data or third-party data within the site boundary. • Lack of information on thickness and extent of anticipated strata within the site boundary. • Possible unforeseen ground conditions being present underlying the site which may lead to cost and programme delays.	3	3	**Medium**	• A detailed GI is required to be undertaken at the site to determine the extent and properties of the anticipated units. • This can be utilised to inform any requirements for detailed design.	2	3	**Low**
13. Ground Gas	• Potential health hazards for the construction workers. • Potential cost and programme delays.	2	3	**Low**	• Ground gas monitoring programme to be completed post GI	1	3	**Low**
14. Soil and groundwater contamination	• Risks to operatives who come into contact with contaminated material during the works. • Risk of exposure of surrounding environment to contamination, and	3	3	**Medium**	• An assessment of on the presence of contamination within the soils and/or groundwater at site should be undertaken as part of any ground investigation works, • Environmental management during GI works	1	3	**Low**

Hazard	Consequence	Likelihood	Severity	Risk	Mitigation	Likelihood	Severity	
	Pathways could be opened up that may lead to contamination of groundwater and soils							
15. Proximity to existing structures / infrastructure	• Differential movement / settlement between existing and new elements. • Potential cost and programme delay during GI and construction works.	4	3	**Medium**	• Carry out pre-conditions survey. • Review of record drawings for existing structures and infrastructure during design • Review of differential movement tolerances • Consider installation methodology during design.	2	3	**Low**

5.0 Geo-environmental Preliminary Risk Assessment

5.1 Statutory Regime and National Guidance

The primary regulatory regime, under which contaminated land in the UK is managed, is Part IIA of the Environmental Protection Act (EPA), 1990, although numerous other subsidiary Regulations are also relevant. Part IIA primarily deals with the identification and remediation of historical contaminated sites by determining land as 'contaminated land'.

For those sites that enter the planning and redevelopment process, the developer is required to undertake sufficient assessment of the site to show whether the site is contaminated or not, and if so, to design, undertake and verify adequate remediation as part of the development to ensure that a site is suitable for its proposed use.

To support the assessment of sites through the development process, the Environment Agency has developed its Land Contamination: Risk Management (LCRM) guidance. In addition to this, there are numerous industry guidance documents as well as British Standards that provide practitioners and developers with guidance on specific aspects of contamination assessments.

Guidance that has been used in the preparation of this assessment includes the LCRM, as well as:

- BS 10175: Investigation of potentially contaminated sites: Code of Practice (2017);
- NHBC R&D 66: Guidance on the safe development of housing on land affected by contamination (2008);
- BS 85768: Guidance on investigations for ground gas – Permanent gases and volatile organic compounds (VOCs) (2013); and
- CIRIA C665: Assessing the risks posed by hazardous ground gases to buildings (2007)

Following the procedures in LCRM, a key element of the Preliminary Risk Assessment is the development of a conceptual model which may be refined or revised as more information and understanding is obtained through the risk assessment process. The conceptual model is described in terms of the contaminant Sources, transport Pathways and possible Receptors that may be present, and the potential 'Pollutant Linkages' between them, as defined in the relevant legislation and guidance. These activities are described in CIRIA C552 as "hazard identification".

A checklist of LCRM requirements for PRA is presented in Appendix F along with the relevant professional and academic qualifications of the persons involved in the production of the land contamination element of this report.

5.1.1 Planning Framework

National

New development is largely regulated under the Town and Country Planning Act 1990 (as amended). This regime provides a mechanism for the planning authority to enforce the proper investigation of a development site in order to ensure that once development has occurred, the site is suitable for its intended use. In England the National Planning Policy Framework (NPPF) provides guidance on the implementation of contaminated land and pollution management requirements to address contamination risks associated with future site uses through the planning system. Paragraphs 183 and 184, and 185 of the NPPF state the following:

183: Planning Policies and decisions should ensure that:

- A site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential threats 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 available to inform these assessments.

- 184: Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

185: Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

Local

Policy ENV14 (Contaminated Land) of the Uttlesford Local Plan Policy states the following:

"Before development, where a site is known or strongly suspected to be contaminated, and this is causing or may cause significant harm, or pollution of controlled waters (including groundwater) the site investigation, risk assessment, proposals and timetable for remediation will be required."

5.2 Framework for contamination assessment

The key aspects of the framework are the development of a CSM, which demonstrates the connectivity and interaction between the potential sources and on-site receptors. The CSM may be refined or reviewed as more information and understanding is obtained through the risk assessment process.

For risk of pollution or environmental harm to occur because of ground contamination, all of the following must be present:

- Source – a substance capable of causing pollution or harm;
- Pathway – something that could be adversely affected by the contaminants; and
- Receptor – a route by which the contaminant source can reach the receptor.
- In the absence of any one of the above, no significant risk is said to be in existence. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptors and the nature of the migration pathway.
- Potential sources, pathways and receptors have been identified in the sections below and the risks associated with possible pollutant linkages have been identified.

5.2.1 Contaminants of Concern

Based on the information gathered on the site and surrounding area, the following contaminants were identified to likely affect the proposed development as summarised herein in Table 5.1.

5.2.1.1 Perfluoroalkyl and Polyfluoroalkyl Substances

The site area is within a wider airport location which has been operational since the 1990s. Airports are a common source of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) contaminants which are present in firefighting foams. These will tend to be more concentrated in areas of high foam usage or storage, particularly fire training grounds, where foams have been applied on fires or incidents. For this site, the following are noted with regards to PFAS contamination:

- A fire station is located approximately 500m south-west;
- There are no known storage of firefighting foams at the site location;
- No historical foam spray offs are known;
- No aircraft incidents that required firefighting foams and;
- No recorded fire suppression systems.

Whilst use of PFAS containing foams is not recorded within the development site boundary, it would be prudent to consider PFAS as a potential contaminant in site investigations.

5.2.1.2 Bulk aviation fuel distribution system and tanks

The existing apron areas are served by a bulk aviation fuel distribution system which comprises a 20 inch main and various subsidiary mains. The fuel line crosses the locations of the proposed skylinks at each satellite and is approximately 40m north of the proposed terminal extension. No leaks from the fuel distribution system have been made aware to Mott MacDonald and the site operates under an existing environmental management system. Bulk aviation fuel distribution tanks are not present in the development boundary.

Although tanks were identified offsite from historical mapping associated with a former depot at the southernmost location of the proposed skywalk footprint around satellite 1, the contents of the tanks is unknown.

5.2.1.3 Off-site sources

Several off-site sources are noted by this study this includes the exiting Stansted Railway terminus and associated running lines 75m to the south of the proposed baggage handling building as well as cargo handling and road haulage operations some 380m to the south west. Given the distance and /or nature of these potential sources, these have been discounted in the assessment of risk.

Table 5.1: Contaminants of concern

Land Use	Location	Potential contaminants
Airport – leaks and spills of hydraulic oils, use of glycols, firefighting foams, waste storage, TTS maintenance operations, electrical equipment*	Onsite/adjacent (TTS maintenance)	Fuels including, diesel, organic solvents, anti-freeze and di-icing agents, asbestos, lubricants, herbicides, firefighting agents such as aqueous film forming foams (AFFS) which can contain per and poly fluoro alkyl substances (PFAS).
Bulk aviation fuel distribution system and former tanks	Onsite/adjacent fuel main	Aviation fuel – petroleum hydrocarbons principally comprising hydrocarbons in the C8 to C17 range with the majority in the C10 to C14 range. Phenols used as anti-oxidants and organoboron compounds as biocides.
Infilling/made ground	Onsite	Depending on source of infill materials these can contain a variety of contaminants including metals, PAH and asbestos. However, in the case of virgin quarried aggregate that may also have been utilised, this would generally expected to be uncontaminated.

* Due to age of Stansted Airport, it is considered unlikely that polychlorinated biphenyl containing oils are present on-site as these were banned from use in new equipment in the UK in 1981.

5.2.2 Sources

S1: Contamination associated with land use as an airport – possible spills or leaks of oils, oil filled electrical equipment, glcyols, use of fire fighting foams etc.

S2: Bulk fuel storage and distribution – onsite aviation fuel distribution lines, and potential former tanks around Satellite 3.

S3: Possible localised infilling of unnamed drains, former moat previously onsite or other unidentified areas of made ground.

5.2.3 Pathways

P1: Human health uptake pathways (inhalation, ingestion and direct contact)

P2: Wind-blown dust during demolition and construction

P3: Vertical and horizontal migration of contaminants in the unsaturated zone

P4: Vertical and horizontal migration of contaminants in the saturated zone

P5: Run-off

P6: Man-made pathways e.g., piles and deep foundations (if required as part of extension)

P7: Migration of ground gases and/or vapours.

P8: Direct contact with construction materials and buried infrastructure.

5.2.4 Receptors

R1: Construction workers during construction of the proposed development

R2: Final end users – passengers, airport staff including maintenance workers.

R3: Off-site/adjacent land users during construction

R4: Built environment/already existing buildings.

R5a: Groundwater – Lowestoft Formation (Secondary Undifferentiated aquifer)

R5b: Groundwater – Kesgrave Formation (Secondary A aquifer)

R6: Surface water receptors – Pincey Brook in a culvert to the west and water course to the east

5.2.5 Conceptual Site Model and Risk Assessment Assumptions.

The following assumptions are made for the development of the conceptual site model and subsequent risk assessment:

- All construction workers will be managed by the requirements of CDM 2015 and activity specific method statements which will inform the need for appropriate personal protective equipment (PPE) including respiratory protective equipment for any works undertaken in enclosed spaces;
- Groundwater is present in the underlying Kesgrave and as a possible discontinuous body in the overlaying Lowestoft Formation which appears to be acting as an aquiclude. Groundwater flow direction are difficult to determine based on historical data and may be influenced by the two surface water catchments to the east (River Rodding) and southwest (Pincey Brook);
- Strata below the London Clay Formation are discounted in the risk assessment due to the considerable thickness of London Clay Formation and likely depth of proposed construction;
- A robust construction environmental management plan (CEMP) will be adopted during construction and as a result, no contamination will occur as a result of leaks and spills during construction and dust will be managed; and
- It should be noted that the following does not provide an assessment of risks associated with asbestos.

5.3 Preliminary Risk Assessment

Table 5.2: Preliminary Risk Assessment

Sources	Pathways	Receptors	Consequence	Probability	Unmitigated risk	Comments
S1: Contamination associated with land use as an airport – possible spills or leaks of oils, glcyols, use of fire fighting foams etc S2: Bulk fuel storage and distribution – onsite aviation fuel distribution lines and potential former tanks around Satellite 3. S3: Possible localised infilling of unnamed drains and moat previously onsite or other unidentified areas of made ground.	P1: Human health uptake pathways (inhalation, ingestion and direct contact)	R1: Construction workers	Medium	Unlikely	Low	Construction workers are likely to contact contaminated materials during the course of ground works, activities will be required to be controlled by CDM 2015 which would reduce risks. Fill material to former drains and the moat onsite are currently unknown. No major sources of ground gas (e.g. landfills) have been identified however there is the potential for gases/vapours to be encountered due to organic sources of pollution at the site. Whilst aviation fuel is principally not formed of volatile hydrocarbons, degradation products under anaerobic conditions could include methane. Risk to final end users are generally assessed as low given the presence of hard standing and buildings across the development site with a slightly higher moderate/low risk relating to ground gases/vapours. This risk would principally be associated with the terminal extension. Whilst the probability of this linkage occurring is considered to be low, further assessment of long term risks are recommended through the undertaking of a ground investigation. The results of any additional assessment should be discussed as part of a further risk assessment report once investigations are complete. A subsequent assessment of the need for gas/vapour protection measures in any enclosed structures may then need to be undertaken (in accordance with CIRIA C665 and BS8485). Risks to off-site receptors during construction are managed by implementing a CEMP to control dusts.
	P7: Migration of ground gases or vapours. Then P1: Human health uptake pathways (inhalation)	R2: Final end users – passengers, airport staff including maintenance workers	Medium	Unlikely to low	Low to moderate/low	
	P2: Wind-blown dust during demolition and construction	R3: Off-site/adjacent land users during construction	Mild	Unlikely	Very low	
	P6: Man-made pathways e.g., piles and deep foundations (if required).	R5a: Groundwater secondary undifferentiated aquifer (Lowestoft Formation)	Mild	Likely	Moderate/low	The groundwater Secondary undifferentiated (Lowestoft) and the Secondary A aquifer (Kesgrave formation) are locally interbedded onsite. Presence of groundwater at as shallow depth of 0.47-2.2mbgl within the Lowestoft formation in previous GI conducted 200m offsite means

Sources	Pathways	Receptors	Consequence	Probability	Unmitigated risk	Comments
	P3: Vertical and horizontal migration of contaminants in the unsaturated zone P4: Vertical and horizontal migration of contaminants in the saturated zone	R5b: Groundwater secondary undifferentiated aquifer (Kesgrave Formation)	Mild	Low	Low	a potential contamination pathway to this aquifer. A low risk is assessed for the underlying Kesgrave due to the presence of the overlying Lowestoft Formation. Additionally, previous GI have not indicated significant groundwater contamination within the Kesgrave Formation to the north of the development site. The site does not fall within a groundwater Source Protection Zone and there are no abstraction points within 500m of the site boundary. Further assessment of groundwater beneath the site is recommend to confirm risks and inform any dewatering of excavations that may be required during construction.
	P3: Vertical and horizontal migration of contaminants in the unsaturated zone P4: Vertical and horizontal migration of contaminants in the saturated zone P5 Run off	R6: Surface water receptors – Pincey Brook in a culvert to the west and water course to the east	Mild	Unlikely	Very low	An unnamed water course is present approximately 325m to the south- east and the Pincey Brook in culvert is some 300m to the west. Risk from infiltration of contaminants through the ground at these distances is considered to be very low. Additionally, the site operates an environmental management system to control run-off.
	P8: Direct contact with construction materials and buried infrastructure.	R4: Built environment	Mild	Likely	Moderate/low	Any below-ground infrastructure should be designed to consider the prevailing ground conditions. Ground aggressivity should be assessed by a site specific ground investigation and reported in a Ground Investigation Report. Similarly, water supply pipes should be designed to account for the prevailing ground conditions. Some further testing of made ground for UKWIR suite may be required where such soils may be expected to remain in areas of new potable supply pipes. Any new below-ground infrastructure / enclosed spaces should also be designed to consider ground gas/vapour regime which should be characterised by a ground investigation.

6.0 Conclusions and Recommendations

6.1 Conclusions

A desktop-based assessment of the relevant geotechnical and geo-environmental information available for the site has been completed with the objective of identifying and summarising the potential ground related risks that may arise from this scheme.

This summary contains an overview of the key findings and conclusions of this report; however, no reliance should be placed upon any part of this summary without referring to the relevant sections in the report. Sections within the main body of the report contain information which puts the findings that are captured within this summary into context. The key findings of this report are summarised below:

6.1.1 Geotechnical Considerations

It is anticipated that Made Ground will be encountered, overlying the Lowestoft Formation, Kesgrave Sand and Gravel and the London Clay Formation. The key geotechnical conclusions are summarised below:

- Made Ground is likely to vary in thickness and composition across the site. Historic features such as a moat associated with Colchester Hall may have been backfilled, and the thickness, composition and properties of this are unknown.
- The Lowestoft Formation is typically described as a firm to stiff gravelly silty clay, and based on the information reviewed is likely to have variable strength or compressibility which make the unit susceptible to differential settlement. Information from past GI suggests an increase in strength with depth, until close to the underlying Kesgrave, where the strength decreases.
- The Kesgrave Sand and Gravel is generally described as medium dense fine to coarse brown sand with fine to medium coarse gravel of flint. It is also encountered as dense fine to coarse rounded or sub-angular flint gravel with grey medium to coarse silty sand and occasional flint cobbles, but may be absent in some locations. It is likely to vary in thickness, composition, and density (generally described as medium dense) across the site.
- The London Clay Formation was generally described as stiff to very stiff mottled bluish grey/reddish brown fissured silty clay with dark grey and brown silt partings and seen to increase in strength with depth. There is risk of aggressive ground within the unit due to the presence of selenite crystals, gypsum/pyrites.
- Groundwater information available from BGS and past GI within close proximity to the site suggests that perched water may be encountered within the Made Ground. Groundwater was encountered within the Lowestoft Formation and Kesgrave Sand and Gravel, with sub-artesian conditions sometimes noted in the Kesgrave Sand and Gravel.

The key residual risks and engineering considerations associated with the proposed development have been summarised below:

- There are no details of any buried services on site which is found as a critical risk for the proposed work. Details of the same need to be gathered prior to commencement of any proposed works.
- A Desk Based Assessment has been submitted to address the potential archaeology on the site. For further details, reference should be made to Stansted Airport, Terminal Extension, Essex: Historic Environment Desk-Based Assessment, 2023/73, July 2023. This concludes that there is negligible potential for archaeological assets to be impacted by the works due to extensive previous surveys and development.
- The preliminary UXO risk assessment showed the requirement for a detailed assessment as there are presence of Luftwaffe Target locations and reported UXO finds.
- As the proposed work is in a developed airport, there are potential hazards due to proximity to the existing structures that may create differential movement or settlement between new and existing elements.
- Ground gas or other contamination may produce health hazards for the construction workers on site.

- It is likely that for lightly to moderately loaded structures a shallow foundation solution may be feasible and for heavy loading, a piled foundation solution may be required.
- For shallow foundations, consideration will need to be made with respect to the settlement limits (both total and differential) in the design of any shallow foundations due to varying thickness and composition of Made Ground and Lowestoft Formation.
- For deep foundation, such as piled foundations, the properties of deeper units such as Kesgrave Beds and London Clay Formation will be more critical. Additionally, the risk of aggressive ground within the London Clay will require consideration.
- For any ground bearing elements such as slabs, pavements and drainage consideration will need to be made of differential settlement limits, and localised variation in properties.
- Based on the anticipated ground conditions, infiltration rates are anticipated to be low, meaning that soakaway drainage is unlikely to be feasible.

6.1.2 Geo-environmental Conclusions

A Preliminary Risk Assessment has been undertaken for the site, following the procedures set out in current guidance, notably LCRM and CIRIA C552, including hazard identification, hazard assessment, risk estimation and risk evaluation.

The historical map review reveals that prior to the development of the existing airport the area was largely undeveloped with only limited previous development which included Colchester Hall centrally on the site and a former depot including various unspecified tanks located in the southern part of the development. The former Stansted Mountfitchet Airfield, a World War II airbase, was present approximately 500m to the west. The following key sources of contamination associated with the application site were identified:

- S1: Contamination associated with land use as an airport – possible spills or leaks of hydraulic oils, fire-fighting foams, use of glycols etc;
- S2: Bulk fuel storage and distribution – onsite aviation fuel distribution lines, and potential former tanks around Satellite 3; and
- S3: Possible localised infilling of unnamed drains and moat previously onsite or other areas of unidentified made ground.

Preliminary qualitative risk assessment identified the risks from these contamination sources ranging from very low to moderate/low for human health, very low to moderate/low for controlled water and moderate/low for the built environment.

It is expected that land contamination risks can be adequately controlled through the recommendations given below to enable the safe development of the site for the proposed development.

6.2 Recommendations

6.2.1 Geotechnical

On the basis of this desk study, the following recommendations are made:

- A project specific combined geotechnical and geo-environmental intrusive ground investigation (including in-situ testing, monitoring and laboratory testing) in order to:
  - Confirm and determine the thickness and properties of the material underlying the site.
  - Assess the potential geotechnical risks identified within this report.
  - Specific consideration for suitable geotechnical testing to understand the swelling potential of materials will be required.
  - Consideration of testing to inform potential design solutions to mitigate likely settlement at site.
  - Relevant testing to address any potential ground aggressivity on site.
  - Groundwater and ground gas observations and monitoring during and post GI in order to mitigate any risks associated with the identified sub-artesian condition.

The detailed scope and specification for the proposed ground investigation are not considered within this report.

Other recommendations include:

- A detailed UXO assessment should be undertaken before any intrusive works on site commence, due to its proximity towards locations of recorded UXO finds and Luftwaffe targets.
- GPR or a utility survey should be carried out on site to eliminate any damage to the buried services.

6.2.2 Geo-environmental

- An intrusive ground investigation should be undertaken at the location of proposed extension, new buildings, and walkways to determine the presence of soil contamination through trial pitting and/or window sampling. Exploratory hole locations should be determined following a walkover survey and should include testing of made ground, and leachable contaminants of concern highlighted in this desk study. As well as determining risk to human health, shallow soil sampling can provide additional lines of evidence on the potential risks to groundwater from residual contamination and provide data for excavated materials re-use options.
- Whilst significant ground gas sources (such as landfills) have not been identified, aviation operations and the network of underground storage facilities were identified within the site. Where leaks or spills from the pipes have occurred, fuels in the ground may partition into the vapour phase. Therefore, in addition to the groundwater wells, selected shallow dynamic sampler boreholes at the location of terminal extensions and plant enclosure building should be fitted with gas/vapour monitoring wells.
- Boreholes (through cable percussion or dynamic sampler methods) should be drilled for the purpose of assessing the groundwater regime and groundwater quality in the Lowestoft and Kesgrave Formations. This data will need to be used in further risk assessments and can inform dewatering plans should this be required.
- Groundwater monitoring should be undertaken on a minimum of six occasions following completion of the fieldwork, with sampling of groundwater for laboratory analysis to be undertaken in a minimum of four of these visits. Groundwater testing is further necessitated for this site considering the fact that exceedances for several determinands have been recorded by previous investigations on groundwater in a location approximately 200m east of site.
- Groundwater should be analysed for the following contaminants of concerns as identified by this desk study: metals and semi-metals, speciated PAH, phenols, TPH, VOCs, PFAS, glycols, and pH. In addition to these, the determinands with exceedances from previous investigation should also be tested for this site to verify if contamination exists.
- Soils should be analysed for a similar suite of contaminants to waters and also include total organic carbon and asbestos (in potential made ground soils only).
- Gas/vapour monitoring should be undertaken on a minimum of six occasions initially: although further monitoring may be required depending the findings of initial phase.
- Where excavated soil or demolition materials are needed to be removed for off-site disposal, some Waste Acceptance Criteria (WAC) testing may be beneficial, and landfilling should be avoided where possible. Removal of materials from site, if required, should be arranged with a licensed waste carrier.
- Excavated materials re-use should be informed by the ground investigation and associated risk assessment, and should follow an appropriate regulatory regime e.g., CL:AIRE Materials Management Plan (as required).
- Implementation of CEMP and RAMS to ensure control of dust emissions, suitable storage and handling of materials and the of suitable PPE during the construction phase.
- An asbestos specialist should be engaged as part of the development to manage potential risks if asbestos is encountered on site.

7.0 References

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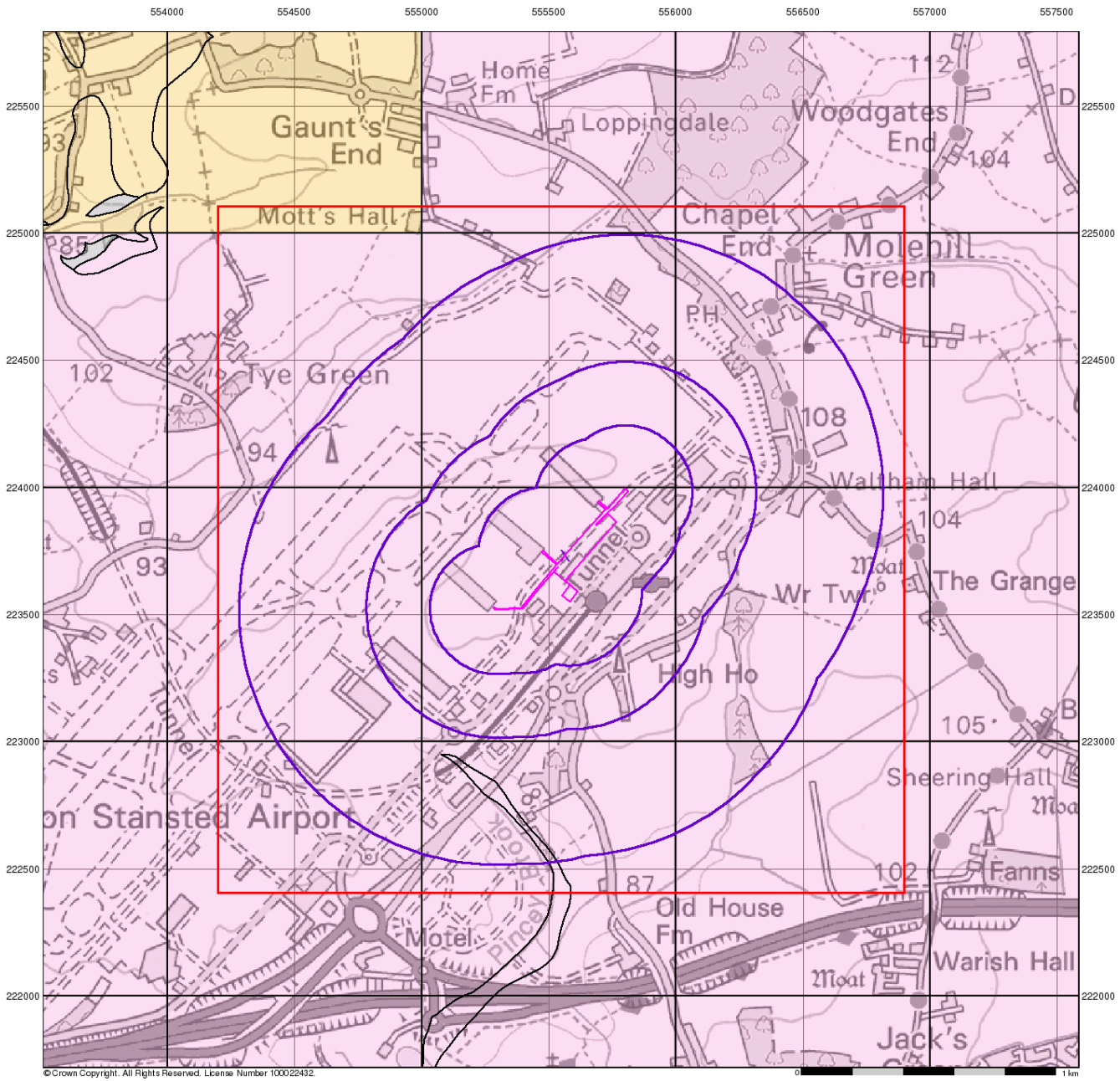
Appendices

A. Envirocheck Report



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Groundwater Vulnerability

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

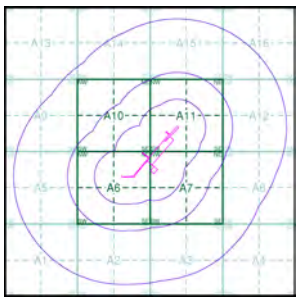
Agency and Hydrological

Bedrock Aquifers	Superficial Aquifers
High Vulnerability, Principal Aquifer	High Vulnerability, Principal Aquifer
High Vulnerability, Secondary Aquifer	High Vulnerability, Secondary Aquifer
Medium Vulnerability, Principal Aquifer	Medium Vulnerability, Principal Aquifer
Medium Vulnerability, Secondary Aquifer	Medium Vulnerability, Secondary Aquifer
Low Vulnerability, Principal Aquifer	Low Vulnerability, Principal Aquifer
Low Vulnerability, Secondary Aquifer	Low Vulnerability, Secondary Aquifer

Unproductive Aquifer

Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

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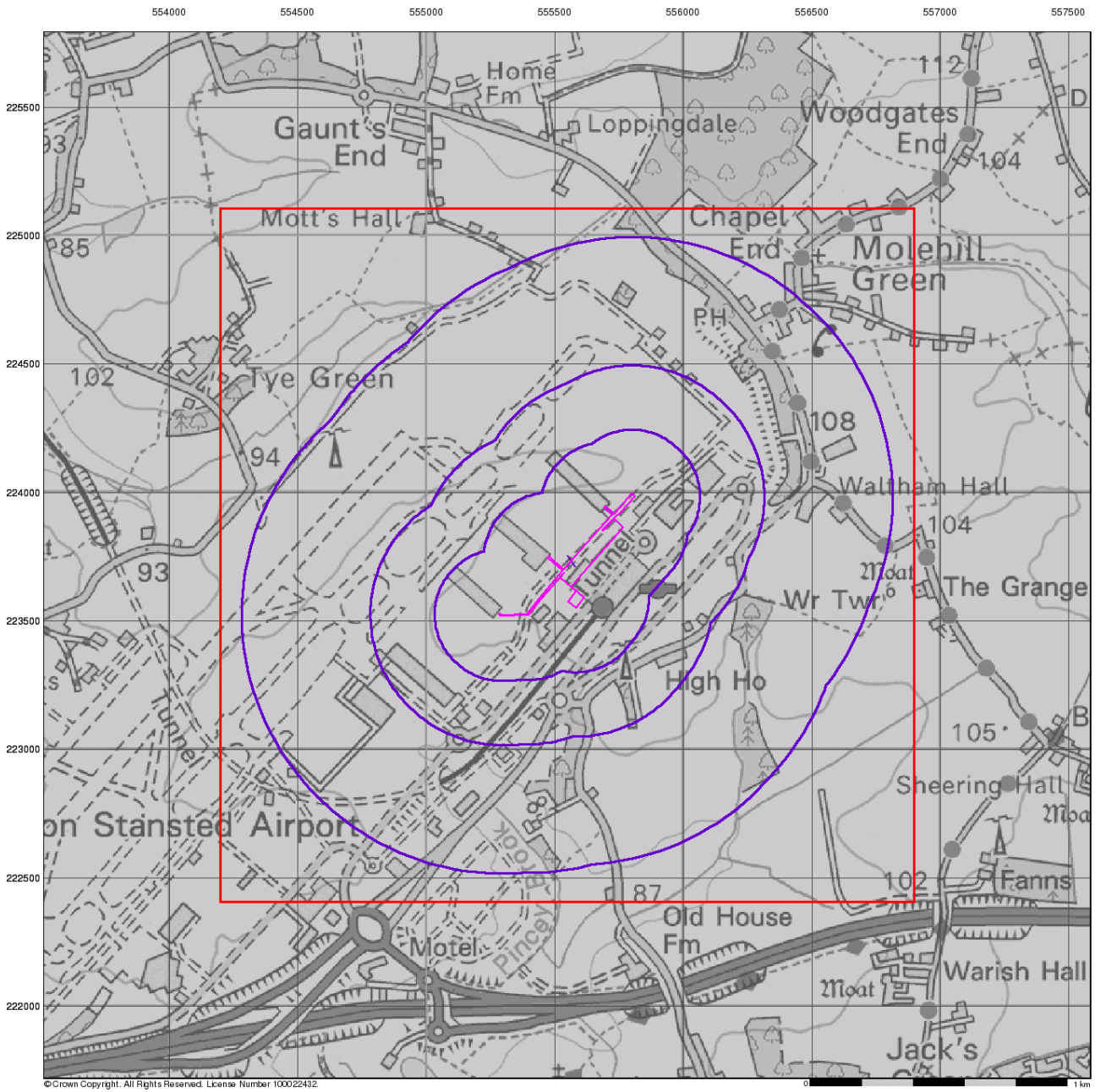
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



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Bedrock Aquifer Designation

General

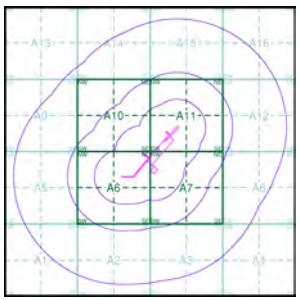
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



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Site Area (Ha):	2.73
Search Buffer (m):	1000

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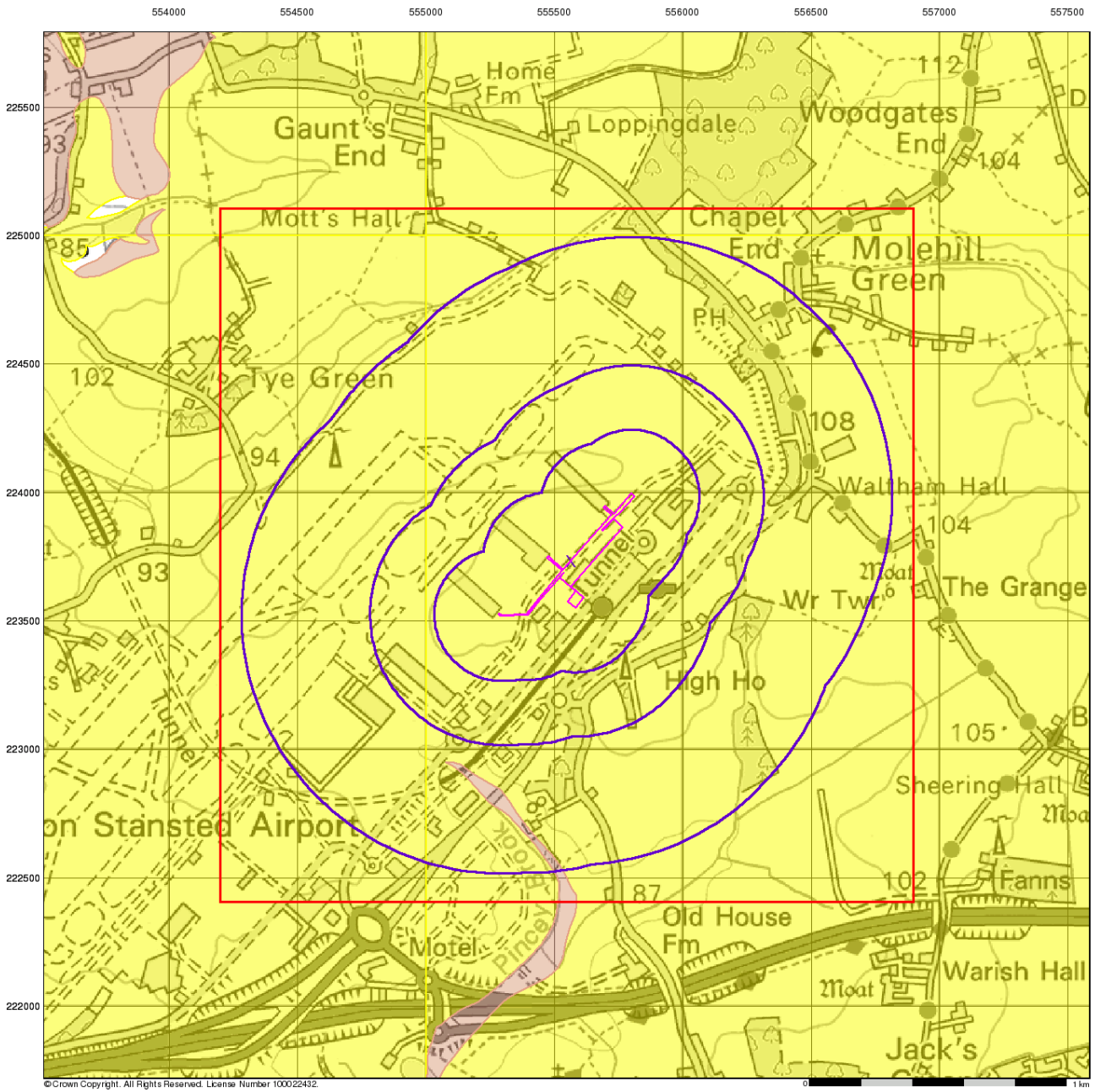
Fax: 0844 844 9951
Web: [redacted]



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Superficial Aquifer Designation

General

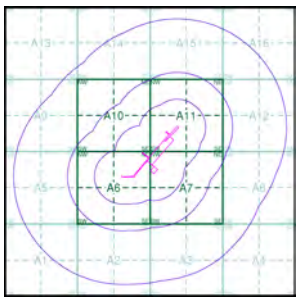
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



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National Grid Reference:	555560, 223730
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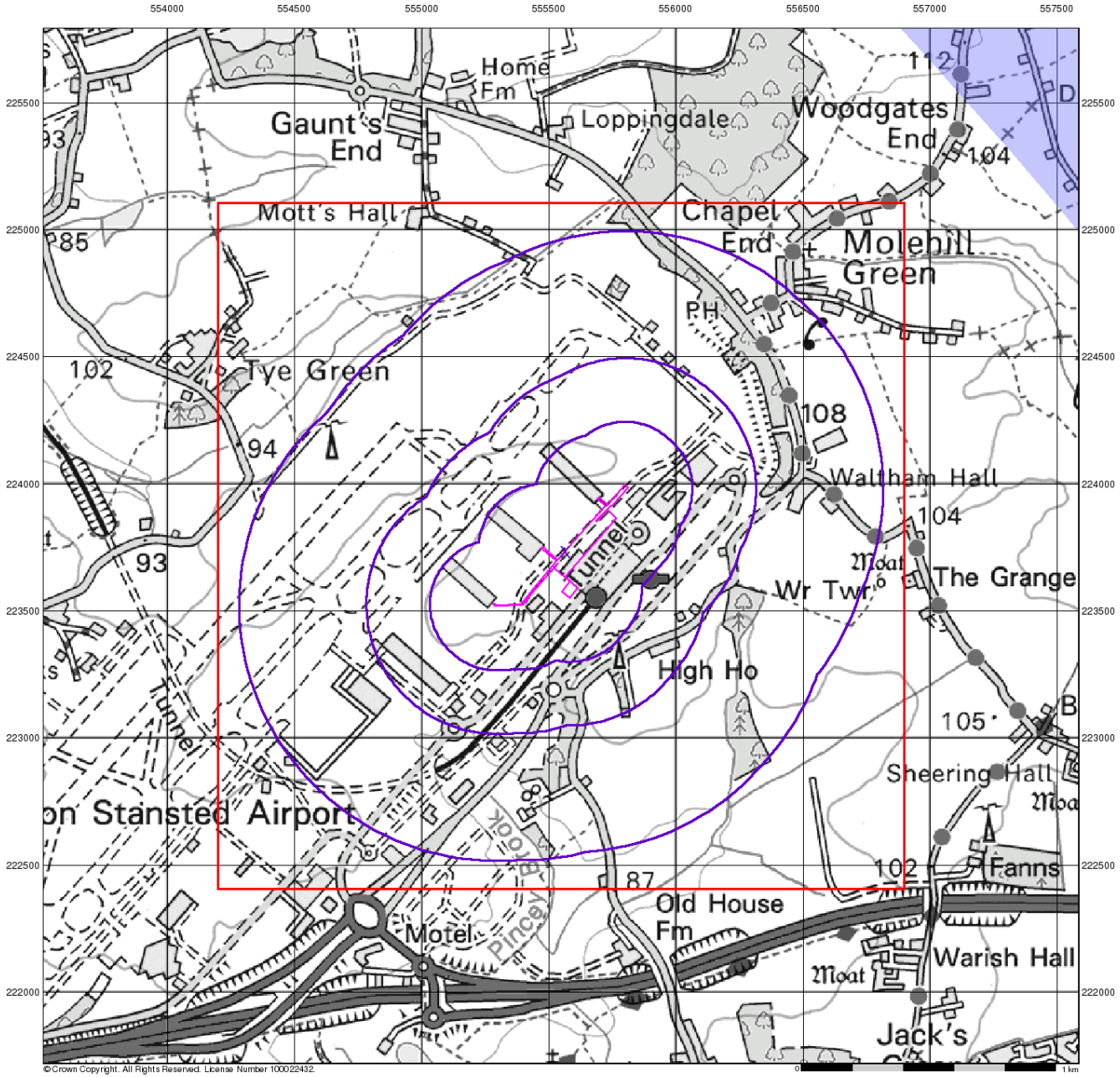
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG



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Source Protection Zones

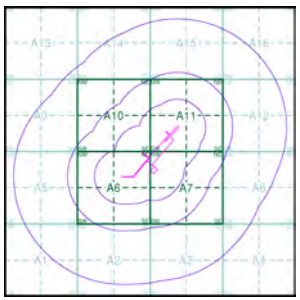
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



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Search Buffer (m):	1000

Site Details

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Landmark INFORMATION GROUP
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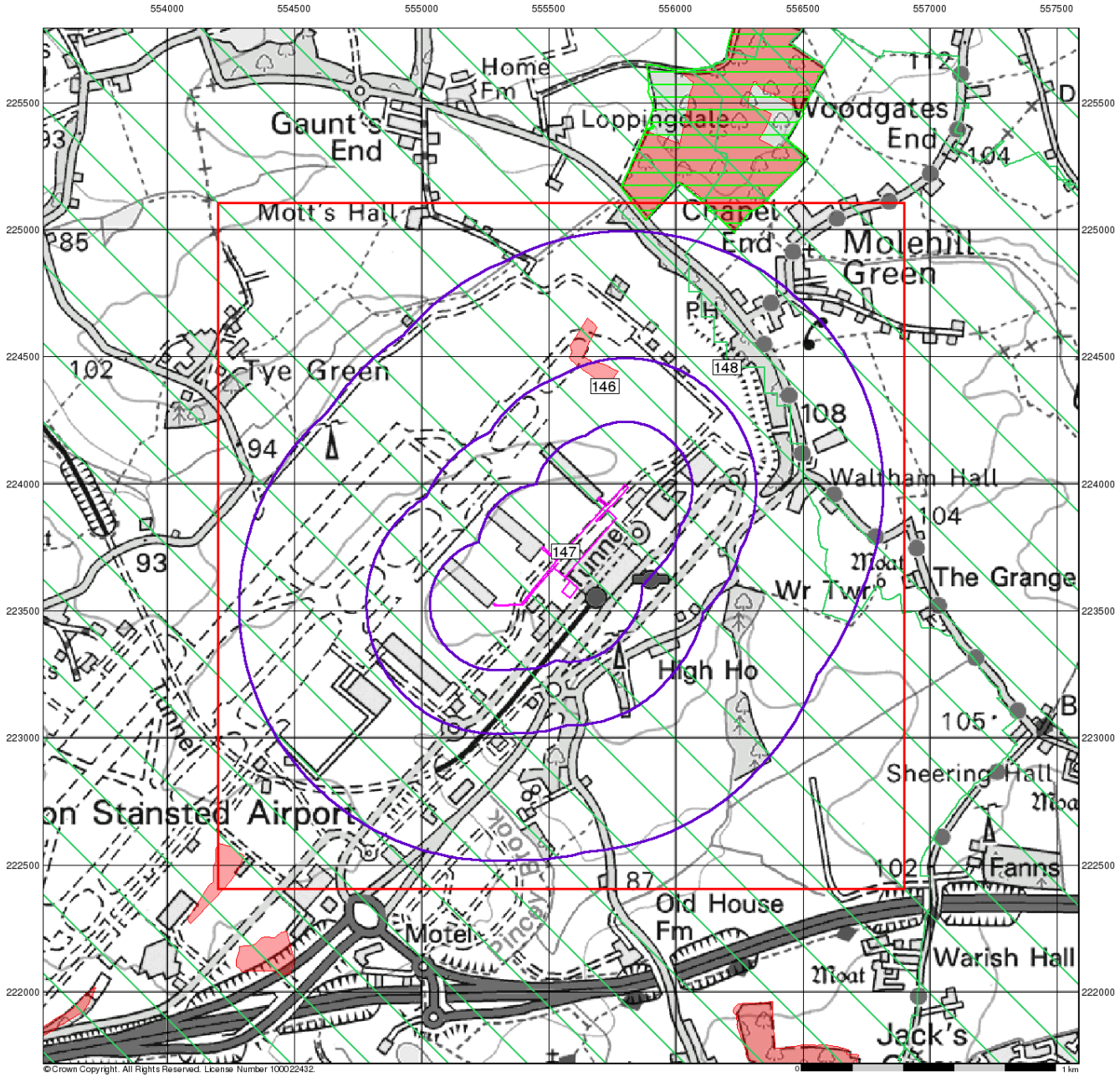
Fax: 0844 844 9951
Web: [redacted]



Sensitive Land Uses

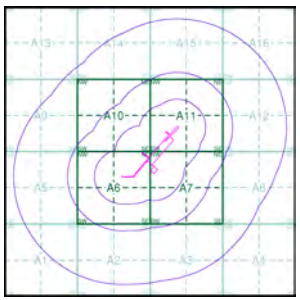
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



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Search Buffer (m):	1000

Site Details

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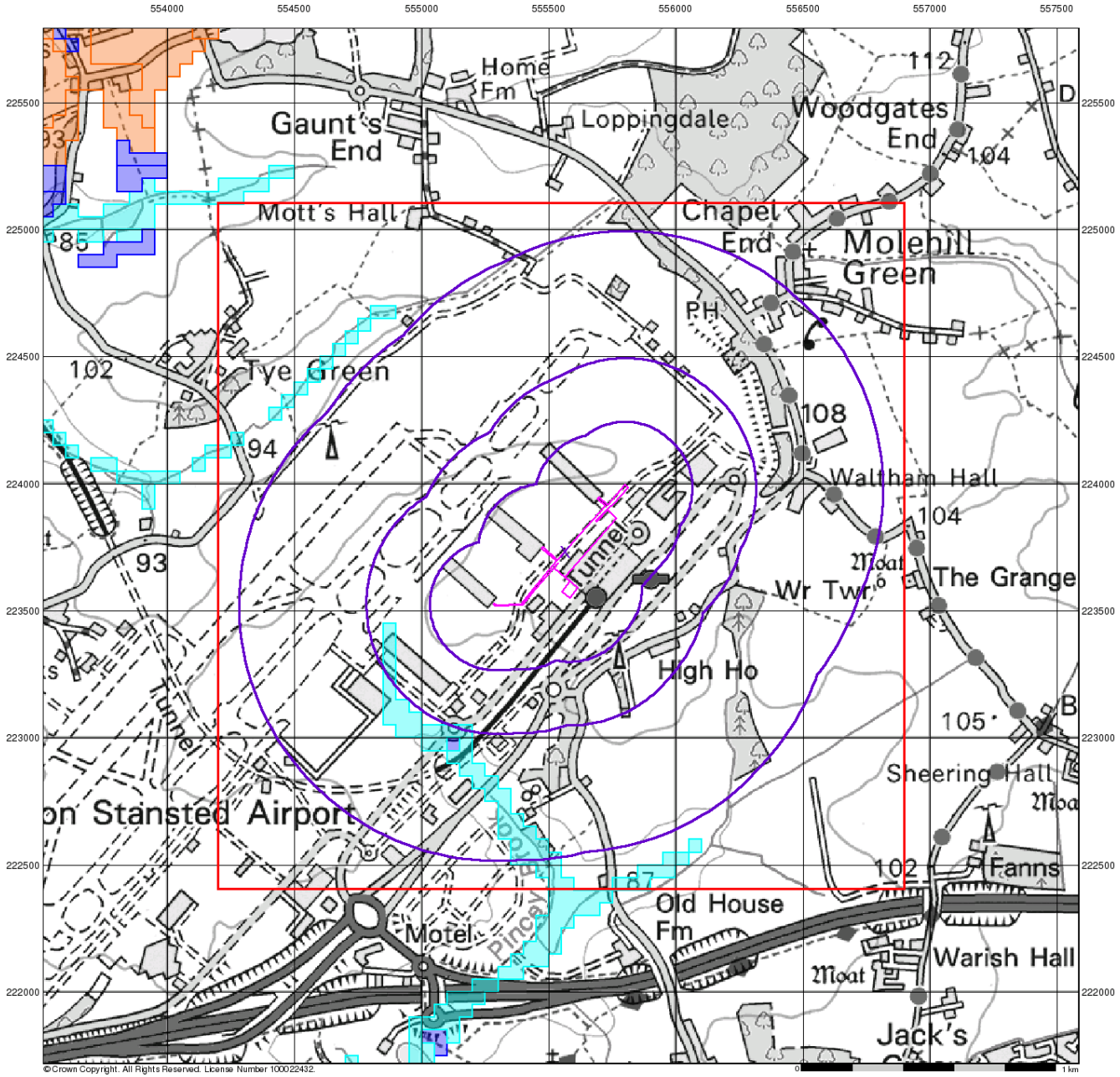

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BGS Flood GFS Data

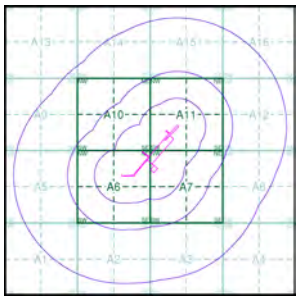
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



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Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
314797450_1_1

Customer Reference:
100106627 MM STN_TP Geotech/Env

National Grid Reference:
555560, 223730

Slice:
A

Site Area (Ha):
2.73

Search Buffer (m):
1000

Site Details:

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NR1 1UA

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1			Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		4		28
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 9				3
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 9			Yes	
Pollution Incidents to Controlled Waters	pg 9			1	2
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 10				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 10				1
Water Abstractions	pg 10				1 (*11)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 13	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 13	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 13	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 13			5	73

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 23	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)	pg 23	3	5	1	7
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 24	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 24	Yes		Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 24	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 24	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 25	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 25	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 26		11	6	8
Fuel Station Entries					
Points of Interest - Commercial Services	pg 28		1	7	5
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 29			1	1
Points of Interest - Public Infrastructure	pg 29		13	3	3
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 32			1	
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 32	1			1
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A6NW (SW)	389	1	554900 223450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A2NW (SW)	476	1	555200 223050
1	**Discharge Consents** Operator: Rank Precision Industries Ltd Property Type: MAKING OF COMPUTERS/ELECTRONICS/OPTICAL PRODUCTS Location: Langston Road, Debden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcr.0246 Permit Version: 1 Effective Date: 25th April 1977 Issued Date: 25th April 1977 Revocation Date: 15th May 1991 Discharge Type: Trade Effluent Discharge Environment: Freshwater Stream/River Receiving Water: Culverted Trib Of The Roding **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A7SW (S)	203	2	555550 223350
1	**Discharge Consents** Operator: Greater London Council Property Type: Undefined Or Other Location: The Broadway, Debden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctlr.0026 Permit Version: 1 Effective Date: 4th January 1977 Issued Date: 3rd October 1975 Revocation Date: 24th March 1992 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Trib Of Roding **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A7SW (S)	203	2	555550 223350
1	**Discharge Consents** Operator: Chigwell Udc Property Type: Undefined Or Other Location: Debden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cejr.0017 Permit Version: 1 Effective Date: 29th March 1961 Issued Date: 29th March 1961 Revocation Date: 24th March 1992 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Roding **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A7SW (S)	203	2	555550 223350
2	**Discharge Consents** Operator: Eastern Road Construction Unit (D.O.E.) Property Type: CONSTRUCTION OF BUILDINGS Location: M11 Motorway, (Contract 2) Debden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cexr.0139 Permit Version: 1 Effective Date: 16th October 1973 Issued Date: 16th October 1973 Revocation Date: 4th January 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Roding **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A6SW (SW)	242	2	555150 223320

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Vigzol Oil Co. Ltd Property Type: MAKING OF OTHER TRANSPORT EQUIP/SHIPS/TRAINS/BIKES Location: Bridge Garage, Ongar, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Celr.0039 Permit Version: 1 Effective Date: 8th July 1963 Issued Date: 8th July 1963 Revocation Date: 26th July 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Cripsey Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A2NE (S)	569	2	555360 222950
4	**Discharge Consents** Operator: The Occupier Property Type: Undefined Or Other Location: Rickling Green, Rickling, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcu.0295 Permit Version: 1 Effective Date: 12th May 1972 Issued Date: 12th May 1972 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	616	2	555050 222950
5	**Discharge Consents** Operator: Stansted Airport Limited Property Type: AIR TRANSPORT/AIRPORT Location: Stansted Airportstanstedessex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.1775 Permit Version: 1 Effective Date: 31st July 1987 Issued Date: 31st July 1987 Revocation Date: 14th January 2005 Discharge Type: Unknown Discharge Environment: Freshwater Stream/River Receiving Water: Pincey Brook **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	634	2	554910 223010
6	**Discharge Consents** Operator: Waltham Hall Farms Ltd. Property Type: FARMS (NOT HOUSE)/CROP + ANIMAL REARING/PLANT NURSERY Location: Barn West Of The Farmstead, Waltham Hall, Takeley, Bishops Stortford, Hert Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cntm.0092 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Onto Land Receiving Water: Boulder Clay **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A12SW (E)	637	2	556450 223970

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: Waltham Hall Farms Ltd. Property Type: FARMS (NOT HOUSE)/CROP + ANIMAL REARING/PLANT NURSERY Location: Barn West Of The Farmstead, Waltham Hall, Takeley, Bishops Stortford, Hert Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTM.0092 Permit Version: 1 Effective Date: 10th February 1992 Issued Date: 10th February 1992 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Onto Land Receiving Water: Boulder Clay **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A12SW (E)	637	2	556450 223970
7	**Discharge Consents** Operator: Stansted Airport Limited Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Croft End, Molehill Green, Stansted, Essex Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.0162 Permit Version: 1 Effective Date: 28th July 2000 Issued Date: 23rd August 2000 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tribuarty Of The River Roding **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A12NW (NE)	685	2	556460 224210
8	**Discharge Consents** Operator: The Residents Property Type: Not Supplied Location: Res. Devlpt Weaverhead & Copthall L, Essex Authority: Environment Agency, Anglian Region Catchment Area: Not Supplied Reference: Pr2nfe01978 Permit Version: 1 Effective Date: 2nd May 1978 Issued Date: 2nd May 1978 Revocation Date: 8th March 1993 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Trib River Chelmer **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 10m	A7SE (SE)	710	2	556140 223110
9	**Discharge Consents** Operator: [redacted] Property Type: HOLIDAY ACCOM/CAMP SITE/CARAVAN SITE/HOTEL/HOSTEL Location: Hall Caravan Park, Stanstead Airport, Standsted, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctlr.0234 Permit Version: 1 Effective Date: 26th September 1975 Issued Date: 26th September 1975 Revocation Date: 5th February 1990 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Pincey Brook. **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A2NW (SW)	769	2	555110 222770

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
10	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Waltham Hall Cottage Takeley Bishop'S Stortford Hertfordshire Cm22 6pf Cm22 6pf Authority: Environment Agency, Thames Region Catchment Area: Stort Reference: Canm.1080 Permit Version: 1 Effective Date: 7th March 2006 Issued Date: 27th March 2006 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Ditch Trib Of River Chelmer **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A12SE (E)	782	2	556590 223890
10	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: 3 Waltham Hall Cottages, Bambers Green Road, Takeley, Bishops Stortford, H Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.3092 Permit Version: 1 Effective Date: 27th January 1989 Issued Date: 27th January 1989 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Onto Land Receiving Water: Boulder Clay **Status: Transferred from COPA 1974** Positional Accuracy: Located by supplier to within 100m	A12SE (E)	791	2	556600 223900
11	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Waltham Hall Farm, Waltham Hall, Takeley, Bishops Stortford, Hertfordshire Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CNTM.1762 Permit Version: 1 Effective Date: 13th March 1995 Issued Date: 13th March 1995 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Ofthe Pinceybrook **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A8NW (E)	825	2	556530 223550
12	**Discharge Consents** Operator: Stansted Airport Limited Property Type: AIR TRANSPORT/AIRPORT Location: Stansted Airport Mid-Term Carpark Threnhall Avenue Stansted Airport Essex Cm24 1qw Authority: Environment Agency, Thames Region Catchment Area: Stort Reference: Canm.0147 Permit Version: 1 Effective Date: 17th July 2000 Issued Date: 14th July 2000 Revocation Date: Not Supplied Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Pincey Brook **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A2SE (S)	830	2	555380 222690

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Discharge Consents** Operator: Indcoope Financial Services Property Type: FOOD+BEVERAGE SERVICES/CAFE/RESTAURANT/PUB Location: The Three Horseshoes, Molehill Green, Takeley, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Cntw.0353 Permit Version: 1 Effective Date: 22nd February 1990 Issued Date: 22nd February 1990 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Boulder Clay **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	865	2	556300 224700
14	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: The Forge, Mole Hill Green, Takeley The Forge Mole Hill Green Takeley, Bishops Stortford Hertfordshire Cm22 6pq Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CEVU.0172 Permit Version: 1 Effective Date: 3rd September 1971 Issued Date: 3rd September 1971 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Loam Strata **Status: Transferred from Water Resources Act 1963** Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	885	2	556351 224686
14	**Discharge Consents** Operator: The Occupier Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Site Adj. To Lyddon, Mole Hill Green, Takeley, Herts Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctlu.0626 Permit Version: 1 Effective Date: 6th September 1979 Issued Date: 6th September 1979 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	923	2	556370 224720
15	**Discharge Consents** Operator: Stansted Airport Limited Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Mole Hill Green Cottages, Mole Hill Green, Stansted, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CATM.3008 Permit Version: 1 Effective Date: 1st September 1997 Issued Date: 1st September 1997 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Ofthe River Roding **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	904	2	556280 224760

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Discharge Consents** Operator: Stansted Airport Limited Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Mole Hill Green Cottages, Mole Hill Green, Stansted, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CATM.3009 Permit Version: 1 Effective Date: 1st September 1997 Issued Date: 1st September 1997 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Tributary Ofthe River Roding **Status: New Consent, by Application (Water Resources Act 1991, Section 88)** Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	911	2	556260 224780
16	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Molehill Green, Takeley (Adjoining Post Office), Essex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTLU.0656 Permit Version: 1 Effective Date: 9th June 1980 Issued Date: 9th June 1980 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Transferred from Water Resources Act 1963** Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	933	2	556410 224700
16	**Discharge Consents** Operator: The Occupier Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Site Adj. To Lyddon, Mole Hill Green, Takeley, Herts Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Ctlu.0627 Permit Version: 1 Effective Date: 6th September 1979 Issued Date: 6th September 1979 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	957	2	556400 224740
17	**Discharge Consents** Operator: Thames Water Utilities Limited. Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Manuden Stw, Manuden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcr.9012 Permit Version: 1 Effective Date: 31st January 1985 Issued Date: 22nd May 1953 Revocation Date: 18th September 1989 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Into And/Or Watercourse Receiving Water: Stort **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A2SW (SW)	948	2	554930 222640

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	**Discharge Consents** Operator: Thames Water Utilities Limited. Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Manuden Stw, Manuden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcr.9012 Permit Version: 3 Effective Date: 6th September 1991 Issued Date: 22nd May 1953 Revocation Date: 26th May 2004 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Stort **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A2SW (SW)	948	2	554930 222640
17	**Discharge Consents** Operator: Thames Water Utilities Limited. Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Manuden Stw, Manuden, Essex Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CLCR.9012 Permit Version: 2 Effective Date: 19th September 1989 Issued Date: 22nd May 1953 Revocation Date: 5th September 1991 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Into And/Or Watercourse Receiving Water: Stort **Status: Varied by Application - (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Manually corrected supplier location	A2SW (SW)	948	2	554930 222640
18	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Lyddon Mole Hill Green Takenley Bishops Stortford Hertfordshire Cm22 6ph Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Npswqd002306 Permit Version: 1 Effective Date: 25th June 2008 Issued Date: 25th June 2008 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Groundwaters Via Soakaway **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	970	2	556401 224755
18	**Discharge Consents** Operator: Baa Residential Portfolio Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Tyrells Mole Hill Green Takeley Essex Essex Cm22 6ph Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.0764 Permit Version: 1 Effective Date: 29th June 2004 Issued Date: 1st July 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Ditch Trib Of River Roding **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A16NW (NE)	993	2	556420 224770

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
19	**Discharge Consents** Operator: The Occupier Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Detached Houses, Stocking Pelham, Herts Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcu.0302 Permit Version: 1 Effective Date: 13th October 1972 Issued Date: 13th October 1972 Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Land/Soakaway Receiving Water: Not Supplied **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	985	2	554520 222900
19	**Discharge Consents** Operator: East Hertfordshire District Council Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Stocking Pelham Council Houses,Stocking Pelham, Hertfordshire Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Clcr.0081 Permit Version: 1 Effective Date: 19th June 1959 Issued Date: 19th June 1959 Revocation Date: 9th June 1992 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Trib Of Ash **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A1NW (SW)	992	2	554520 222890
20	**Discharge Consents** Operator: [redacted] Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Blossom Cottage And The Brambles Mole Hill Green Takeley Bishops Stortford Hertfordshire Cm22 6pq Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.1028 Permit Version: 1 Effective Date: 3rd November 2005 Issued Date: 17th November 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Un Named Ditch **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	989	2	556460 224730
20	**Discharge Consents** Operator: Stansted Airport Ltd Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Blossom Cottage And The Brambles Mole Hill Green Takeley Bishops Stortford Hertfordshire Cm22 6pq Authority: Environment Agency, Thames Region Catchment Area: Non-Tidal (River Roding) Reference: Canm.1028 Permit Version: 1 Effective Date: 3rd November 2005 Issued Date: 17th November 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Un Named Ditch **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A16SW (NE)	989	2	556460 224730

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	**Local Authority Pollution Prevention and Controls** Name: Europcar Location: Unit 3 Coopers End Road, Stanstead Airport, Stansted, CM24 1RJ Authority: Uttlesford District Council, Environmental Health Department Permit Reference: B/PVI/08 Dated: 24th April 2008 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A2NE (S)	508	3	555301 223010
21	**Local Authority Pollution Prevention and Controls** Name: Hertz (Uk) Ltd Location: Unit 4 Coopers End Road, Stanstead Airport, Stansted, CM24 1RR Authority: Uttlesford District Council, Environmental Health Department Permit Reference: B/PVI/06 Dated: 12th October 2006 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A2NE (S)	508	3	555301 223010
21	**Local Authority Pollution Prevention and Controls** Name: Avis Rent A Car Ltd Location: Unit 5 Coopers End, Stanstead Airport, Stansted, CM24 1RR Authority: Uttlesford District Council, Environmental Health Department Permit Reference: B/PVI/03 Dated: 24th April 2006 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A2NE (S)	508	3	555301 223010
	Nearest Surface Water Feature	A7SW (SE)	325	-	555871 223391
22	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stanstead Airport Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 18th October 1995 Incident Reference: NE950620 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A6SW (SW)	428	2	555001 223201
23	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: MOLEHILL GREEN Authority: Environment Agency, Thames Region Pollutant: Storm Sewage Note: Not Supplied Incident Date: 13th February 1997 Incident Reference: THNE1997031053 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A16SW (NE)	861	2	556300 224695
24	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Gaunts End Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Confirmed As A Pollution Incident Incident Date: 20th February 1993 Incident Reference: NE930136 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (N)	904	2	555200 224700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	River Quality Name: Pincey Bk GQA Grade: River Quality B Reach: Stansted Airport - Stort Estimated Distance (km): 18.3 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A2NE (SW)	521	2	555235 222967
25	**Substantiated Pollution Incident Register** Authority: Environment Agency - Anglian Region, Central Area Incident Date: 19th July 2006 Incident Reference: 418389 Water Impact: Category 2 - Significant Incident Air Impact: Category 3 - Minor Incident Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Oils - Diesel (Including Agricultural)	A12SW (E)	705	2	556518 224016
26	**Water Abstractions** Operator: J Barr Licence Number: 29/38/06/0055 Permit Version: Not Supplied Location: High House Farm, TAKELEY Authority: Environment Agency, Thames Region Abstraction: Agriculture (General) Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 5 Yearly Rate (m3): 23 Details: Glacial Gravel; Licence Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3NW (S)	748	2	555600 222800
	Water Abstractions Operator: Mr M A Ash Licence Number: 29/38/06/0089 Permit Version: 100 Location: Old House Farm, Takeley - Pincey Brook (Point C) Authority: Environment Agency, Thames Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Old House Farm, Takeley, Essex Authorised Start: 01 April Authorised End: 31 August Permit Start Date: 20th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1225	2	555500 222300
	Water Abstractions Operator: Stansted Airport Ltd Licence Number: 29/38/06/0102 Permit Version: 100 Location: Stansted Airport - Borehole 1 Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 1637 Yearly Rate (m3): 9092 Details: Stansted Airport, Stansted, Essex Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd August 1988 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NW (W)	1276	2	554200 224200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr M A Ash Licence Number: 29/38/06/0089 Permit Version: 100 Location: Old House Farm, Takeley - Pincey Brook (Point B) Authority: Environment Agency, Thames Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Old House Farm, Takeley, Essex Authorised Start: 01 April Authorised End: 31 August Permit Start Date: 20th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1320	2	555400 222200
	Water Abstractions Operator: Elsenham Water Limited Licence Number: 29/38/06/0162 Permit Version: 3 Location: Water Circle, Elsenham- Borehole Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Water Bottling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Circle, Elsenham Estate, Bishop'S Stortford. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 19th June 2009 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1541	2	555020 225330
	Water Abstractions Operator: Cheergrey Properties Limited Licence Number: 29/38/06/0162 Permit Version: 2 Location: Water Circle, Elsenham- Borehole Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Water Bottling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Water Circle, Elsenham Estate, Bishop'S Stortford. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 16th February 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1541	2	555020 225330
	Water Abstractions Operator: Cheergrey Properties Limited Licence Number: 29/38/06/0162 Permit Version: 1 Location: Borehole At Gaunts End, Essex Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Water Bottling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Elsenham Quality Foods, Gaunts End Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th January 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1541	2	555020 225330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Cheergrey Properties Limited Licence Number: 29/38/06/0162 Permit Version: 1 Location: Borehole At Gaunts End, Essex Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Elsenham Quality Foods, Gaunts End Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 11th January 2001 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1541	2	555020 225330
	Water Abstractions Operator: Elsenham Water Limited Licence Number: Th/038/0006/001/R01 Permit Version: 1 Location: Water Circle, Elsenham Estate - Borehole Authority: Environment Agency, Thames Region Abstraction: Business Parks: Drinking, Cooking, Sanitary, Washing, (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1548	2	555026 225340
	Water Abstractions Operator: Elsenham Water Limited Licence Number: Th/038/0006/001/R01 Permit Version: 1 Location: Water Circle, Elsenham Estate - Borehole Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Water Bottling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1548	2	555026 225340
	Water Abstractions Operator: Elsenham Water Limited Licence Number: Th/038/0006/001 Permit Version: 1 Location: Water Circle, Elsenham Estate - Borehole Authority: Environment Agency, Thames Region Abstraction: Food And Drink: Water Bottling Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 2010 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(N)	1548	2	555026 225340

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr M A Ash Licence Number: 29/38/06/0089 Permit Version: 100 Location: Old House Farm, Takeley - Pincey Brook (Point A) Authority: Environment Agency, Thames Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 573 Yearly Rate (m3): 15911 Details: Old House Farm, Takeley, Essex Authorised Start: 01 April Authorised End: 31 August Permit Start Date: 20th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1629	2	555100 221900
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Unproductive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Intermediate Bedrock Flow: Mixed Dilution: <300 mm/year Baseflow Index: <40% Superficial Patchiness: >90% Superficial Thickness: >10m Superficial Recharge: Low	A7NW (E)	0	4	555564 223732
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A7NW (E)	0	4	555564 223732
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A7NW (E)	0	4	555564 223732
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 48.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7SW (SE)	325	5	555870 223389
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NE (E)	407	5	556151 223729

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 60.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NE (E)	430	5	556182 223750
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 31.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NE (E)	480	5	556170 223603
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 294.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A3NW (S)	495	5	555594 223056
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 214.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12SW (E)	554	5	556366 224034
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 488.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pincey Brook Catchment Name: Thames Primacy: 1	A2NW (SW)	559	5	554951 223073
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 136.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A2NW (SW)	559	5	554972 223055
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 82.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	574	5	556316 224260
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	575	5	556308 224276
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 85.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	576	5	556303 224285

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12SW (E)	577	5	556391 223979
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12SW (E)	577	5	556391 223978
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 297.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12SW (E)	577	5	556391 223979
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 260.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11NE (NE)	585	5	556210 224412
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	587	5	555296 224374
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	593	5	556268 224363
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	593	5	556264 224368
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.6 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	597	5	556363 224214
46	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 437.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7SE (SE)	616	5	556050 223150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 256.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	626	5	555826 224620
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 104.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NE (NW)	631	5	555266 224407
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SE (NE)	634	5	556026 224587
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 123.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SE (NE)	634	5	556026 224587
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 353.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SW (N)	636	5	555861 224627
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 902.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8SW (SE)	648	5	556252 223407
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 95.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A1NE (SW)	653	5	554829 223054
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 457.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	664	5	556424 224245
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A12NW (NE)	664	5	556426 224241

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 71.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A3NW (S)	721	5	555589 222826
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A2NE (S)	729	5	555352 222790
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A1NE (SW)	740	5	554792 222970
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 217.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A1NE (SW)	743	5	554764 222992
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A2NE (S)	744	5	555528 222789
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 245.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A2NE (S)	750	5	555528 222782
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A2NE (S)	750	5	555539 222783
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 305.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15SE (NE)	755	5	556208 224629
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A15SE (NE)	755	5	556208 224629

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pincey Brook Catchment Name: Thames Primacy: 1	A2NE (S)	760	5	555317 222758
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 121.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pincey Brook Catchment Name: Thames Primacy: 1	A2SE (S)	776	5	555332 222742
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 149.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	807	5	555497 224742
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 72.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A16SW (NE)	809	5	556258 224661
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A15NW (N)	813	5	555639 224791
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 206.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	836	5	555475 224766
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	862	5	555334 224727
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	869	5	555342 224738
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A16SW (NE)	876	5	556317 224701

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 348.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	877	5	555282 224726
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 187.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Pincey Brook Catchment Name: Thames Primacy: 1	A2SE (S)	877	5	555402 222643
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A16SW (NE)	887	5	556328 224706
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	889	5	555339 224759
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 44.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	890	5	555360 224769
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 24.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	901	5	555349 224777
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 66.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	903	5	555310 224761
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 259.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	909	5	555254 224745
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	912	5	555385 224806

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	917	5	555394 224816
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 121.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A16SW (NE)	919	5	556356 224726
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	920	5	555396 224821
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 435.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A8NE (E)	924	5	556600 223464
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 21.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	927	5	555378 224819
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	931	5	555407 224838
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SW (N)	936	5	555203 224740
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 273.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (N)	965	5	555197 224772
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1195.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NW (N)	970	5	555188 224771

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 216.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14NE (N)	973	5	555411 224886
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SW (NW)	974	5	554966 224598
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 136.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SW (NW)	980	5	554939 224579
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 42.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A3NE (SE)	984	5	556206 222789
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 285.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	987	5	554640 224295
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 9.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	989	5	554731 224399
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 30.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	989	5	554751 224422
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 61.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	990	5	554752 224424
100	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 70.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A13SE (NW)	990	5	554846 224513

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A13SE (NW)	990	5	554854 224519
102	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 113.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	990	5	554724 224392
103	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9NE (NW)	997	5	554650 224307
104	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A9SW (W)	998	5	554453 224080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Uttlesford District Council - Has no landfill data to supply		0	3	555564 223732
	Local Authority Landfill Coverage Name: Essex County Council - Has supplied landfill data		0	6	555564 223732
105	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6NE (SW)	0	-	555502 223678
106	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6NE (W)	0	-	555524 223748
107	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A7NW (S)	0	-	555555 223687
108	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A11SW (N)	110	-	555558 223891
109	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6NW (SW)	127	-	555179 223451
110	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A10SE (N)	141	-	555497 224061
111	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6SW (SW)	183	-	555175 223374
112	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6SE (S)	245	-	555435 223279
113	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A6NW (W)	382	-	554900 223583
114	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A6SW (SW)	561	-	554908 223107
115	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A6SW (SW)	561	-	554911 223104
116	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A2NW (SW)	596	-	555098 222944
117	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1950	A9SE (W)	736	-	554731 224012
118	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A9NE (NW)	777	-	554819 224163
119	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A5NW (W)	894	-	554408 223708
120	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A1NE (SW)	986	-	554549 222865

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	A7NW (E)	0	1	555564 223732
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7NW (E)	0	1	555564 223732
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A5NE (W)	418	1	554869 223452
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A10SW (NW)	537	1	555000 224000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A2NE (S)	740	1	555266 222778
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	234	1	555903 224203
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A7NW (E)	0	1	555564 223732

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
121	**Contemporary Trade Directory Entries** Name: Aeropeople Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1QW Classification: Aviation Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A6NE (S)	97	-	555516 223480
121	**Contemporary Trade Directory Entries** Name: London Stansted Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, Essex, CM24 1QW Classification: Airports **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NE (S)	100	-	555516 223476
121	**Contemporary Trade Directory Entries** Name: Acetech Personnel Ltd Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, Essex, CM24 1QN Classification: Aviation Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NE (S)	100	-	555516 223476
121	**Contemporary Trade Directory Entries** Name: Gate Aviation Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, Essex, CM24 1QW Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6NE (S)	100	-	555516 223476
122	**Contemporary Trade Directory Entries** Name: Stansted Citylink Location: Passenger Terminal, Bassingbourn Road, London Stansted Airport, Stansted, Essex, CM24 1RW Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A7NW (E)	101	-	555742 223682
122	**Contemporary Trade Directory Entries** Name: Dougland Industrial Support Services Ltd Location: Passenger Terminal, Bassingbourn Road, London Stansted Airport, Stansted, Essex, CM24 1RW Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555742 223682
123	**Contemporary Trade Directory Entries** Name: Dixons Travel Location: Stansted Airport, Terminal Road North, Stansted, CM24 1QW Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555805 223755
123	**Contemporary Trade Directory Entries** Name: Rmc Readymix (East Anglia) Location: Stansted Airport, Terminal Road North, Stansted, CM24 1QW Classification: Concrete & Mortar Ready Mixed **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555805 223755
123	**Contemporary Trade Directory Entries** Name: Currys Pc World Location: Stansted Airport, Terminal Road North, Stansted, CM24 1QW Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555805 223755
123	**Contemporary Trade Directory Entries** Name: I S S Aviation Location: Stansted Airport, Terminal Road North, Stansted, CM24 1QW Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555805 223755
123	**Contemporary Trade Directory Entries** Name: Derichebourg Multiservices Ltd Location: Stansted Airport, Terminal Road North, Stansted, CM24 1QW Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (E)	101	-	555805 223755

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
124	**Contemporary Trade Directory Entries** Name: Servisair Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Cargo Handling Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	387	-	554988 223274
124	**Contemporary Trade Directory Entries** Name: British Airways Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Cargo Handling Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	387	-	554988 223274
124	**Contemporary Trade Directory Entries** Name: Swissport International Ltd Location: Cargo Terminal,Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Cargo Handling Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	396	-	554965 223287
124	**Contemporary Trade Directory Entries** Name: Tnt Uk Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Airfreight Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	396	-	554965 223287
125	**Contemporary Trade Directory Entries** Name: Fedex Location: Cargo Area South, Pincey Road, London Stansted Airport, Stansted, CM24 1FE Classification: Airfreight Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A6SW (SW)	413	-	554924 223320
126	**Contemporary Trade Directory Entries** Name: Francis Freight Location: Cargo Administration Building,Pincey Rd, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A6SW (SW)	489	-	554926 223190
127	**Contemporary Trade Directory Entries** Name: T N T Location: Unit E Cargo Terminal,Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5SE (SW)	537	-	554839 223222
128	**Contemporary Trade Directory Entries** Name: Car Storage Ltd Location: Suite 1, Network House, Bambers Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PF Classification: Car Painters & Sprayers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (E)	636	-	556449 223972
128	**Contemporary Trade Directory Entries** Name: T Jay Motors Location: Waltham Hall Farm Tythe Barn Hall Road,Bambers Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PF Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A12SW (E)	665	-	556478 223951
128	**Contemporary Trade Directory Entries** Name: C M P Services Location: Waltham Hall, Bambers Green, Takeley, Bishop's Stortford, CM22 6PF Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (E)	676	-	556489 223954

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
129	**Contemporary Trade Directory Entries** Name: Aviance Uk Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, Essex, CM24 1QJ Classification: Cargo Handling Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A5SE (SW)	727	-	554596 223285
130	**Contemporary Trade Directory Entries** Name: Chapterland Ltd Location: 3, Waltham Hall Cottages, Bambers Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PF Classification: Materials Handling Equipment **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12SE (E)	774	-	556586 223926
131	**Contemporary Trade Directory Entries** Name: Hot Shot Marine International Ltd Location: Unit 1, Waltham Hall, Bambers Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PF Classification: Distribution Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NE (NE)	817	-	556609 224167
132	**Contemporary Trade Directory Entries** Name: F J Halls & Son Location: The Forge,Mole Hill Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PQ Classification: Wrought Ironwork **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A16SW (NE)	902	-	556362 224700
133	**Points of Interest - Commercial Services** Name: Chimera Agencies Location: Enterprise House, Bassingbourn Road, Takeley, CM24 1QW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6NE (S)	97	7	555516 223480
134	**Points of Interest - Commercial Services** Name: Servisair Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	387	7	554988 223274
134	**Points of Interest - Commercial Services** Name: Asiana Airlines Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	389	7	555008 223249
134	**Points of Interest - Commercial Services** Name: London Stanstead Cargo Location: Cargo Area South, Pincey Road, London Stansted Airport, Stansted, CM24 1FE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	389	7	555008 223249
134	**Points of Interest - Commercial Services** Name: Servisair (UK) Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	396	7	554965 223287
134	**Points of Interest - Commercial Services** Name: Swissport International Ltd Location: Cargo Terminal, Pincey Road, Takeley, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	396	7	554965 223287
134	**Points of Interest - Commercial Services** Name: British Airways Location: Cargo Terminal, Pincey Road, Takeley, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	396	7	554965 223287

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
134	**Points of Interest - Commercial Services** Name: TNT Express Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A6SW (SW)	403	7	554939 223314
135	**Points of Interest - Commercial Services** Name: C M P Services Location: Waltham Hall, Bambers Green, Takeley, Bishop's Stortford, CM22 6PF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SW (E)	667	7	556480 223952
135	**Points of Interest - Commercial Services** Name: T Jay Motors Location: Waltham Hall Farm Tythe Barn Hall Road, Bambers Green, Takeley, Bishop's Stortford, CM22 6PF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A12SW (E)	705	7	556518 224017
136	**Points of Interest - Commercial Services** Name: G H Stansted Ltd Location: Cargo Terminal, Pincey Road, London Stansted Airport, Stansted, CM24 1QJ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A5SE (SW)	727	7	554596 223285
137	**Points of Interest - Commercial Services** Name: F J Halls & Son Location: The Forge, Mole Hill Green, Takeley, Bishop's Stortford, CM22 6PQ Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A16SW (NE)	899	7	556366 224692
137	**Points of Interest - Commercial Services** Name: F J Halls & Son Location: The Forge, Mole Hill Green, Takeley, Bishop's Stortford, Hertfordshire, CM22 6PQ Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A16SW (NE)	902	7	556362 224700
138	**Points of Interest - Manufacturing and Production** Name: Tank Location: CM24 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A5SE (SW)	460	7	554837 223407
139	**Points of Interest - Manufacturing and Production** Name: Tanks Location: CM22 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A12SW (E)	640	7	556453 223959
140	**Points of Interest - Public Infrastructure** Name: London Stansted Airport Location: CM24 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to an adjacent address or location	A11SW (E)	67	7	555779 223776
140	**Points of Interest - Public Infrastructure** Name: BP Connect Location: Southgate, London Stansted Airport, Stansted, CM24 1AA Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A7NW (E)	100	7	555734 223675
140	**Points of Interest - Public Infrastructure** Name: Stansted Citylink Location: Passenger Terminal, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1RW Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to address or location	A7NW (E)	101	7	555742 223682

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
140	**Points of Interest - Public Infrastructure** Name: London Stansted Airport Location: Not Supplied Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A7NW (E)	101	7	555742 223682
140	**Points of Interest - Public Infrastructure** Name: Stansted Airport Location: Passenger Terminal, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1RW Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A7NW (E)	101	7	555742 223682
140	**Points of Interest - Public Infrastructure** Name: London Stansted Airport Location: Passenger Terminal, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1RW Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A7NW (E)	124	7	555773 223682
141	**Points of Interest - Public Infrastructure** Name: Stanstead Airport Police Station Location: Bassingbourn Road, London Stansted Airport, Stansted, CM24 1PS Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A6NE (S)	100	7	555516 223476
141	**Points of Interest - Public Infrastructure** Name: London Stansted Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1QW Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A6NE (S)	100	7	555516 223476
141	**Points of Interest - Public Infrastructure** Name: Stansted Airport Ltd Location: Enterprise House, Bassingbourn Road, London Stansted Airport, Stansted, CM24 1QW Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A6NE (S)	100	7	555516 223476
141	**Points of Interest - Public Infrastructure** Name: Stansted Airport Location: CM24 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to an adjacent address or location	A6NE (S)	101	7	555502 223487
141	**Points of Interest - Public Infrastructure** Name: Stansted Airport Rail Station Location: Bassingbourn Road, CM24 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A7NW (S)	113	7	555585 223437
141	**Points of Interest - Public Infrastructure** Name: Stansted Airport Station Location: Bassingbourn Road, CM24 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A7NW (S)	113	7	555585 223437
142	**Points of Interest - Public Infrastructure** Name: Stansted Airport Satellite 2 Location: CM24 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to an adjacent address or location	A6NW (W)	158	7	555131 223571
143	**Points of Interest - Public Infrastructure** Name: Coach Station Location: CM22 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A7NW (E)	254	7	555876 223603

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
143	**Points of Interest - Public Infrastructure** Name: London Stansted Airport Location: CM22 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to an adjacent address or location	A7NE (E)	272	7	555924 223631
143	**Points of Interest - Public Infrastructure** Name: Coach Station Location: CM22 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A7NE (E)	276	7	555924 223624
144	**Points of Interest - Public Infrastructure** Name: Stansted Airport Location: CM24 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to an adjacent address or location	A5NE (W)	651	7	554648 223672
145	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: CM22 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A2NE (S)	758	7	555409 222763
145	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: CM22 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to an adjacent address or location	A2NE (S)	764	7	555396 222756

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
146	**Ancient Woodland** Name: Greenstreet Spring/Pigeon Wood Reference: 1116468 Area(m²): 17940.22 Type: Ancient and Semi-Natural Woodland	A11NW (N)	396	8	555721 224382
147	**Nitrate Vulnerable Zones** Name: Lee Nvz Description: Surface Water Source: Environment Agency, Head Office	A7NW (E)	0	4	555564 223732
148	**Nitrate Vulnerable Zones** Name: Roding (Cripsey Brook To Loxford Water) Nvz Description: Surface Water Source: Environment Agency, Head Office	A15SE (NE)	612	4	556200 224457

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
East Hertfordshire District Council - Environmental Health Department	January 2013	Annual Rolling Update
Environment Agency - Head Office	June 2020	Annually
Uttlesford District Council - Environmental Health Department	October 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Anglian Region	April 2023	Quarterly
Environment Agency - Thames Region	April 2023	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Anglian Region	March 2013	
Environment Agency - Thames Region	March 2013	
Integrated Pollution Controls		
Environment Agency - Anglian Region	January 2009	
Environment Agency - Thames Region	January 2009	
Integrated Pollution Prevention And Control		
Environment Agency - Anglian Region	January 2023	Quarterly
Environment Agency - South East Region - North East Thames Area	January 2023	Quarterly
Environment Agency - Thames Region	January 2023	Quarterly
Local Authority Integrated Pollution Prevention And Control		
East Hertfordshire District Council - Environmental Health Department	January 2014	Variable
Uttlesford District Council - Environmental Health Department	September 2014	Variable
Local Authority Pollution Prevention and Controls		
East Hertfordshire District Council - Environmental Health Department	January 2014	Annual Rolling Update
Uttlesford District Council - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
East Hertfordshire District Council - Environmental Health Department	January 2014	Variable
Uttlesford District Council - Environmental Health Department	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	May 2023	
Pollution Incidents to Controlled Waters		
Environment Agency - Anglian Region	September 1999	
Environment Agency - Thames Region	September 1999	
Prosecutions Relating to Authorised Processes		
Environment Agency - Anglian Region	July 2015	
Environment Agency - Thames Region	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - Anglian Region	March 2013	
Environment Agency - Thames Region	March 2013	
Registered Radioactive Substances		
Environment Agency - Anglian Region	June 2016	As notified
Environment Agency - Thames Region	June 2016	As notified
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	April 2012	
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	April 2012	
Substantiated Pollution Incident Register		
Environment Agency - Anglian Region - Central Area	April 2023	Quarterly
Environment Agency - Anglian Region - Eastern Area	April 2023	Quarterly
Environment Agency - South East Region - North East Thames Area	April 2023	Quarterly
Environment Agency - Thames Region - North East Area	April 2023	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Abstractions		
Environment Agency - Anglian Region	April 2023	Quarterly
Environment Agency - Thames Region	April 2023	Quarterly
Water Industry Act Referrals		
Environment Agency - Anglian Region	October 2017	
Environment Agency - Thames Region	October 2017	
Groundwater Vulnerability Map		
Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations		
Environment Agency - Head Office	January 2018	Annually
Source Protection Zones		
Environment Agency - Head Office	September 2022	Bi-Annually
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2023	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2023	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2023	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2023	Quarterly
Flood Defences		
Environment Agency - Head Office	August 2022	Quarterly
OS Water Network Lines		
Ordnance Survey	April 2023	Quarterly
Surface Water 1 in 30 year Flood Extent		
Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 100 year Flood Extent		
Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent		
Environment Agency - Head Office	May 2018	Annually
Surface Water Suitability		
Environment Agency - Head Office	February 2016	Annually
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	As notified

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	November 2002	As notified
Historical Landfill Sites		
Environment Agency - Head Office	March 2023	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Anglian Region	January 2009	Not Applicable
Environment Agency - Thames Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Anglian Region - Eastern Area	January 2023	Quarterly
Environment Agency - South East Region - North East Thames Area	January 2023	Quarterly
Environment Agency - Thames Region - North East Area	January 2023	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Anglian Region - Eastern Area	January 2023	Quarterly
Environment Agency - South East Region - North East Thames Area	January 2023	Quarterly
Environment Agency - Thames Region - North East Area	January 2023	Quarterly
Local Authority Landfill Coverage		
East Hertfordshire District Council - Environmental Health Department	February 2003	Not Applicable
Essex County Council	February 2003	Not Applicable
Hertfordshire County Council - Spatial Planning and Economy Unit	February 2003	Not Applicable
Uttlesford District Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
East Hertfordshire District Council - Environmental Health Department	October 2018	
Essex County Council	October 2018	
Hertfordshire County Council - Spatial Planning and Economy Unit	October 2018	
Uttlesford District Council - Environmental Health Department	October 2018	
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	
Registered Landfill Sites		
Environment Agency - Anglian Region - Eastern Area	March 2006	Not Applicable
Environment Agency - Thames Region - North East Area	March 2006	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Anglian Region - Eastern Area	April 2018	
Environment Agency - Thames Region - North East Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency - Anglian Region - Eastern Area	June 2015	
Environment Agency - Thames Region - North East Area	June 2015	

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	March 2023	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
Essex County Council	February 2016	Variable
Hertfordshire County Council - Spatial Planning and Economy Unit	February 2016	Variable
East Hertfordshire District Council	May 2023	Variable
Uttlesford District Council - Planning Department	May 2023	Variable
Planning Hazardous Substance Consents		
East Hertfordshire District Council	April 2015	Variable
Essex County Council	February 2016	Variable
Hertfordshire County Council - Spatial Planning and Economy Unit	February 2016	Variable
Uttlesford District Council - Planning Department	October 2015	Variable
Geological	**Version**	**Update Cycle**
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	As notified
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	December 2015	As notified
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	June 2023	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	
Cheshire Brine Subsidence Compensation Board (CBSCB)	November 2020	As notified
Coal Mining Affected Areas		
The Coal Authority - Property Searches	February 2023	Annual Rolling Update
Mining Instability		
Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	As notified
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	September 2022	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	September 2022	Annually

Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	July 2023	Quarterly
Fuel Station Entries Catalist Ltd - Experian	June 2023	Quarterly
Gas Pipelines National Grid	October 2021	Bi-Annually
Points of Interest - Commercial Services PointX	June 2023	Quarterly
Points of Interest - Education and Health PointX	June 2023	Quarterly
Points of Interest - Manufacturing and Production PointX	June 2023	Quarterly
Points of Interest - Public Infrastructure PointX	June 2023	Quarterly
Points of Interest - Recreational and Environmental PointX	June 2023	Quarterly
Underground Electrical Cables National Grid	February 2023	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	April 2023	Bi-Annually
Areas of Adopted Green Belt		
East Hertfordshire District Council	July 2022	Quarterly
Uttlesford District Council	July 2022	Quarterly
Areas of Unadopted Green Belt		
East Hertfordshire District Council	July 2022	Quarterly
Uttlesford District Council	July 2022	Quarterly
Areas of Outstanding Natural Beauty		
Natural England	April 2023	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	May 2023	Not Applicable
Local Nature Reserves		
Natural England	March 2023	Bi-Annually
Marine Nature Reserves		
Natural England	April 2023	Bi-Annually
National Nature Reserves		
Natural England	February 2023	Bi-Annually
National Parks		
Natural England	February 2018	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2023	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	
Environment Agency - Head Office	March 2023	Bi-Annually
Ramsar Sites		
Natural England	March 2023	Bi-Annually
Sites of Special Scientific Interest		
Natural England	March 2023	Bi-Annually
Special Areas of Conservation		
Natural England	April 2023	Bi-Annually
Special Protection Areas		
Natural England	April 2023	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Stantec UK Ltd	Stantec

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: [redacted]
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Uttlesford District Council - Environmental Health Department** Council Offices, London Road, Saffron Walden, Essex, CB11 4ER	Telephone: 01799 510581 Fax: 01799 510499 Website: [redacted]
4	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: [redacted]
6	**Essex County Council** County Hall, Chelmsford, Essex, CM1 1YS	Telephone: 01245 492211 Website: [redacted]
7	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: [redacted]
8	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: [redacted]
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: [redacted]
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: [redacted]

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	LOFT	Lowestoft Formation	Diamicton	Not Supplied - Anglian
	GFDMP	Glaciofluvial Deposits, Mid Pleistocene	Sand and Gravel	Not Supplied - Cromerian
	KGCA	Kesgrave Catchment Subgroup	Sand and Gravel	Not Supplied - Pleistocene
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian

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Geology 1:50,000 Maps

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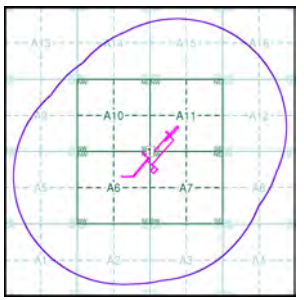
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**222**
Map Name:	**Great Dunmow**
Map Date:	**1990**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Not Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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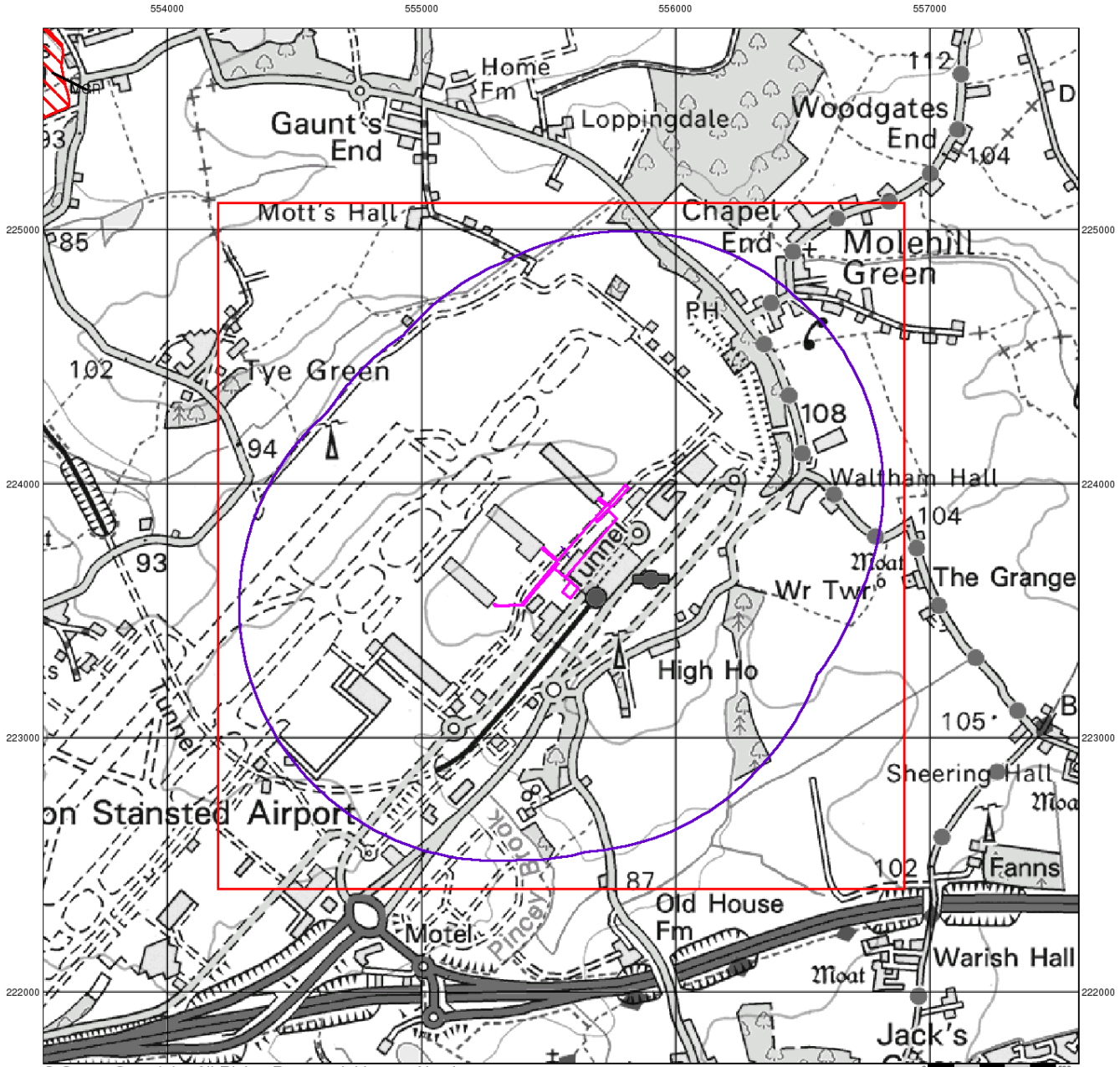
Search Buffer (m):	1000

Site Details:

Stansted Airport, Terminal Road North, Stansted, CM24 1RG



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Artificial Ground and Landslip

Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
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- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
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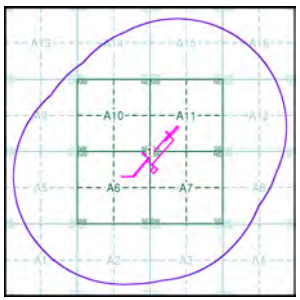
Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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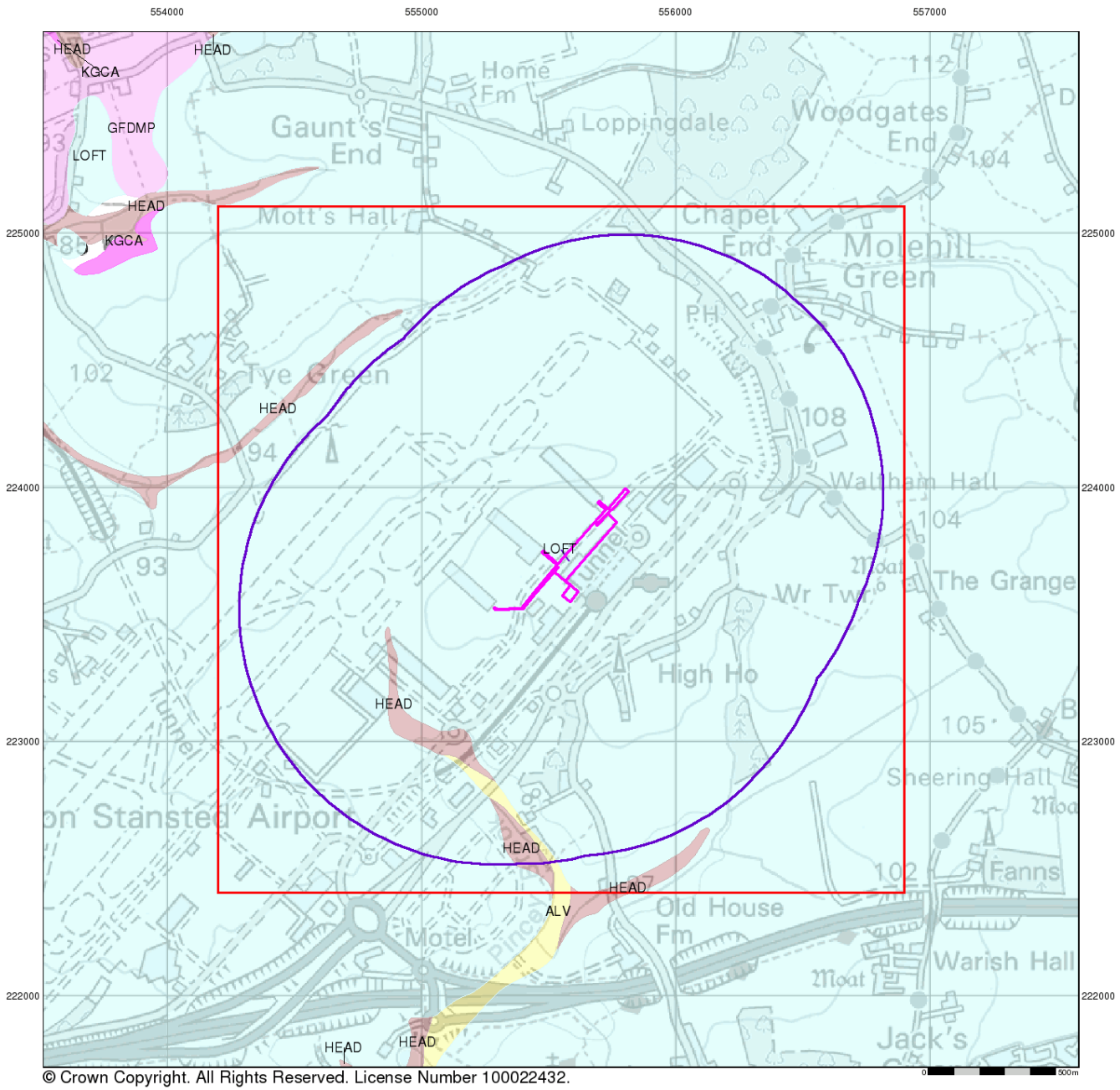
Fax: 0844 844 9951
Web: [redacted]



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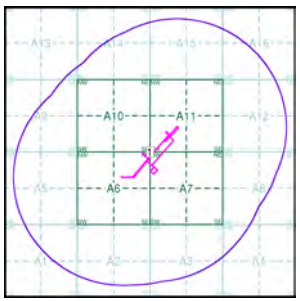
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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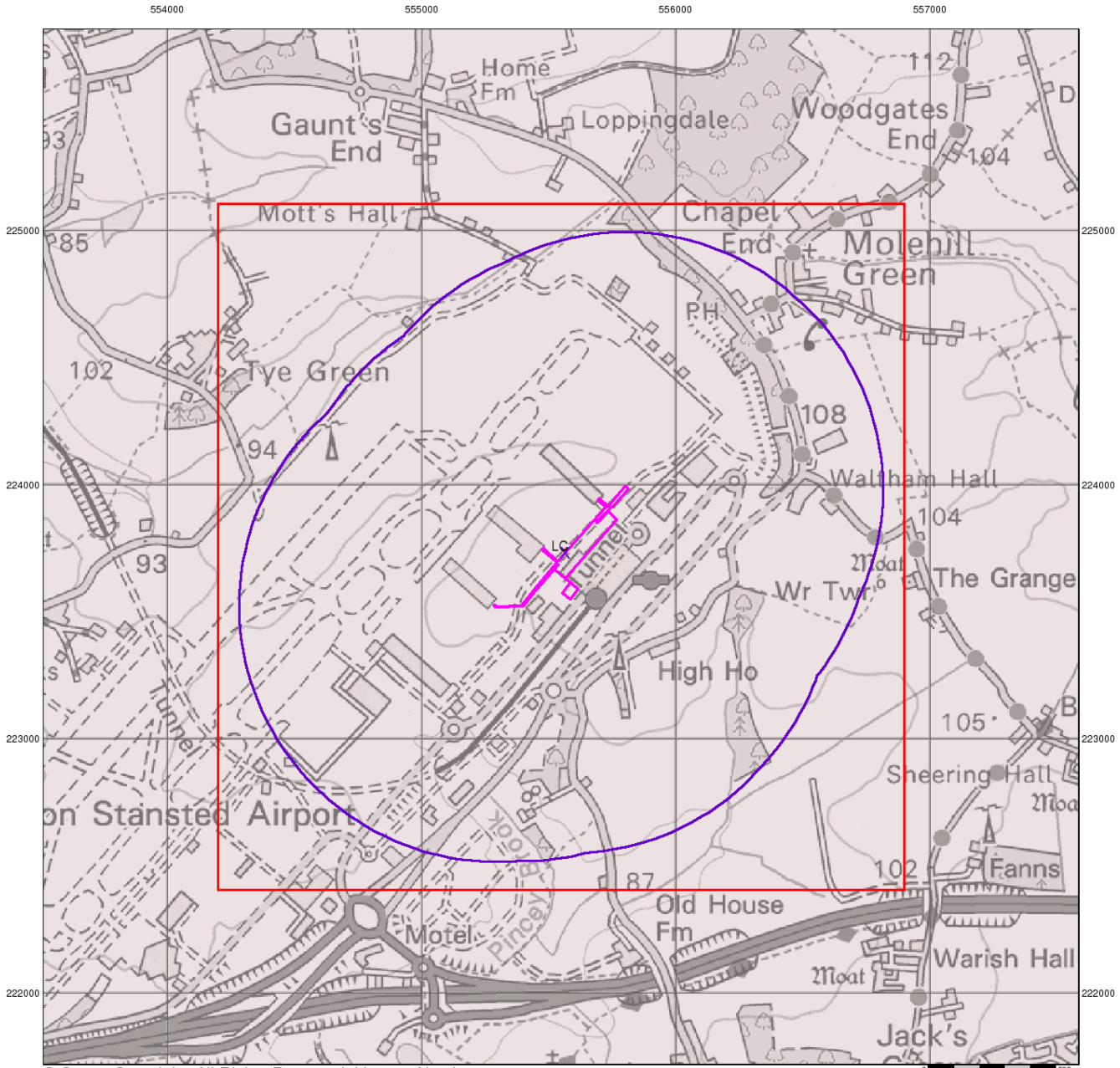

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Bedrock and Faults

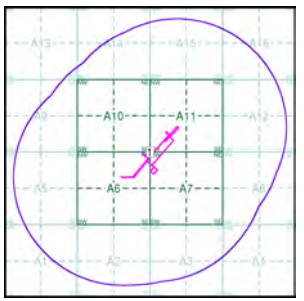
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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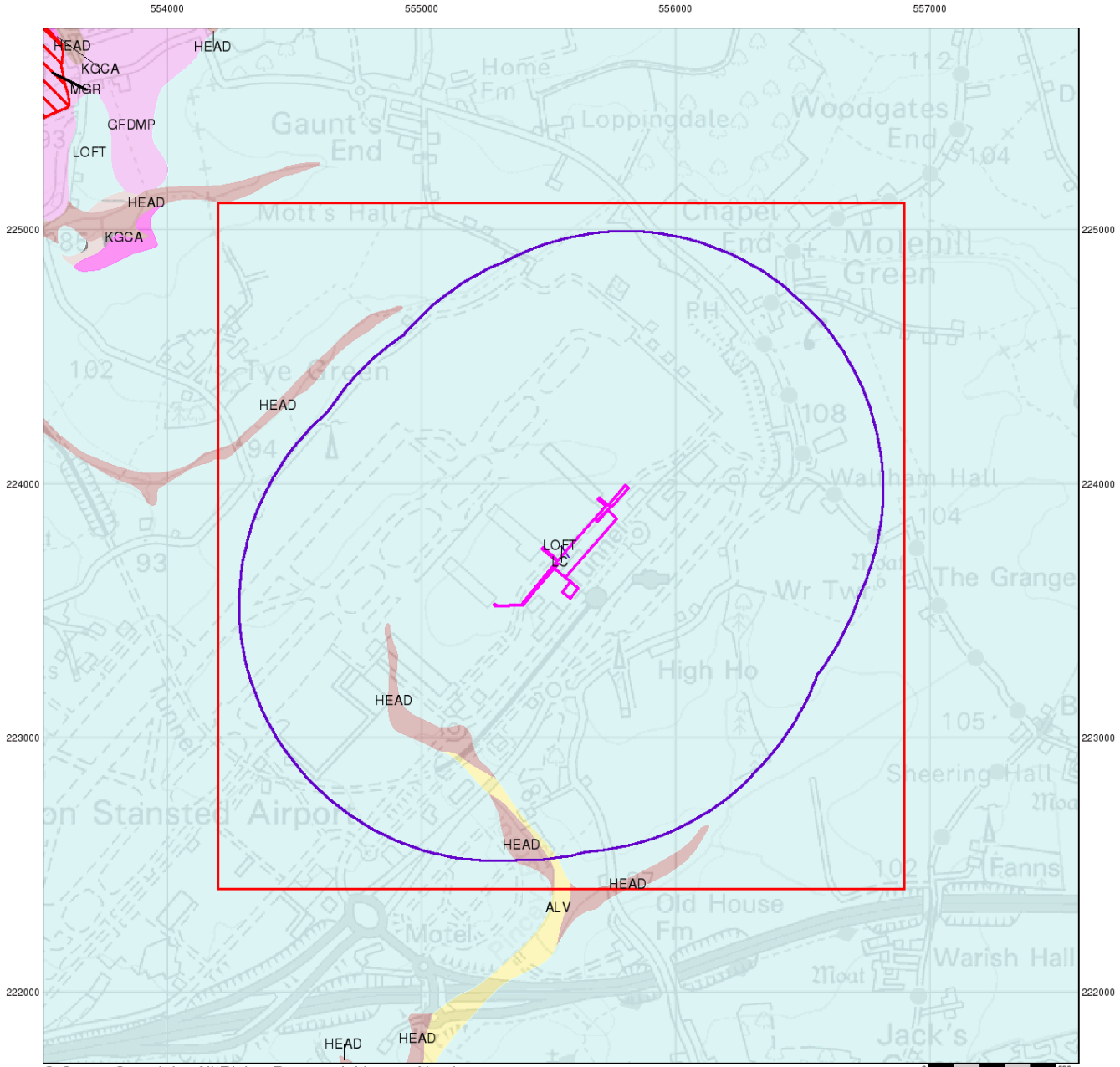

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

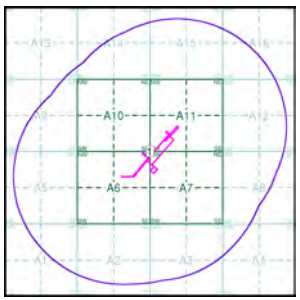
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: [redacted]

Combined Geology Map - Slice A



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Geology 1:50,000 Maps Legends

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Geology 1:50,000 Maps Coverage

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Map Sheet No:	**222**
Map Name:	**Great Dunmow**
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Bedrock Geology:	**Available**
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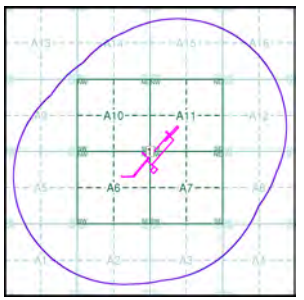
Faults:	**Not Supplied**
Landslip:	**Not Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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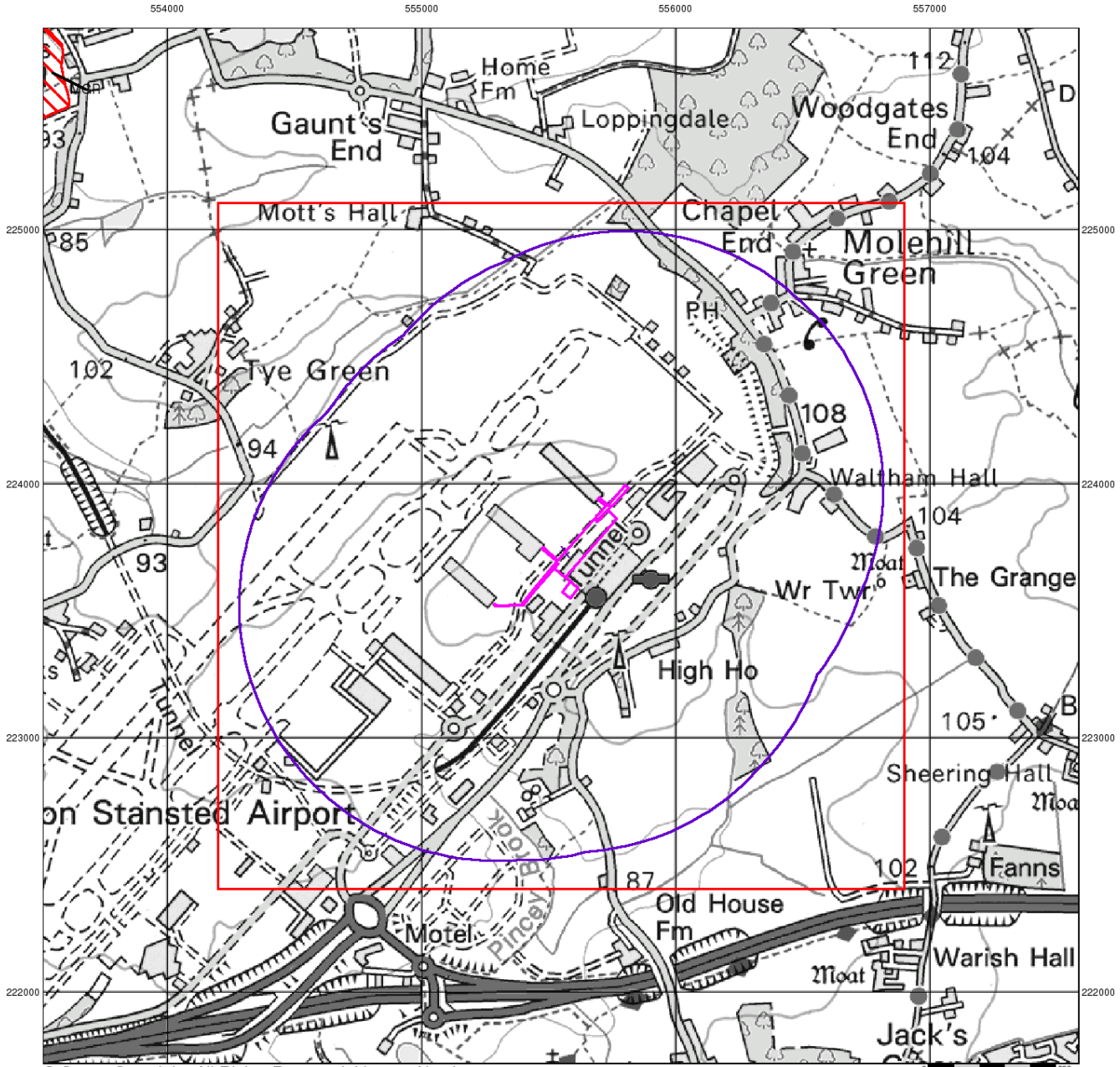

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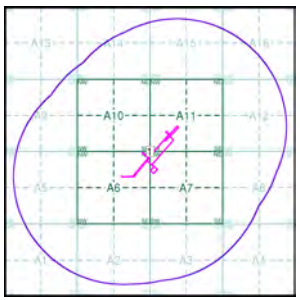

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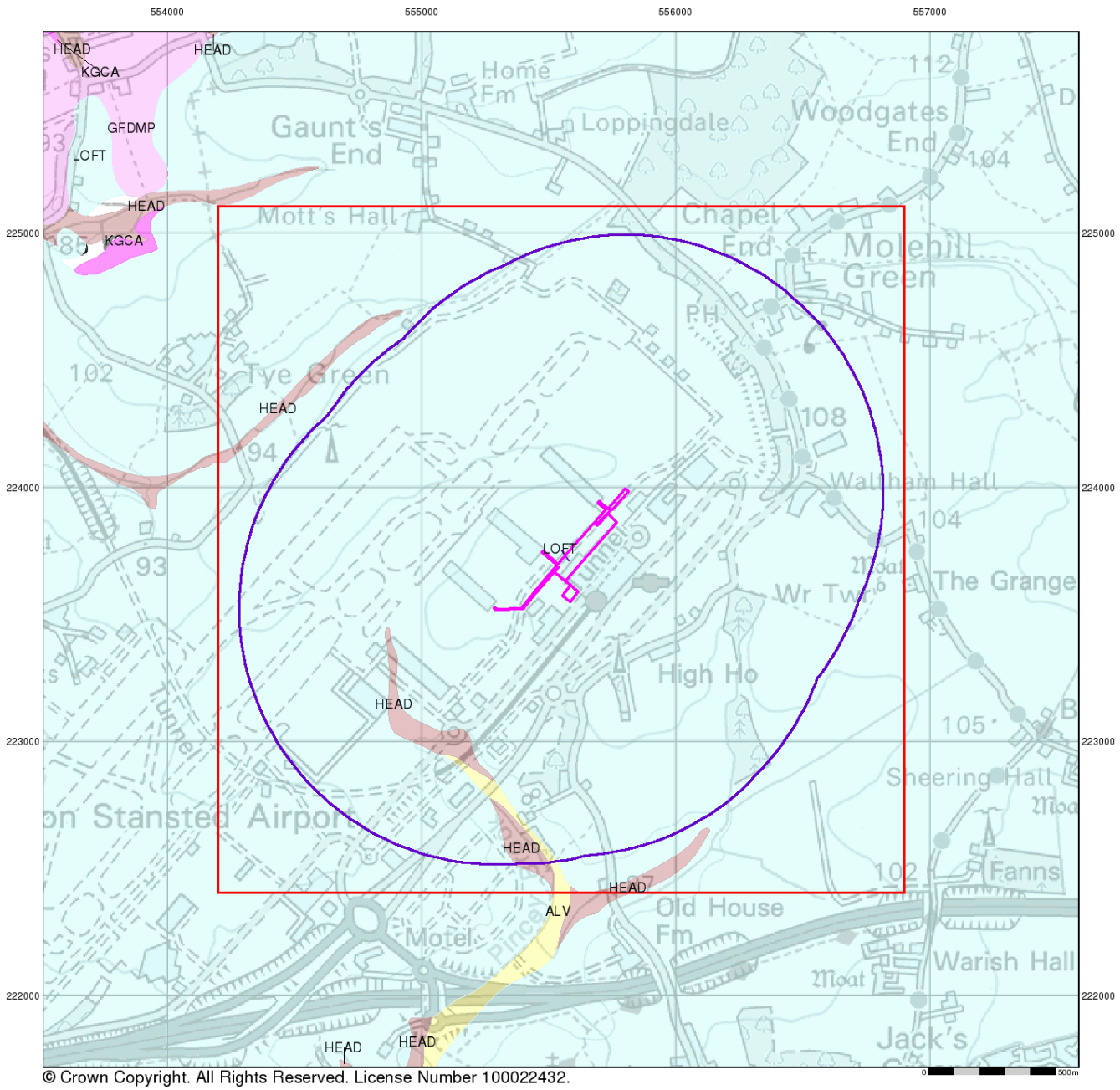

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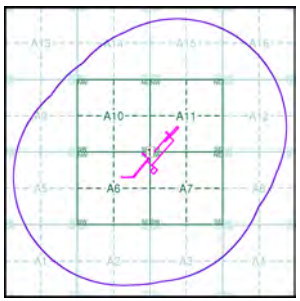

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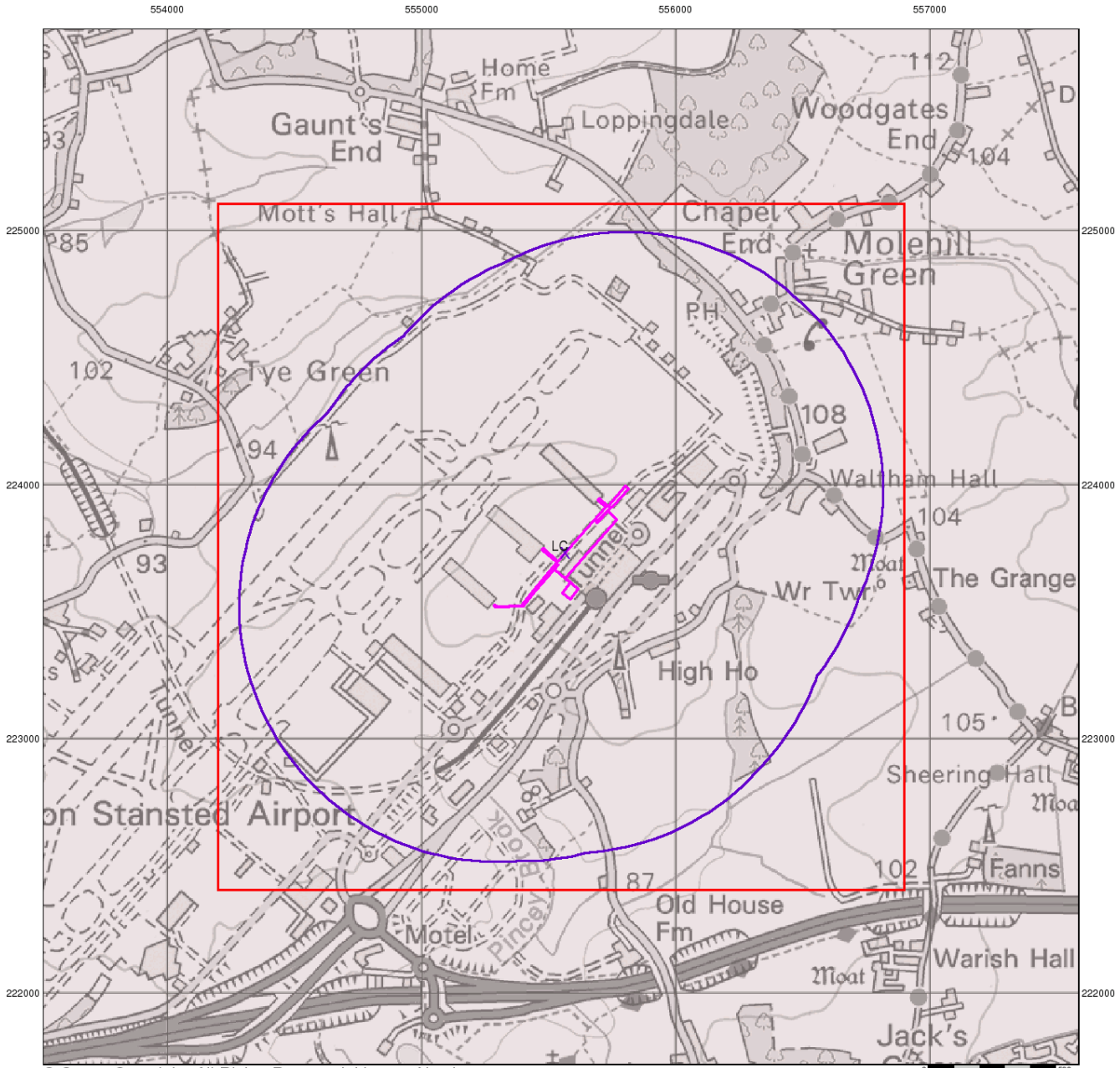

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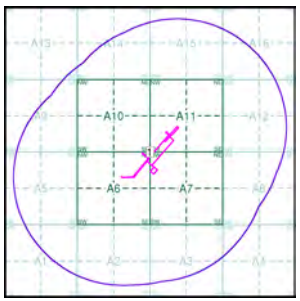
Bedrock and Faults Map - Slice A



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Fax:
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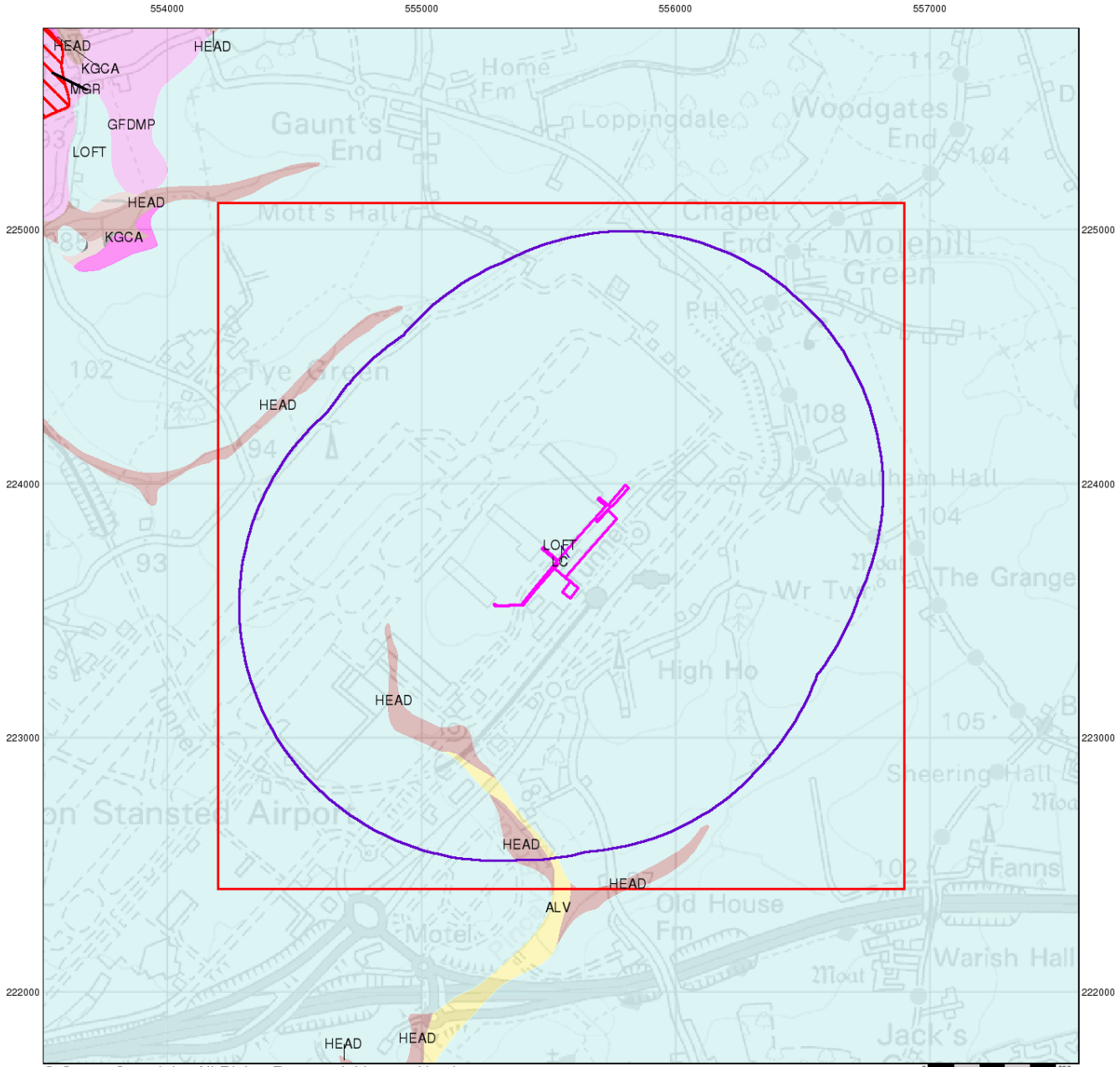


MOTT MACDONALD

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

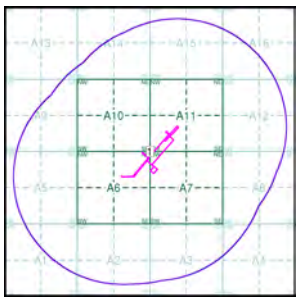
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: [redacted]

Combined Geology Map - Slice A

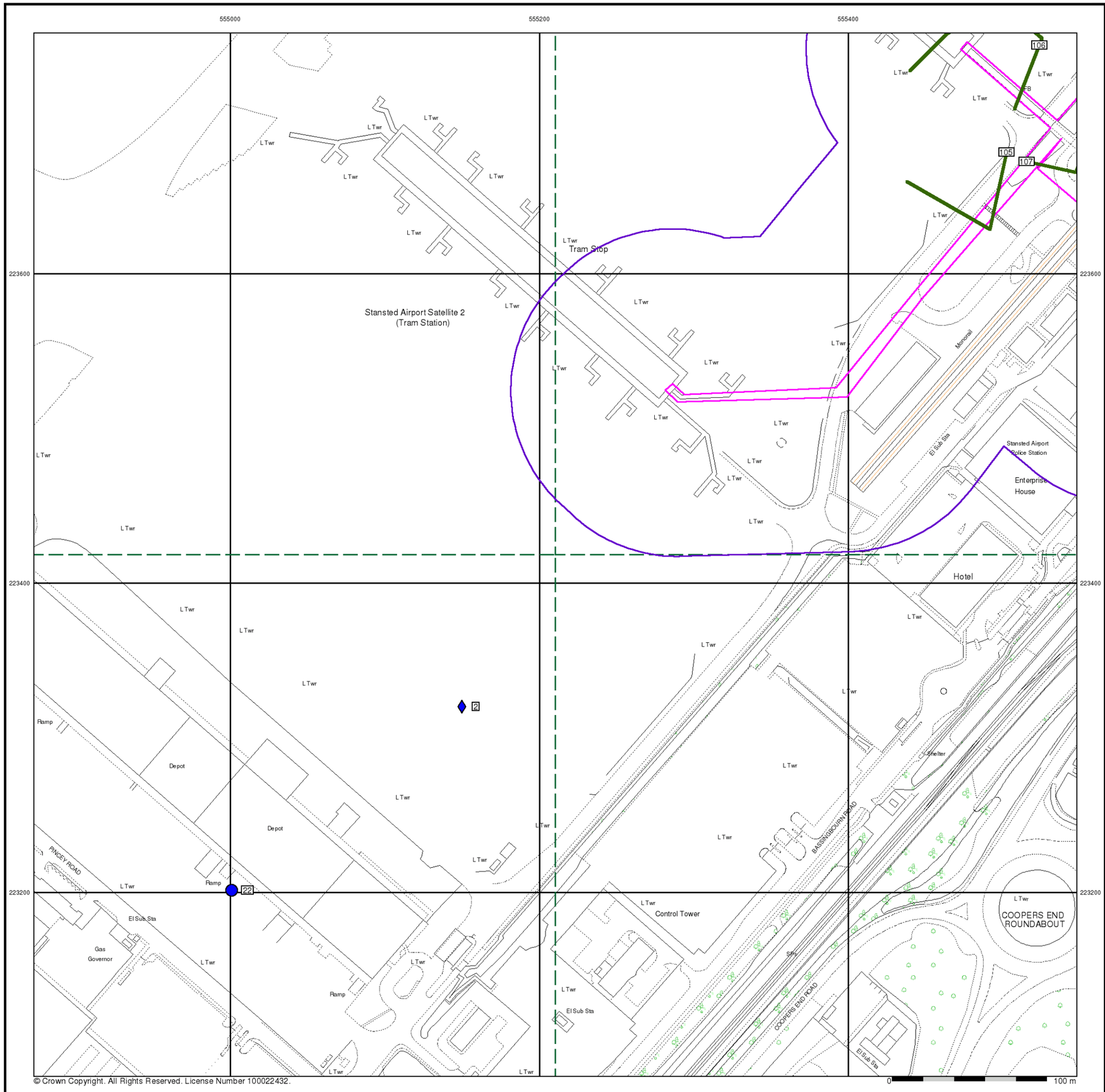


Order Details:

Order Number:	314797450_1_1
Customer Reference:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details:

Stansted Airport, Terminal Road North, Stansted, CM24 1RG



MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
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- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
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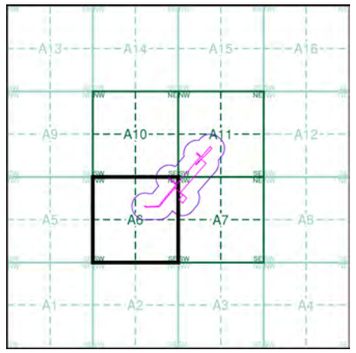
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A6



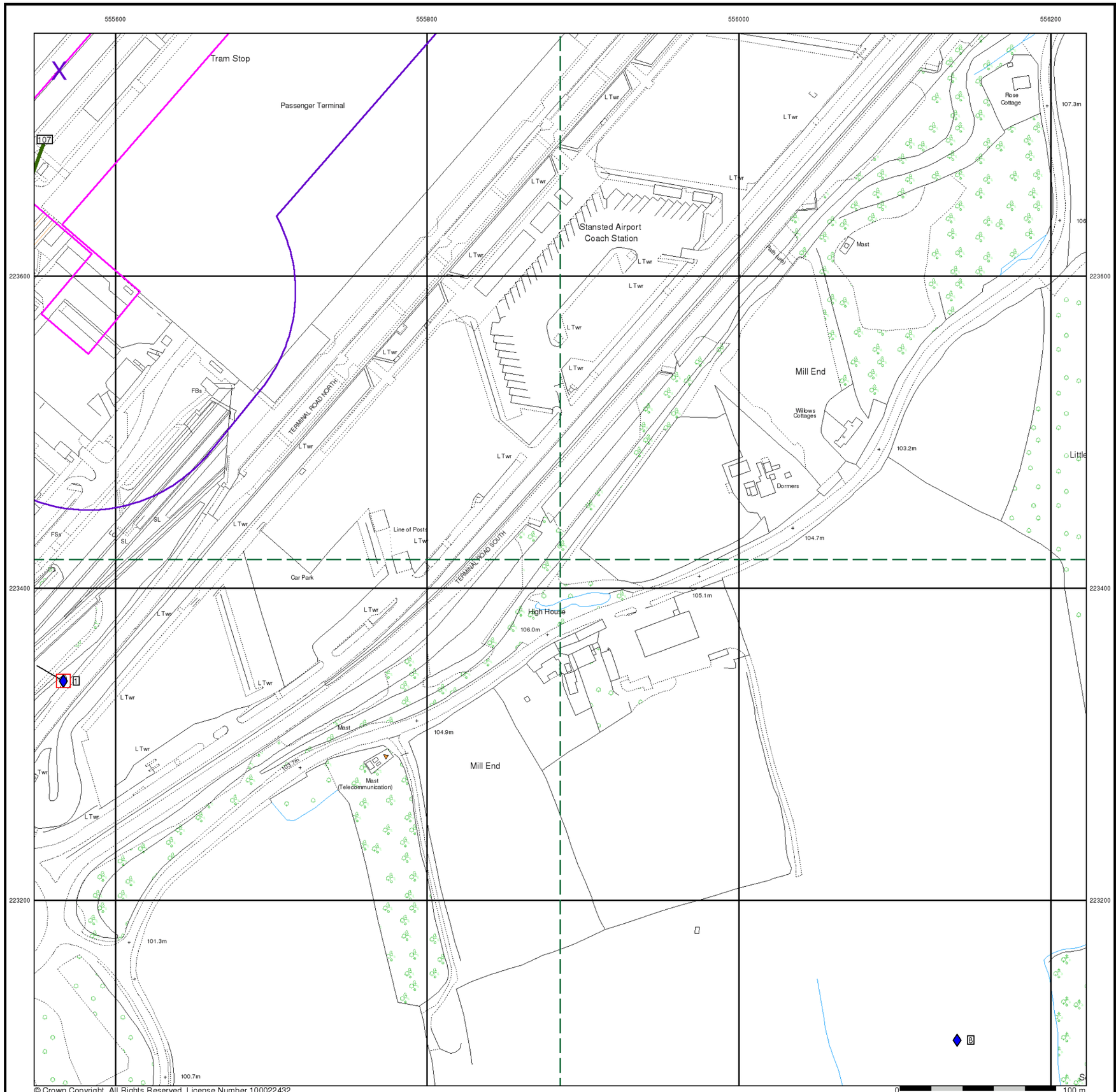
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Plot Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
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- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Waste

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- Registered Landfill Site (Location)
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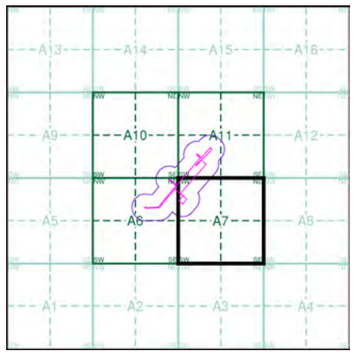
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A7



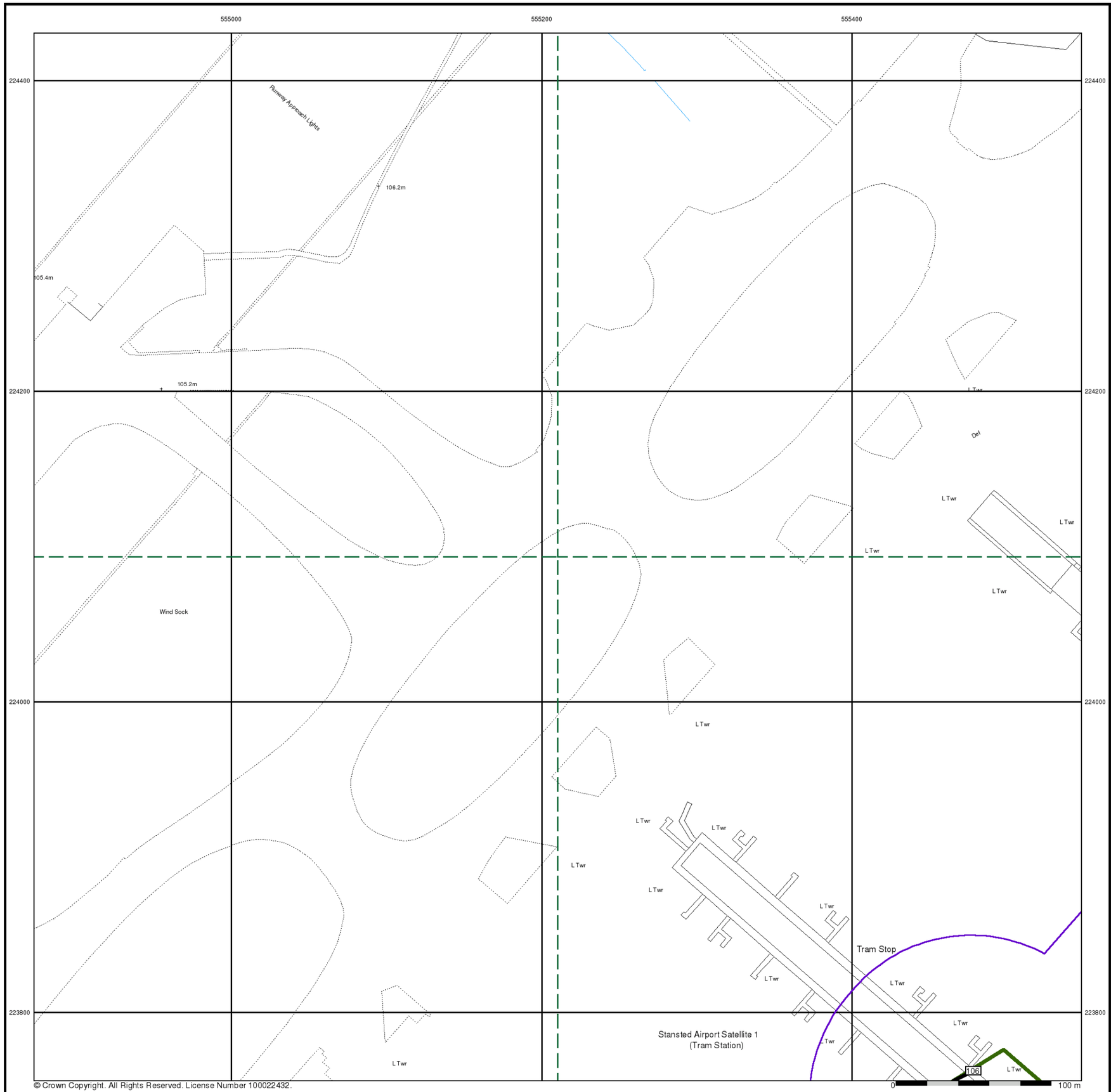
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Plot Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
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Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Waste

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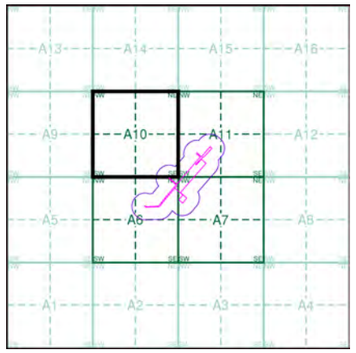
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A10



Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Plot Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

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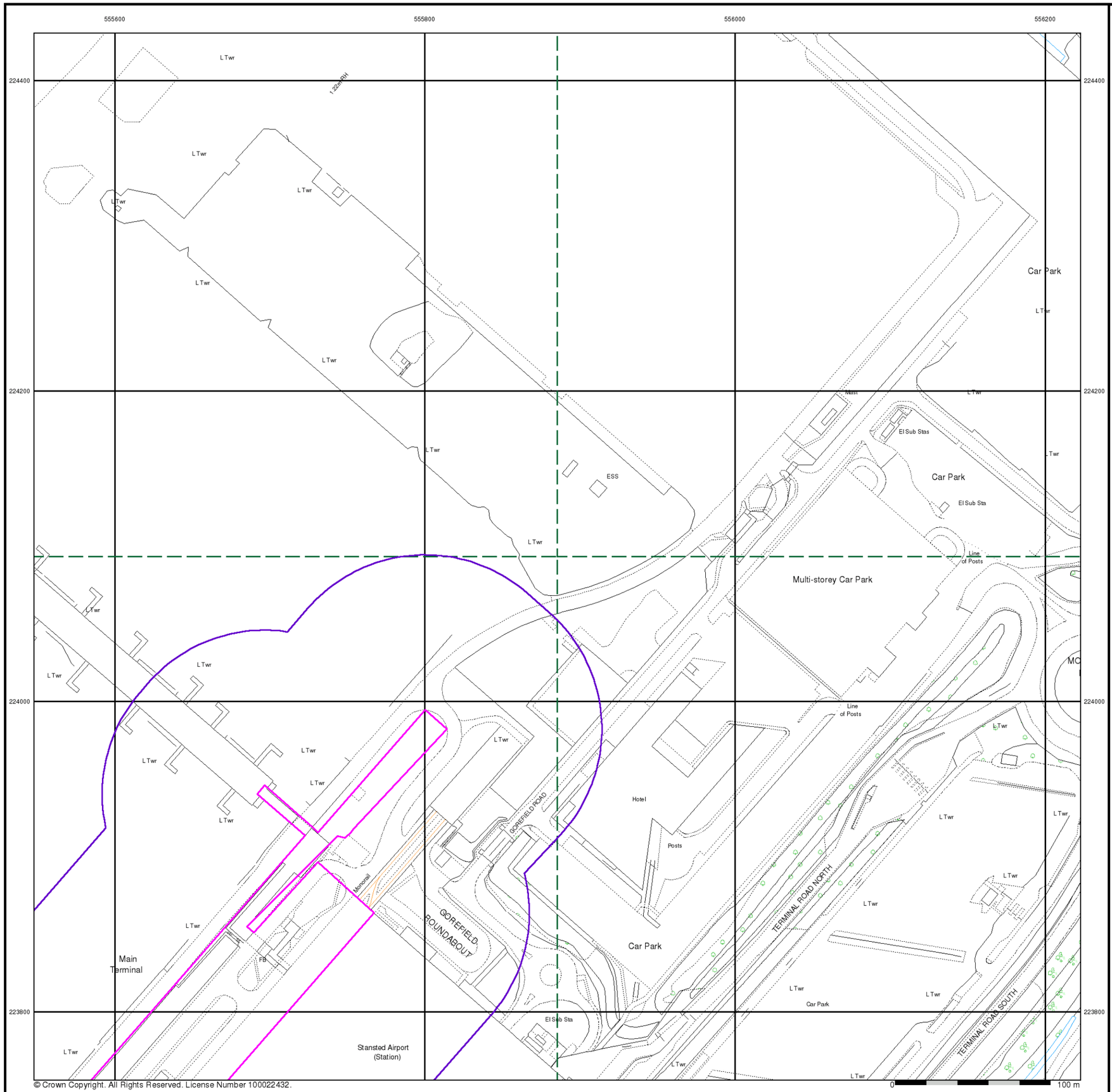

MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
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- River Quality Sampling Point
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- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

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- NIHHS Site
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Geological

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Waste

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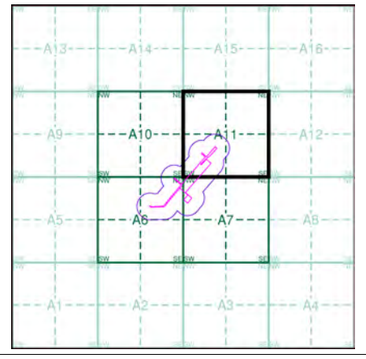
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A11



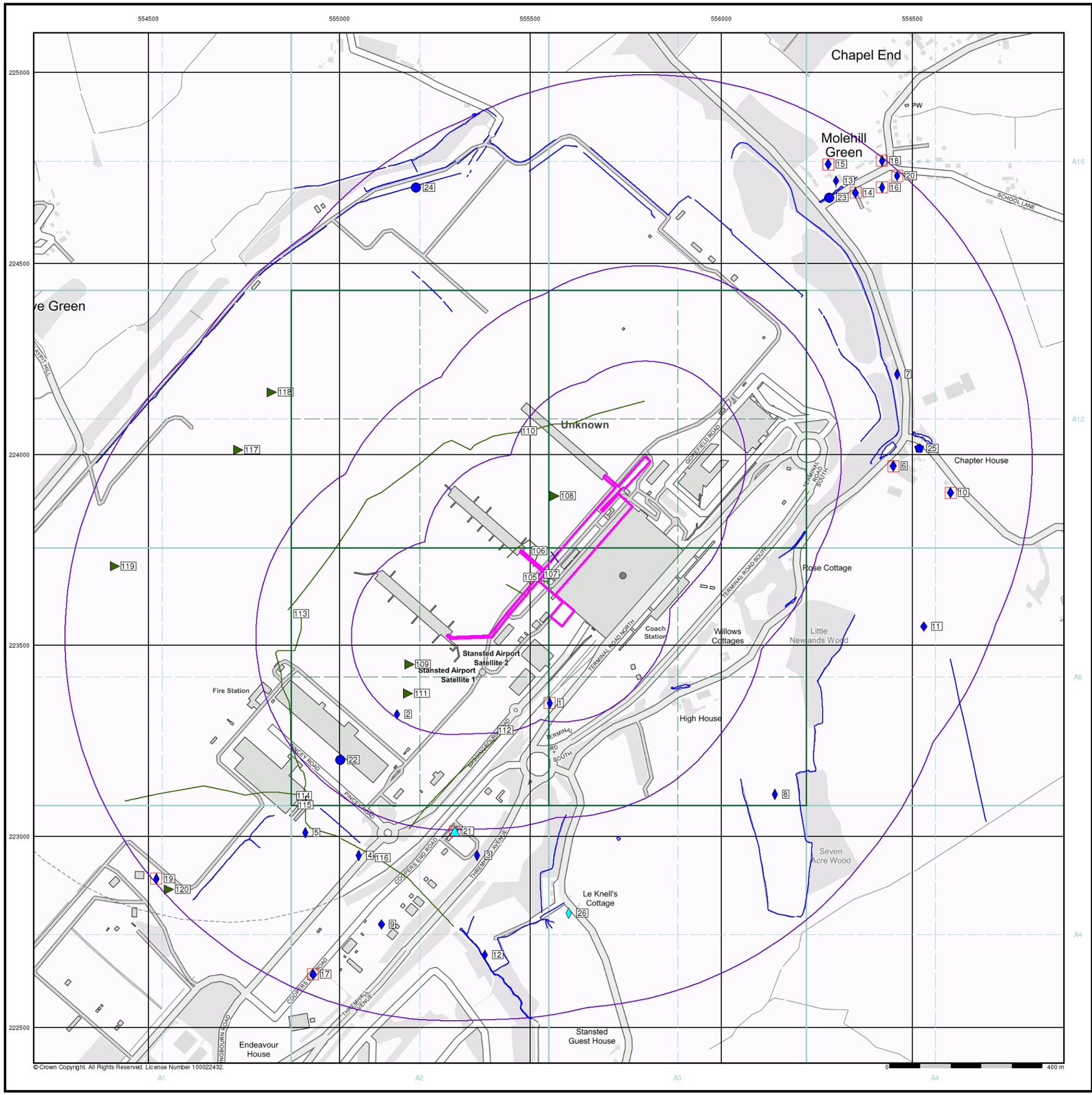
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Plot Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
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- Integrated Pollution Prevention Control
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- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Waste

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- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
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- Registered Landfill Site (Location)
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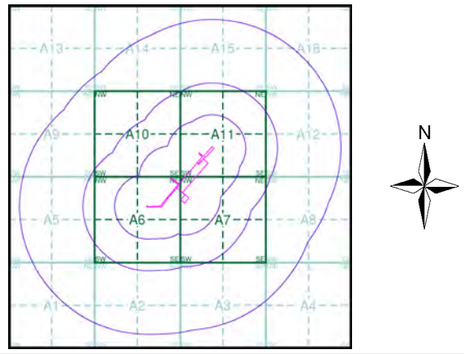
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

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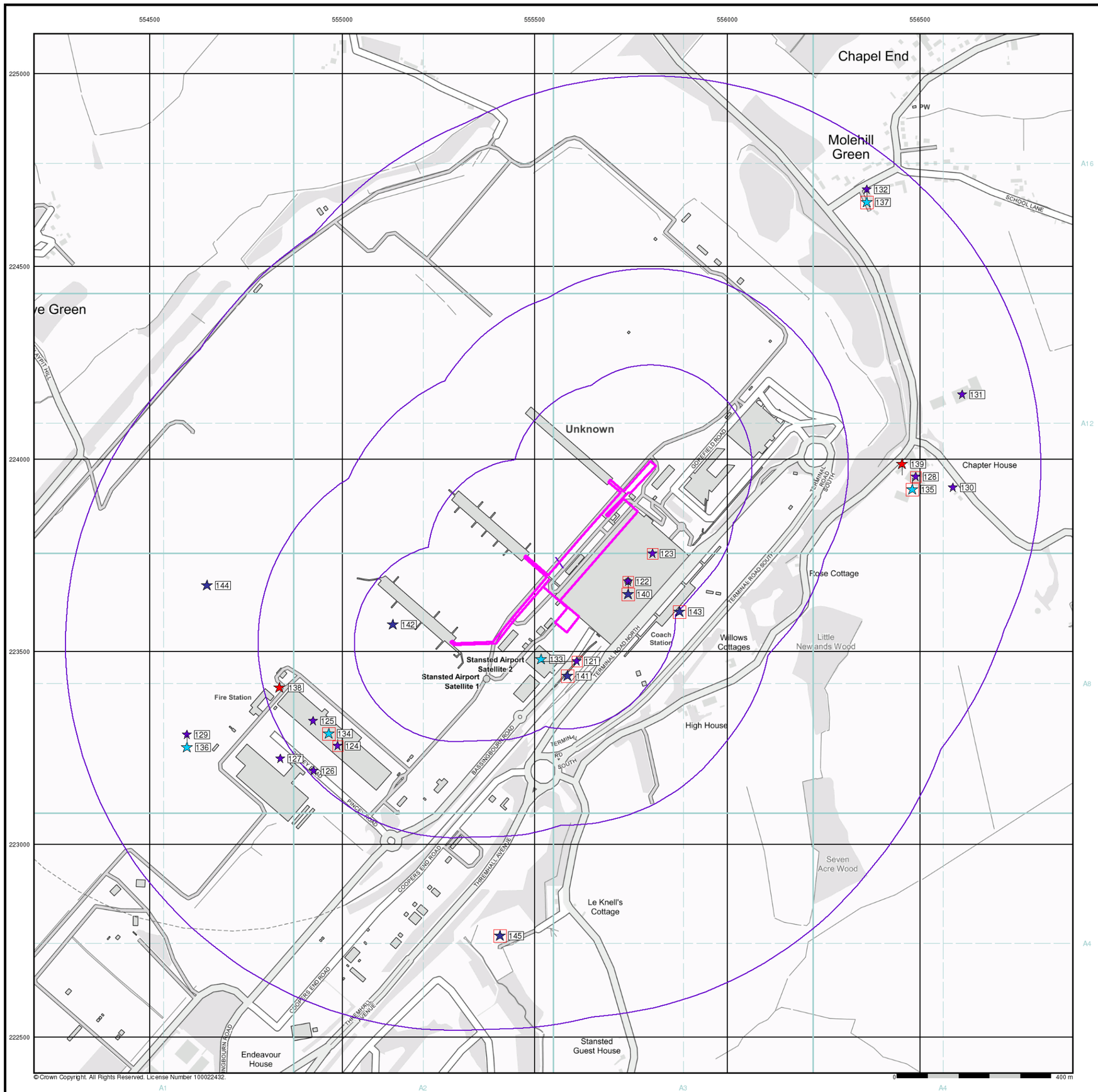
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

Industrial Land Use Map

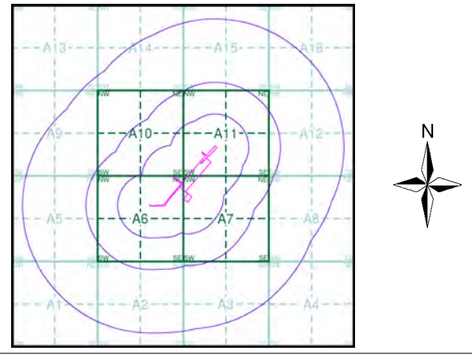
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

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National Grid Reference:	555560, 223730
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Site Details

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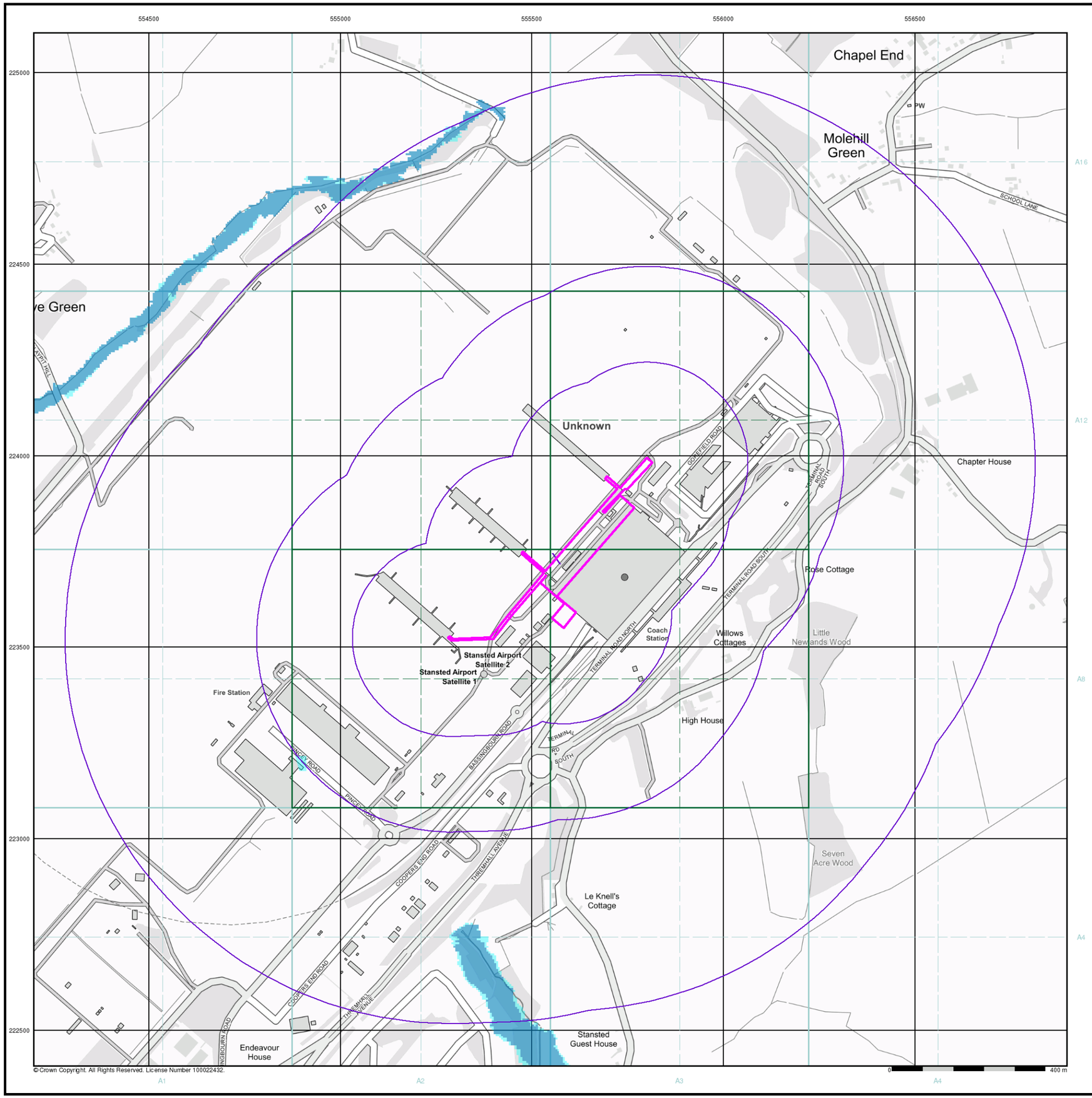
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

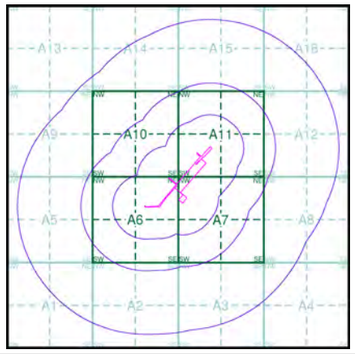
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

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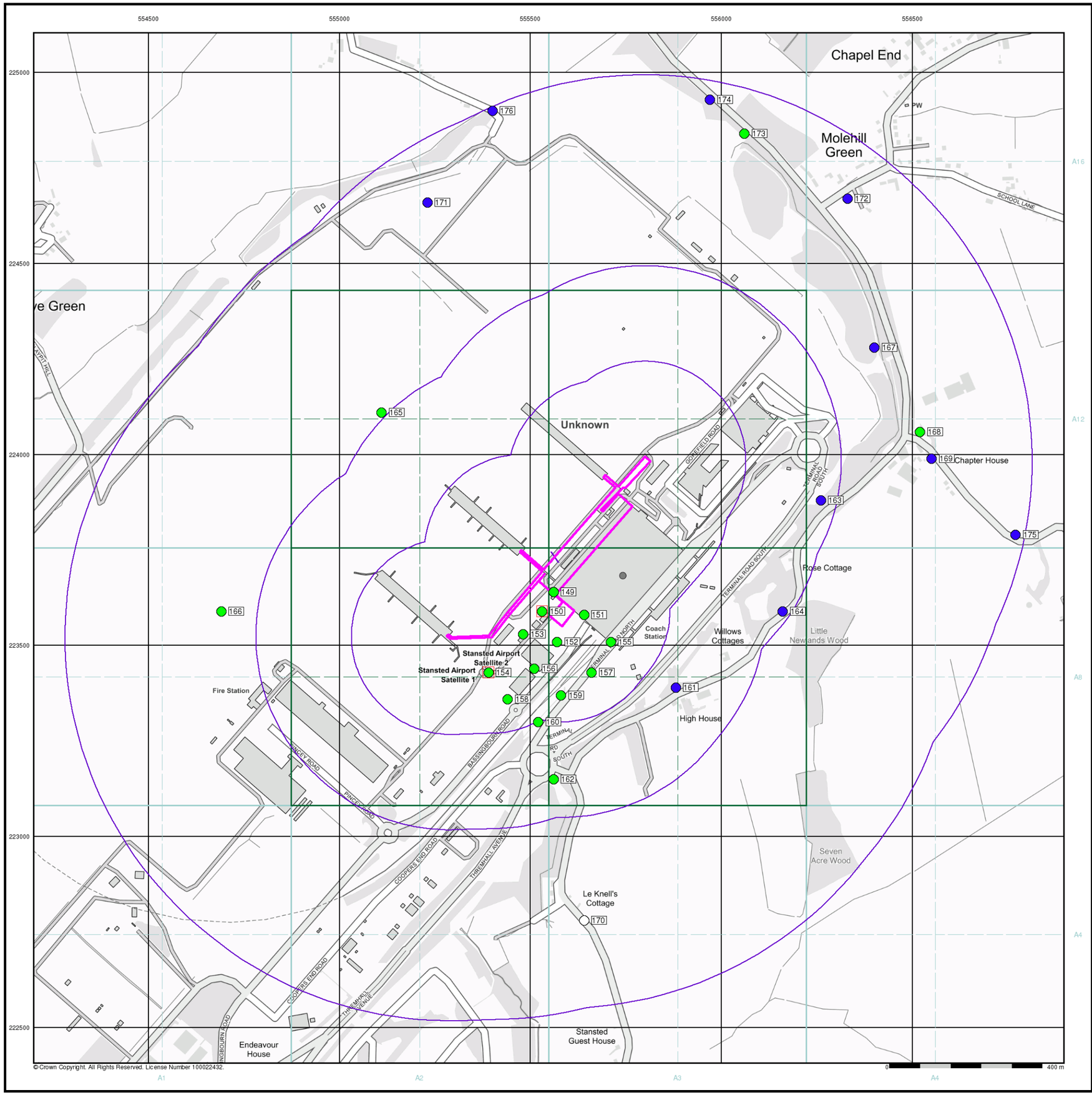


MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

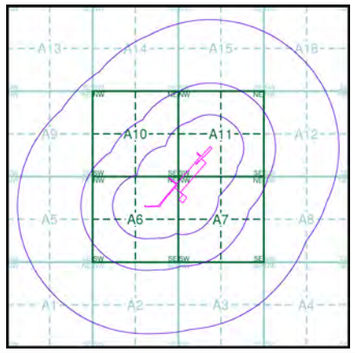
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A

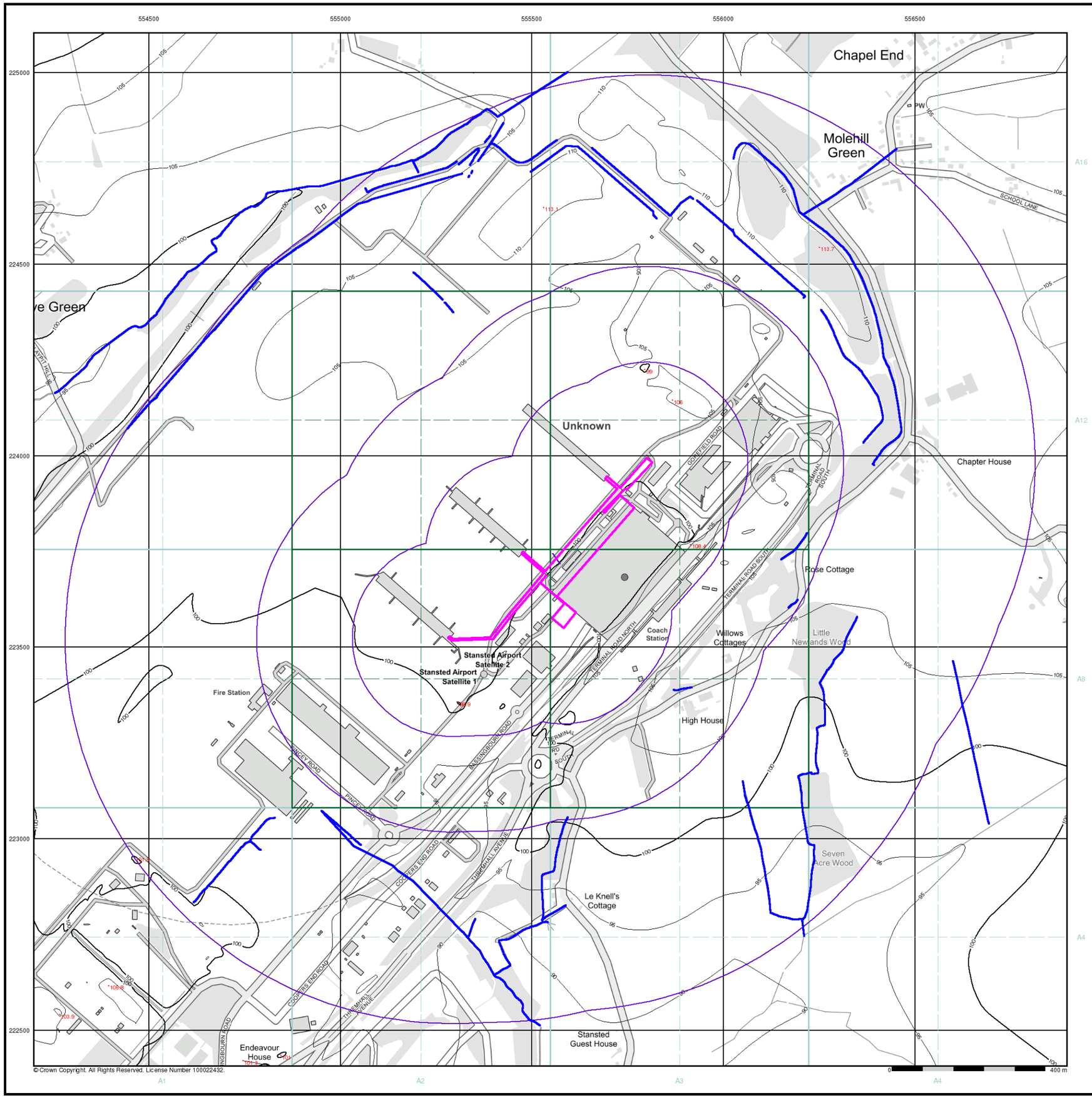


Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG



MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

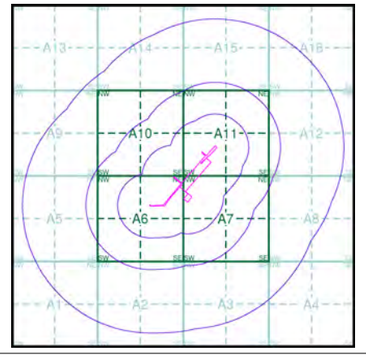
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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Landmark INFORMATION GROUP
Tel: 0844 844 9952
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Web: [redacted]

554500 555000 555500 556000 556500

225000 224500 224000 223500 223000 222500

Chapel End
Molehill Green
Unknown
Chapter House
Rose Cottage
Coach Station
Willows Cottages
Little Newlands Wood
Stansted Airport Satellite 2
Stansted Airport Satellite 1
Fire Station
High House
Le Knell's Cottage
Stansted Guest House
Endeavour House
TERMINAL ROAD SOUTH
TERMINAL ROAD NORTH
A16
A12
A8
A4

0 400 m

A1 A2 A3 A4

MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water

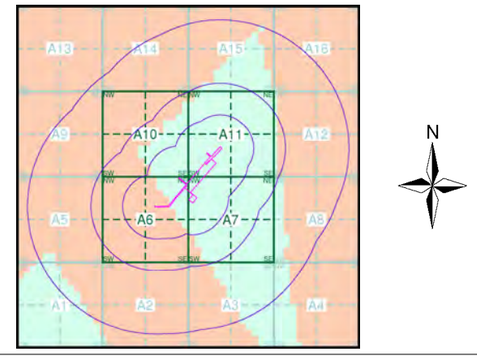
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



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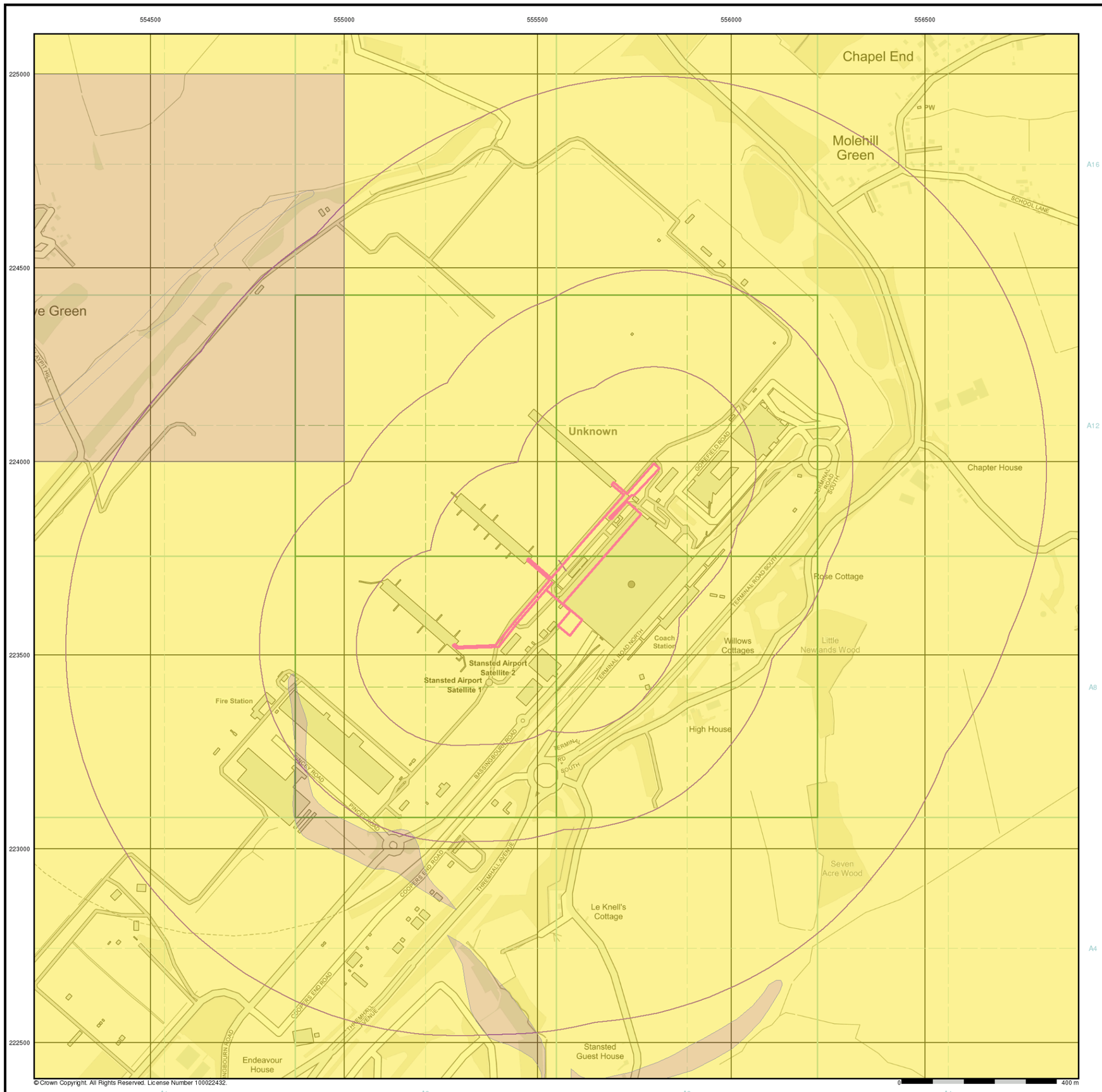


MOTT MACDONALD

General

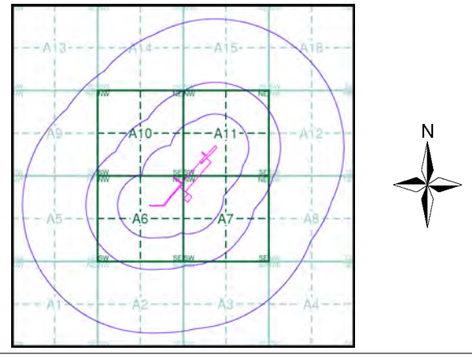
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



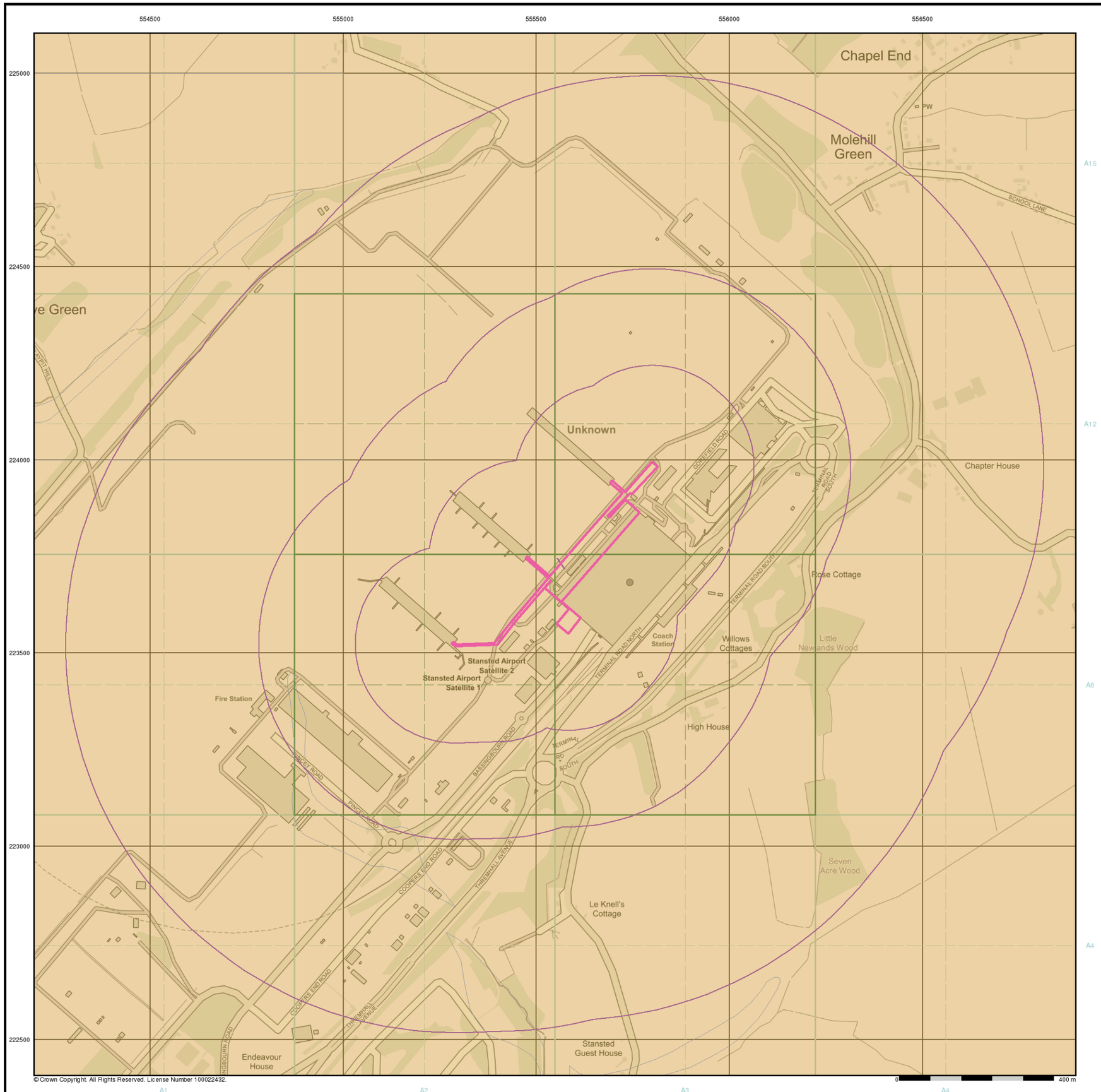
Order Details

Order Details:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

General

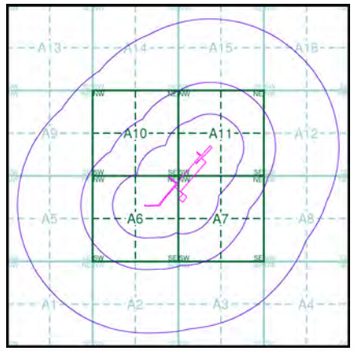
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

	< 1.8
	1.8 - 2.2
	2.2 - 3.0
	> 3.0

Estimated Soil Chemistry Cadmium - Slice A



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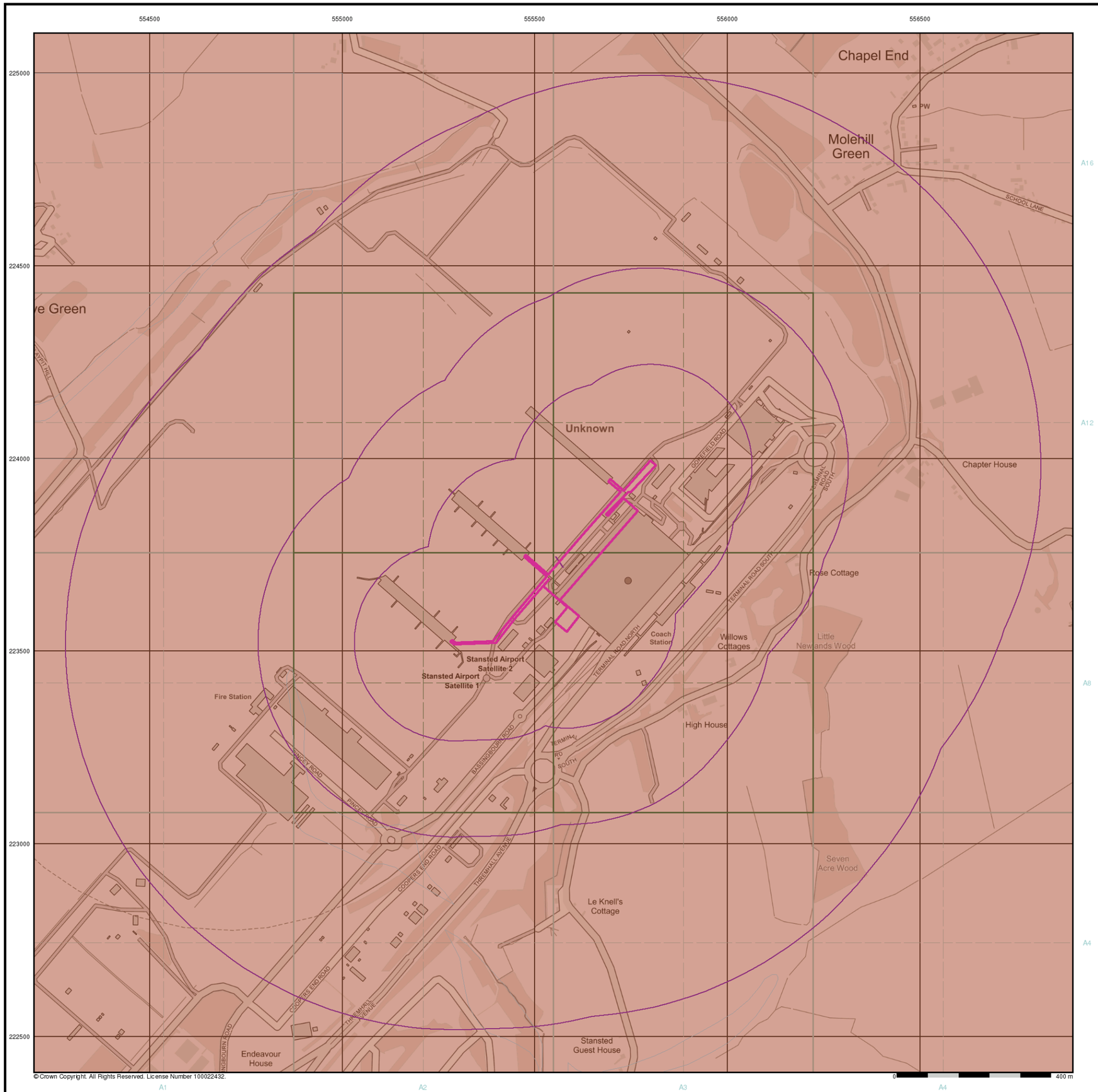


MOTT MACDONALD

General

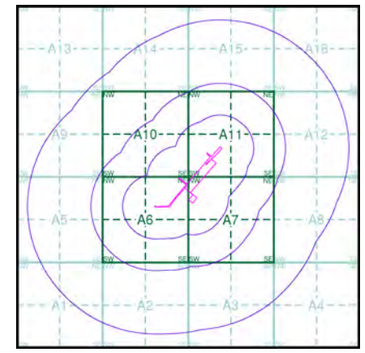
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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Web: [redacted]

554500 555000 555500 556000 556500

225000 224500 224000 223500 223000 222500

A16 A12 A8 A4

Chapel End
Molehill Green
Unknown
Chapter House
Rose Cottage
Coach Station
Willows Cottages
Little Newands Wood
Stansted Airport Satellite 2
Stansted Airport Satellite 1
Fire Station
High House
Seven Acre Wood
Le Knell's Cottage
Endeavour House
Stansted Guest House
SCHOOL LANE
TERMINAL ROAD NORTH
TERMINAL ROAD SOUTH
BASSINGBOURN ROAD
COOPERS END ROAD
THE MALL AVENUE
NGBOURN ROAD

0 400 m

A1 A2 A3 A4

MOTT MACDONALD

General

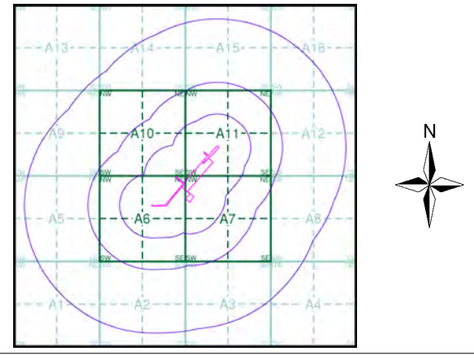
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



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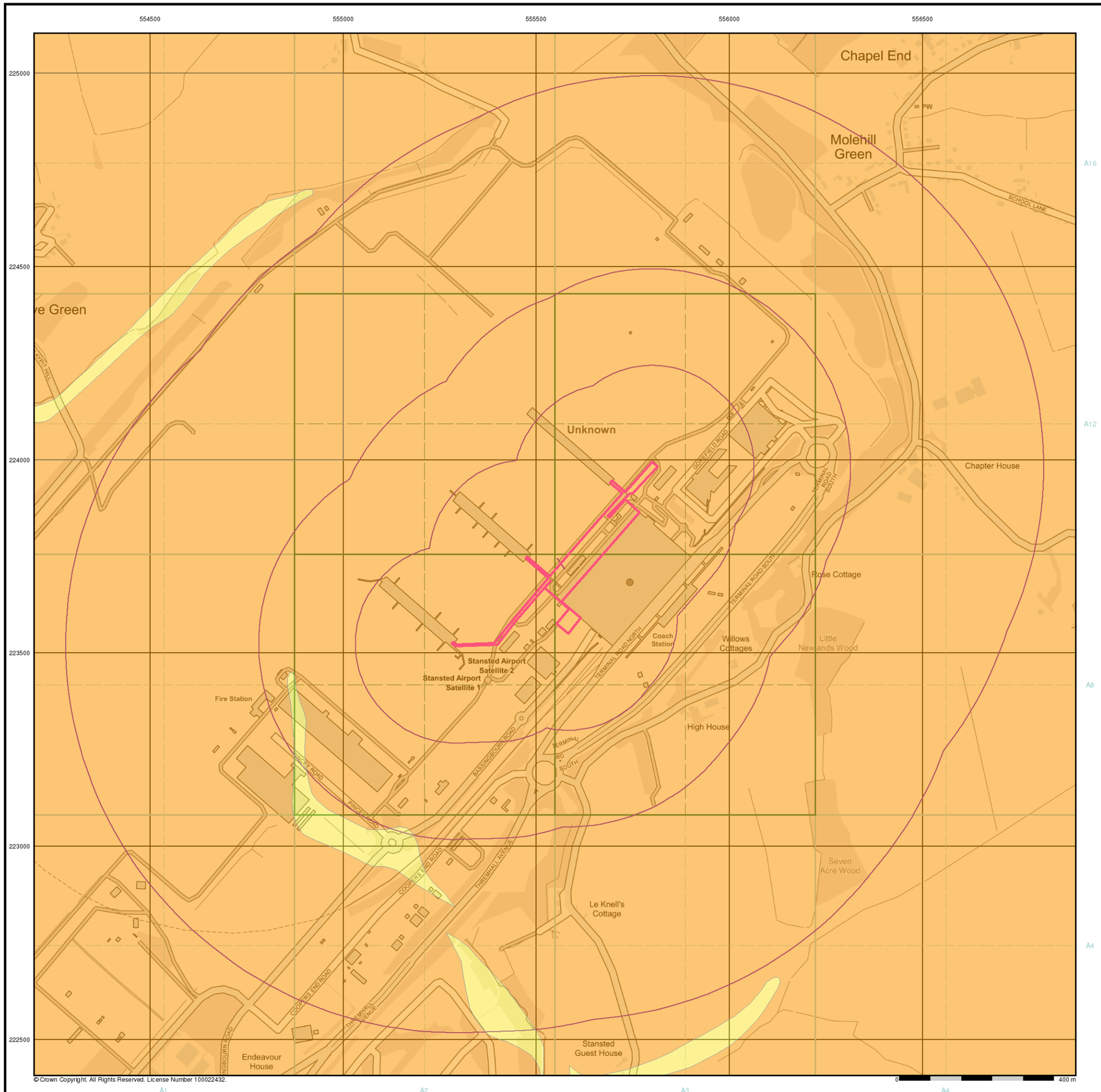


MOTT MACDONALD

General

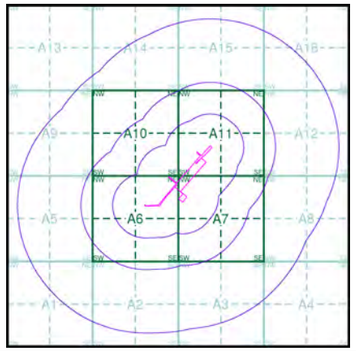
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



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Landmark INFORMATION GROUP
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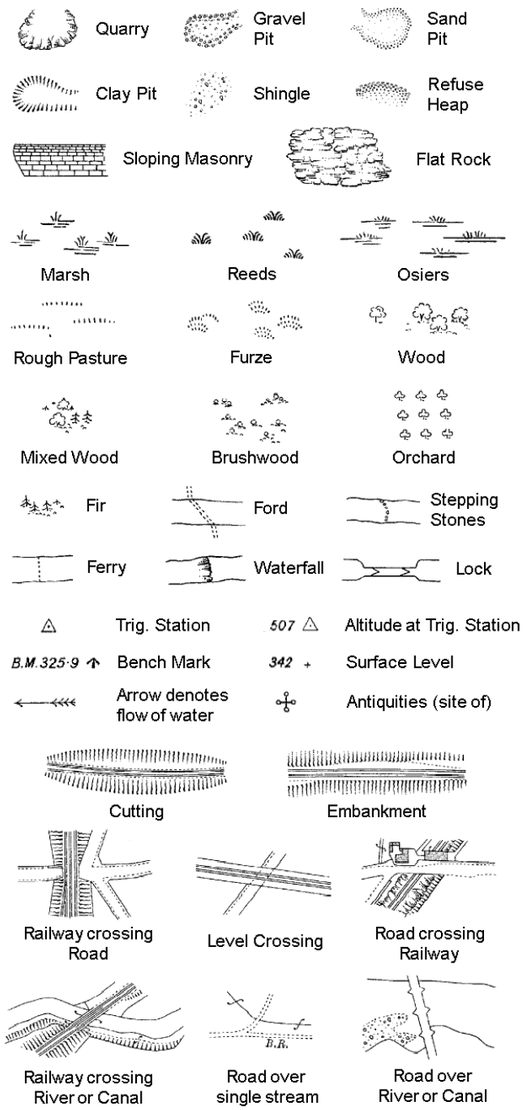
Fax: 0844 844 9951
Web: [redacted]

Historical Mapping Legends

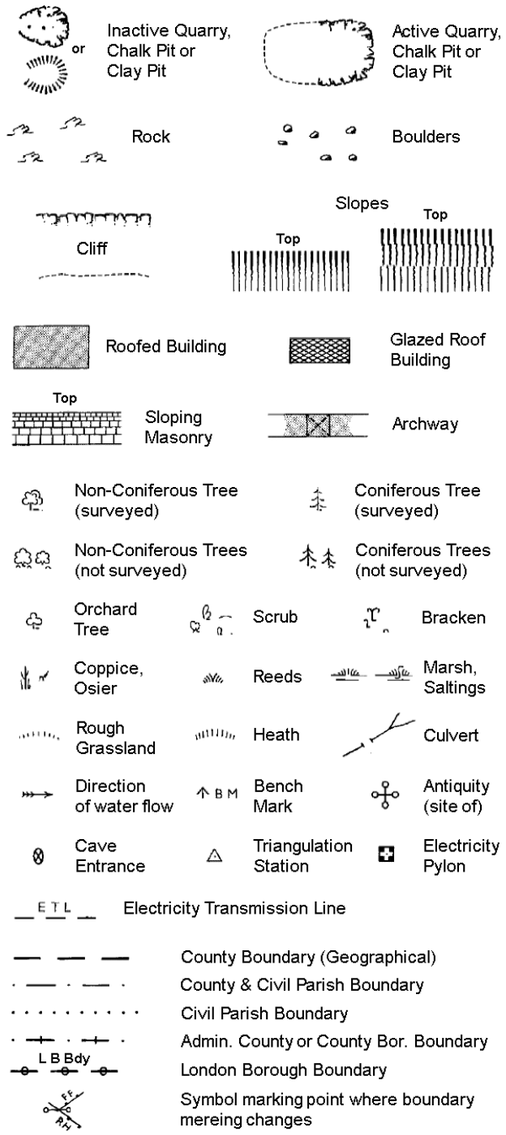
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

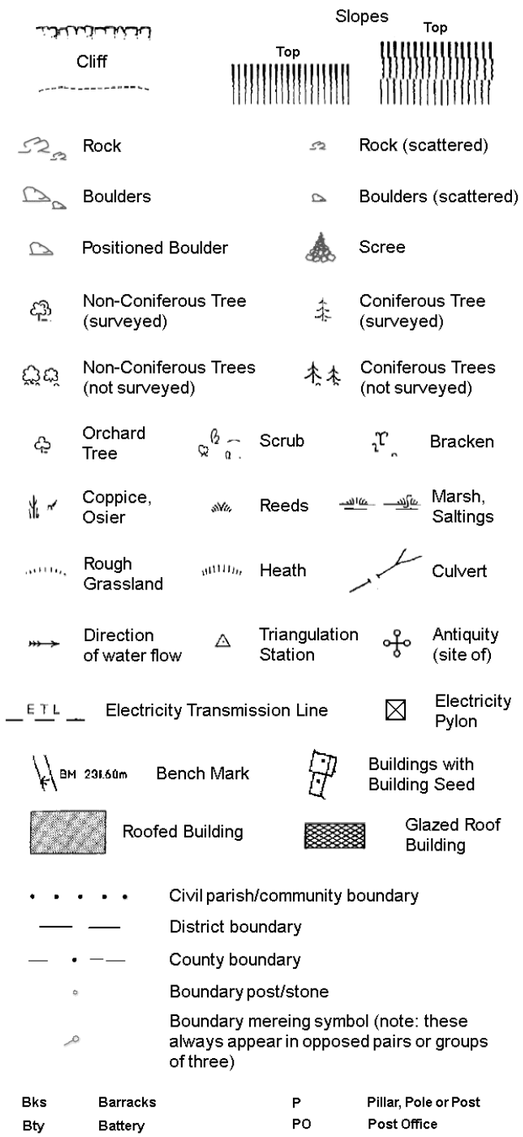
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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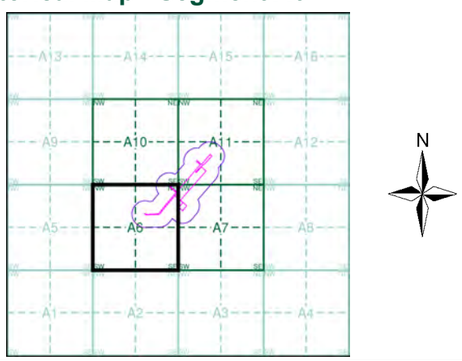
Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1876	2
Essex	1:2,500	1897	3
Essex	1:2,500	1921	4
Ordnance Survey Plan	1:2,500	1970	5
Additional SIMs	1:2,500	1985 - 1991	6
Additional SIMs	1:2,500	1990 - 1992	7
Large-Scale National Grid Data	1:2,500	1993	8
Large-Scale National Grid Data	1:2,500	1996	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A6



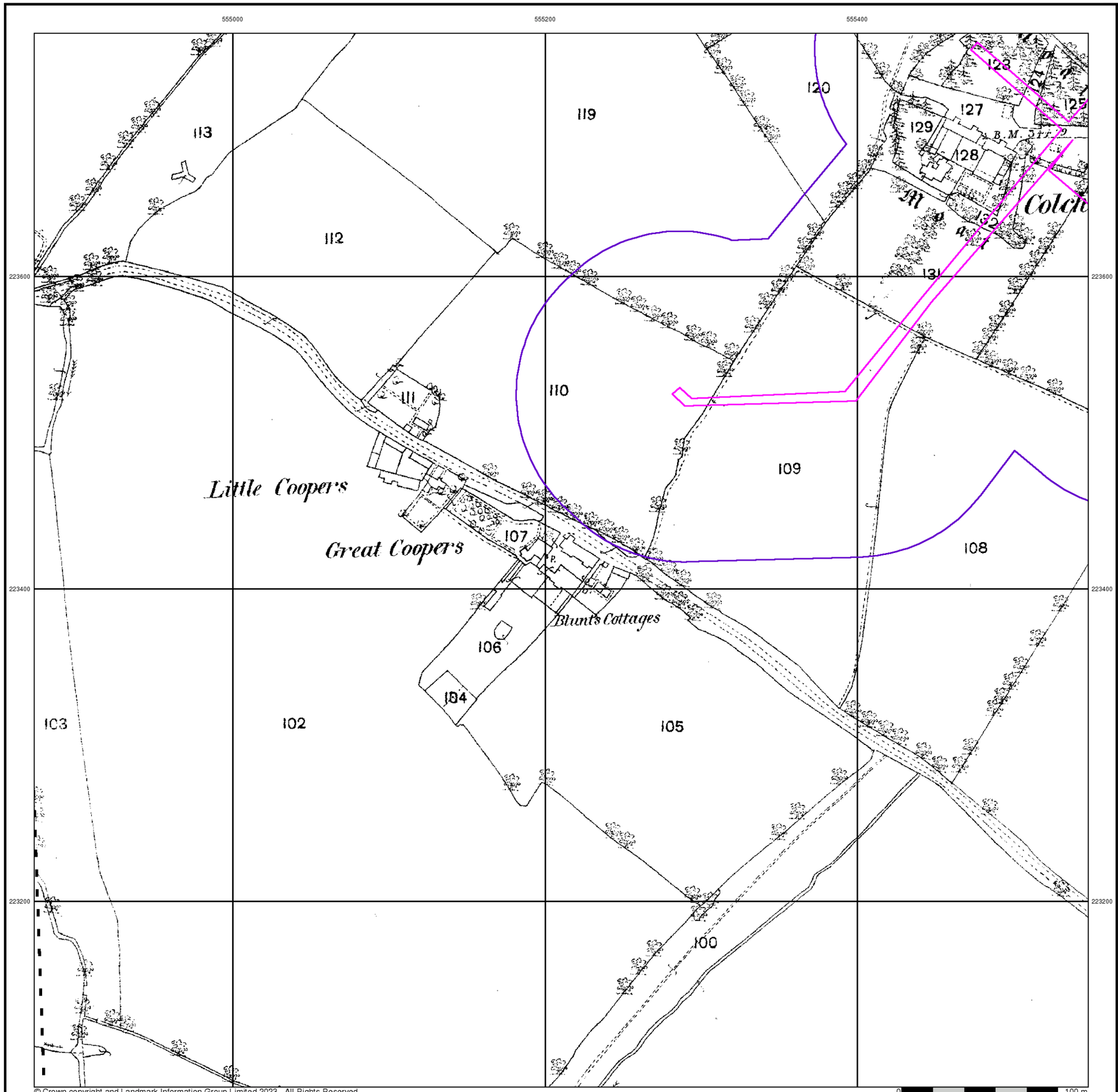
Order Details

Order Number: 314797450_1_1
Customer Ref: 100106627 MM STN_TP Geotech/Env
National Grid Reference: 555560, 223730
Slice: A
Site Area (Ha): 2.73
Search Buffer (m): 100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



0 100 m

M

M

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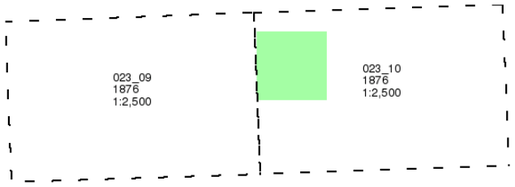
Essex

Published 1876

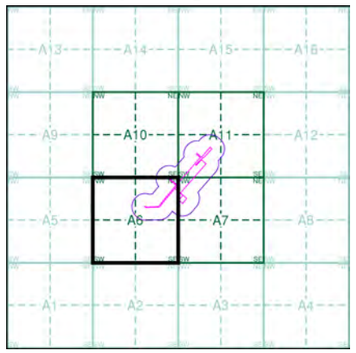
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



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Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]

555000 555200 555400

223600 223400 223200

232 2·478 | 156 3·191 | 155 13·208 | 148 2·413 | 146 ·611 | 149 ·236 | 144 ·498 | 150 5·18 | 151 3·101 | 157 5·373 | 142 | 158 ·288 | 154 5·849 | 153 6·754 | 152 7·740 | 160 2·098 | 230 3·464 | 159 33·116 | 161 7·127 | 162 2·901 | 40·805

Moat | Little Coopers | Great Coopers | Blunt's Cottages | F. P. | F. B.

0 100 m

M M

MOTT MACDONALD

Essex

Published 1897

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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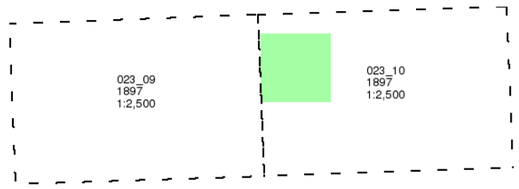
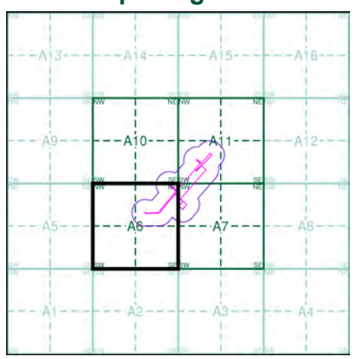


Historical Map - Segment A6



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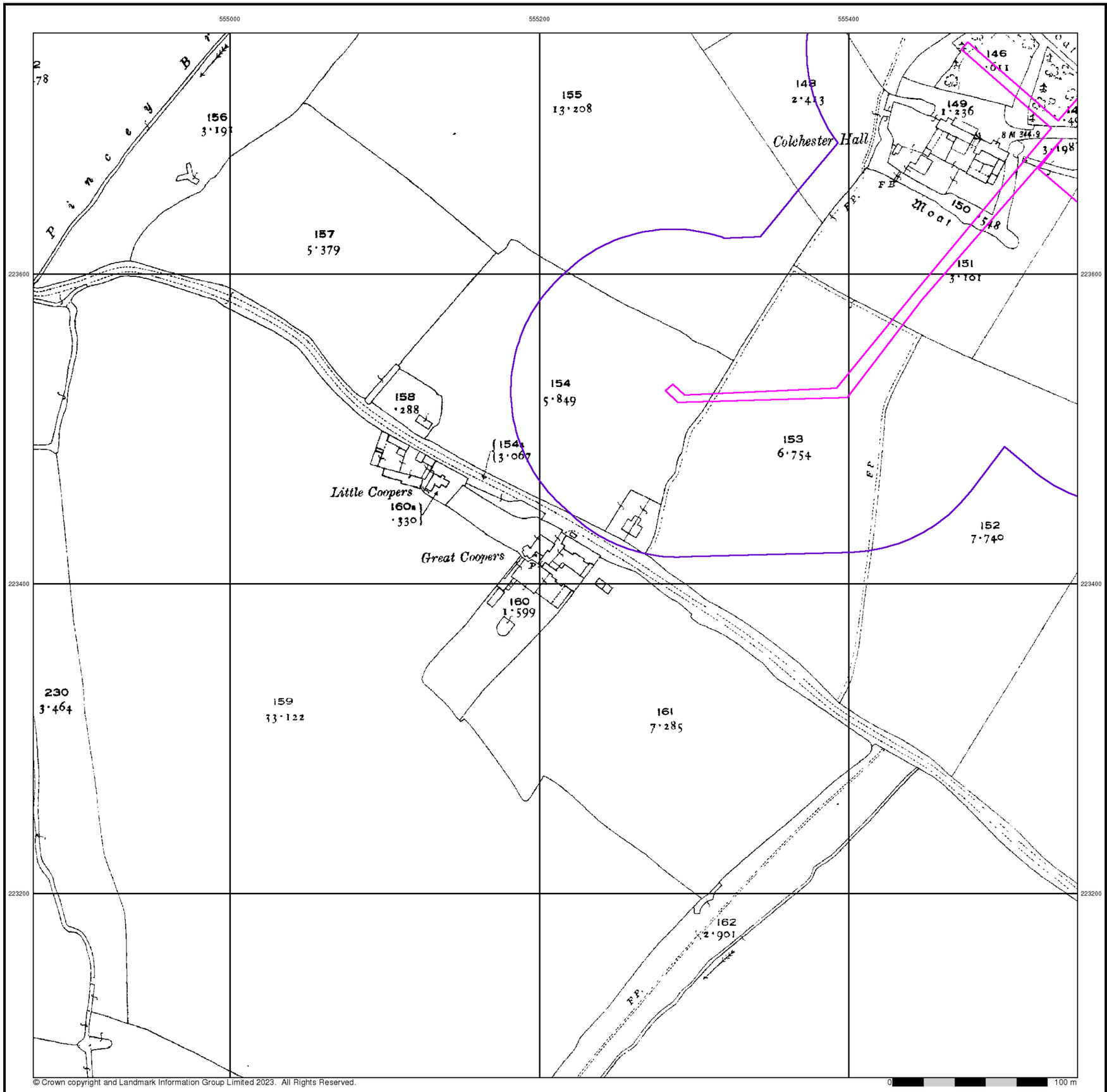

MOTT MACDONALD

Essex

Published 1921

Source map scale - 1:2,500

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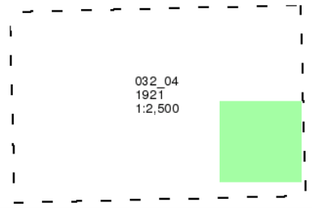
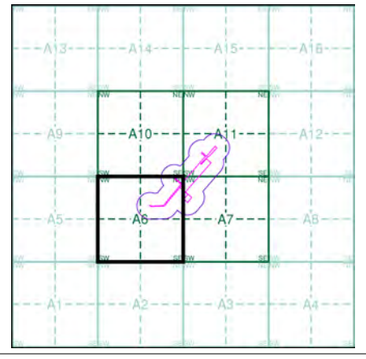


Historical Map - Segment A6



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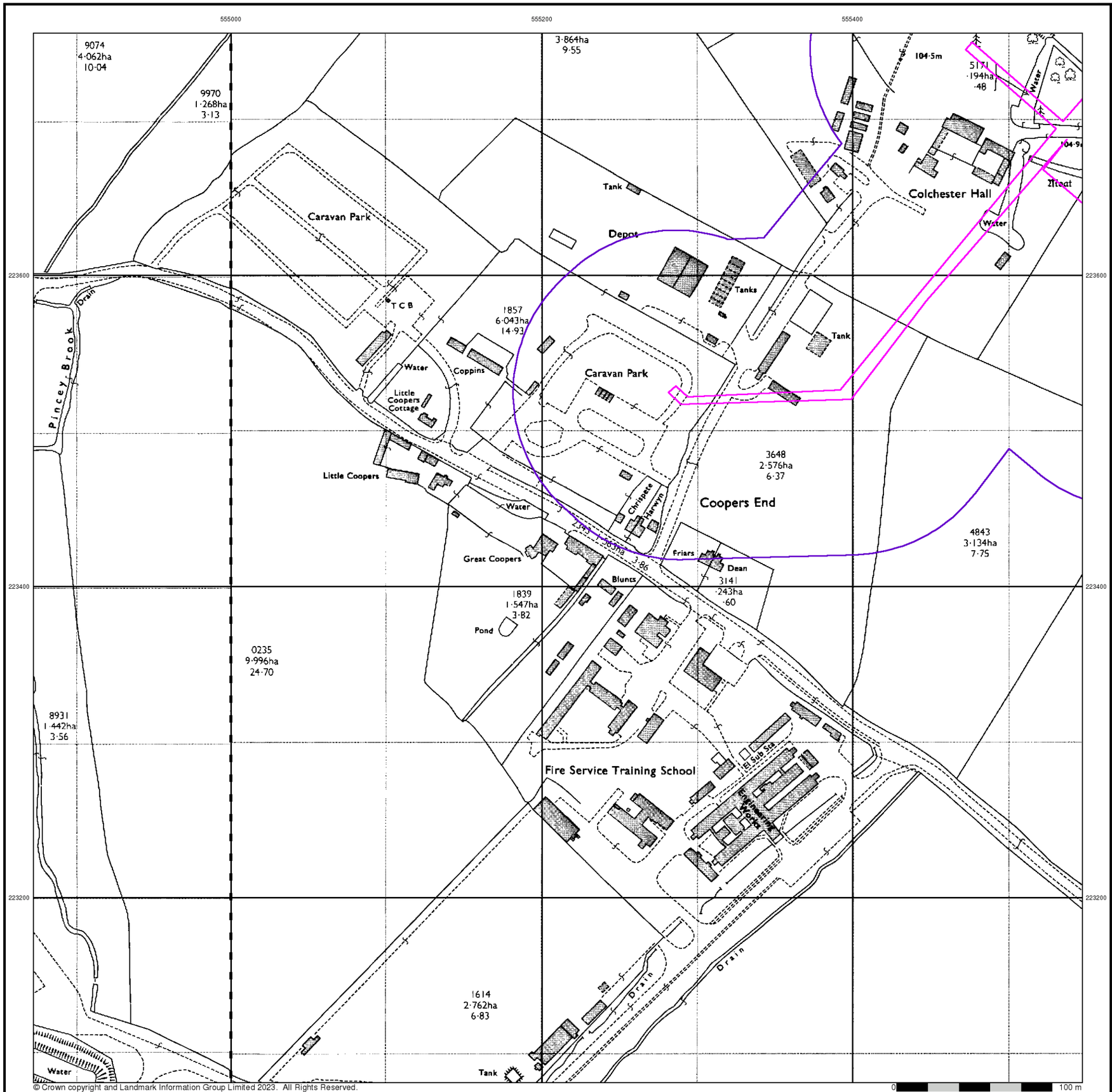

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Ordnance Survey Plan

Published 1970

Source map scale - 1:2,500

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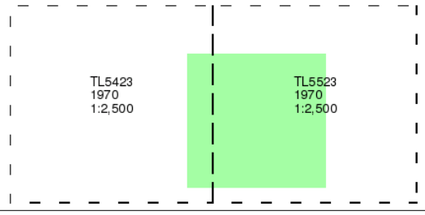
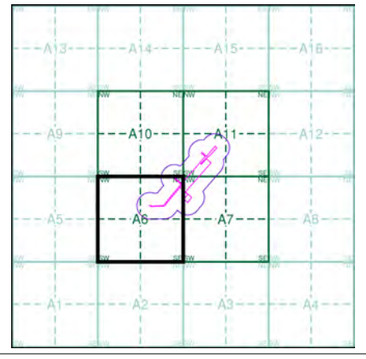


Historical Map - Segment A6



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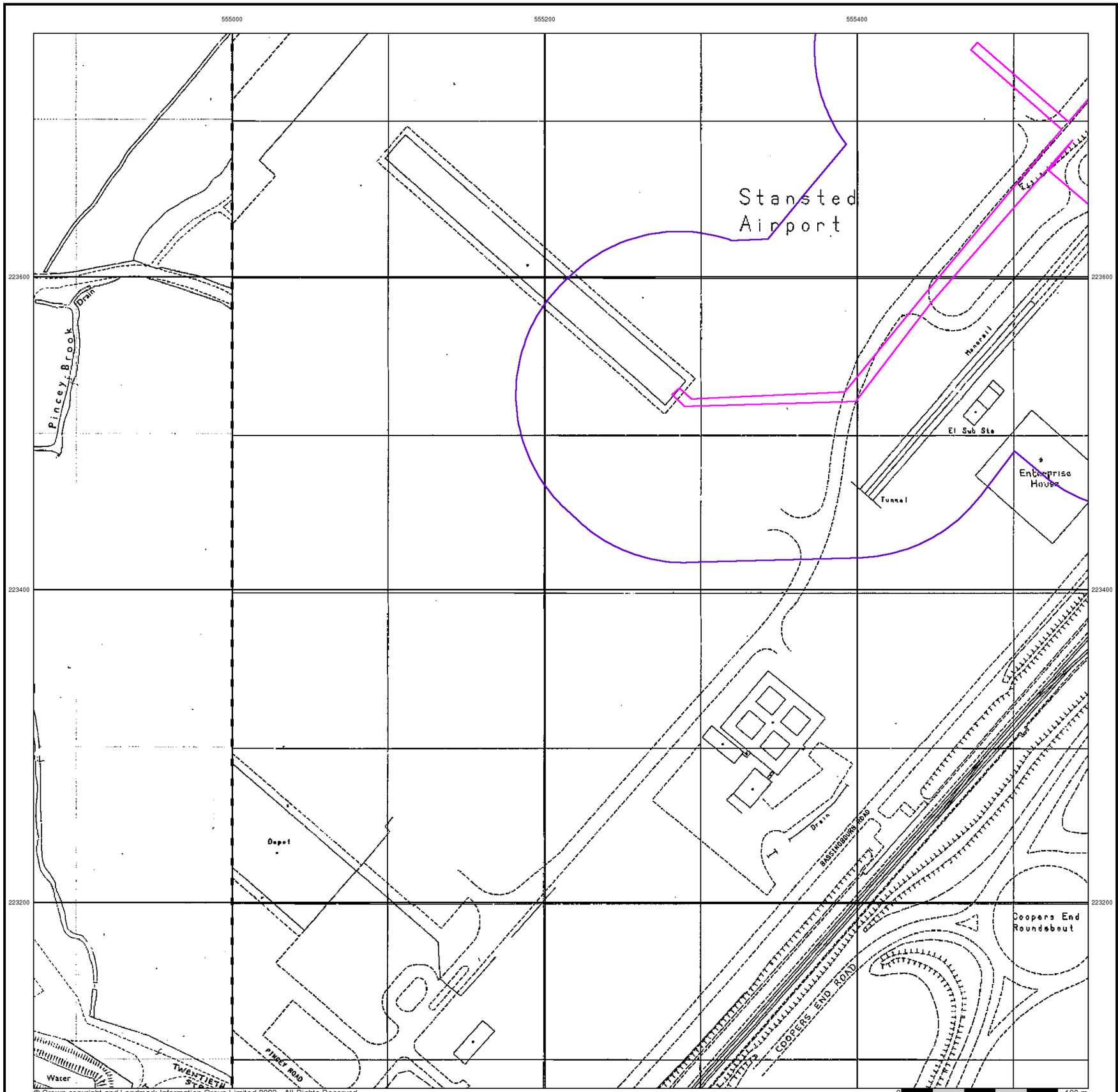


MOTT MACDONALD

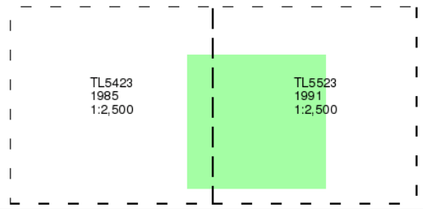
Additional SIMs

Published 1985 - 1991

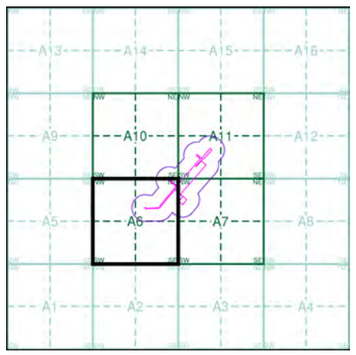
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A6



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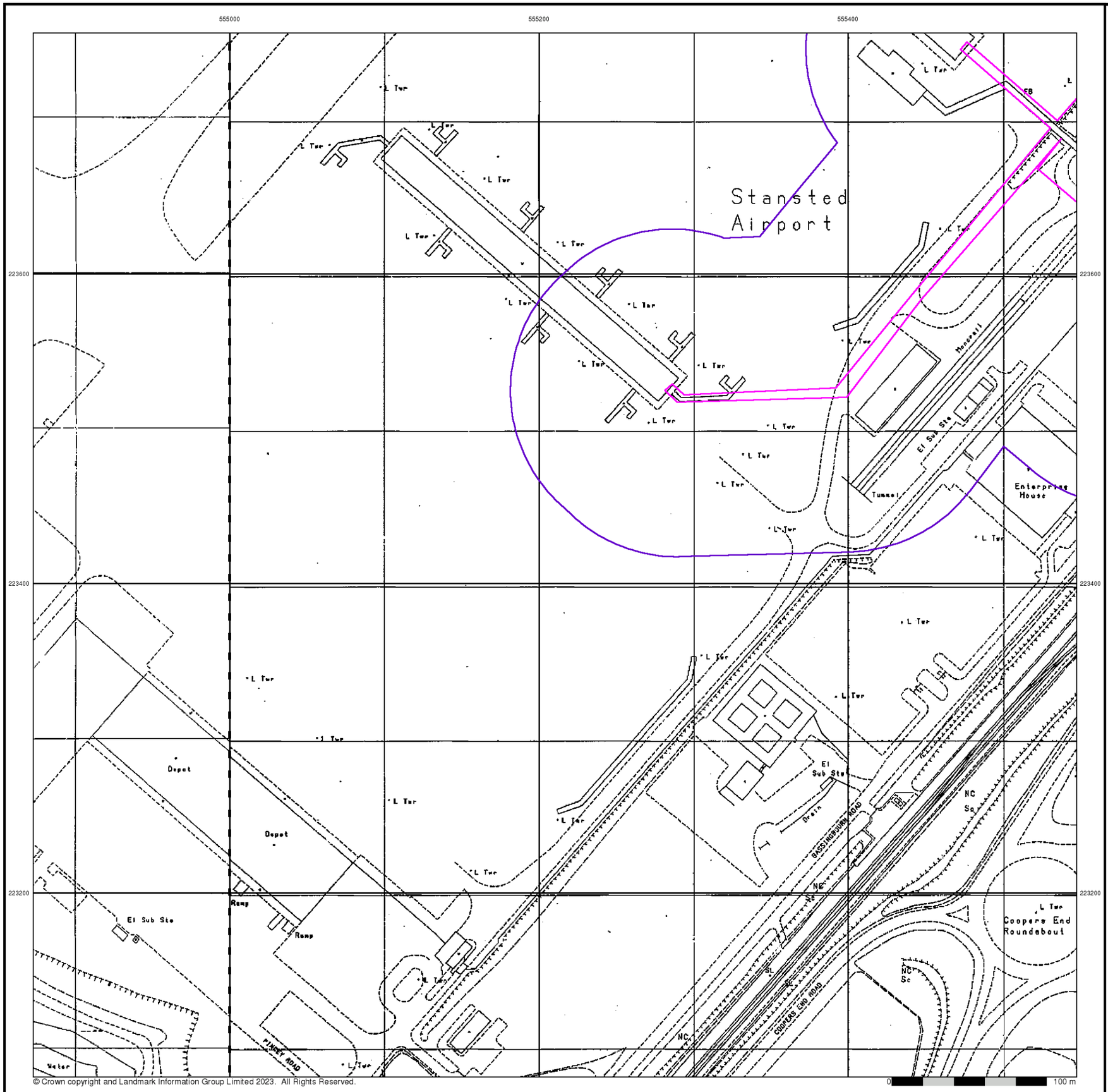

MOTT MACDONALD

Additional SIMs

Published 1990 - 1992

Source map scale - 1:2,500

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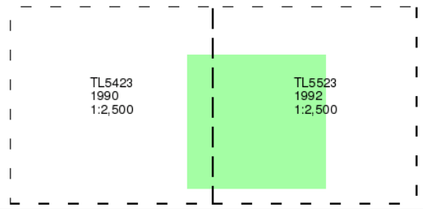
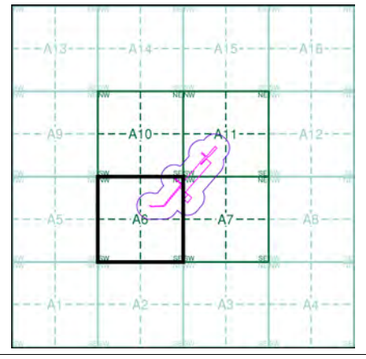


Historical Map - Segment A6



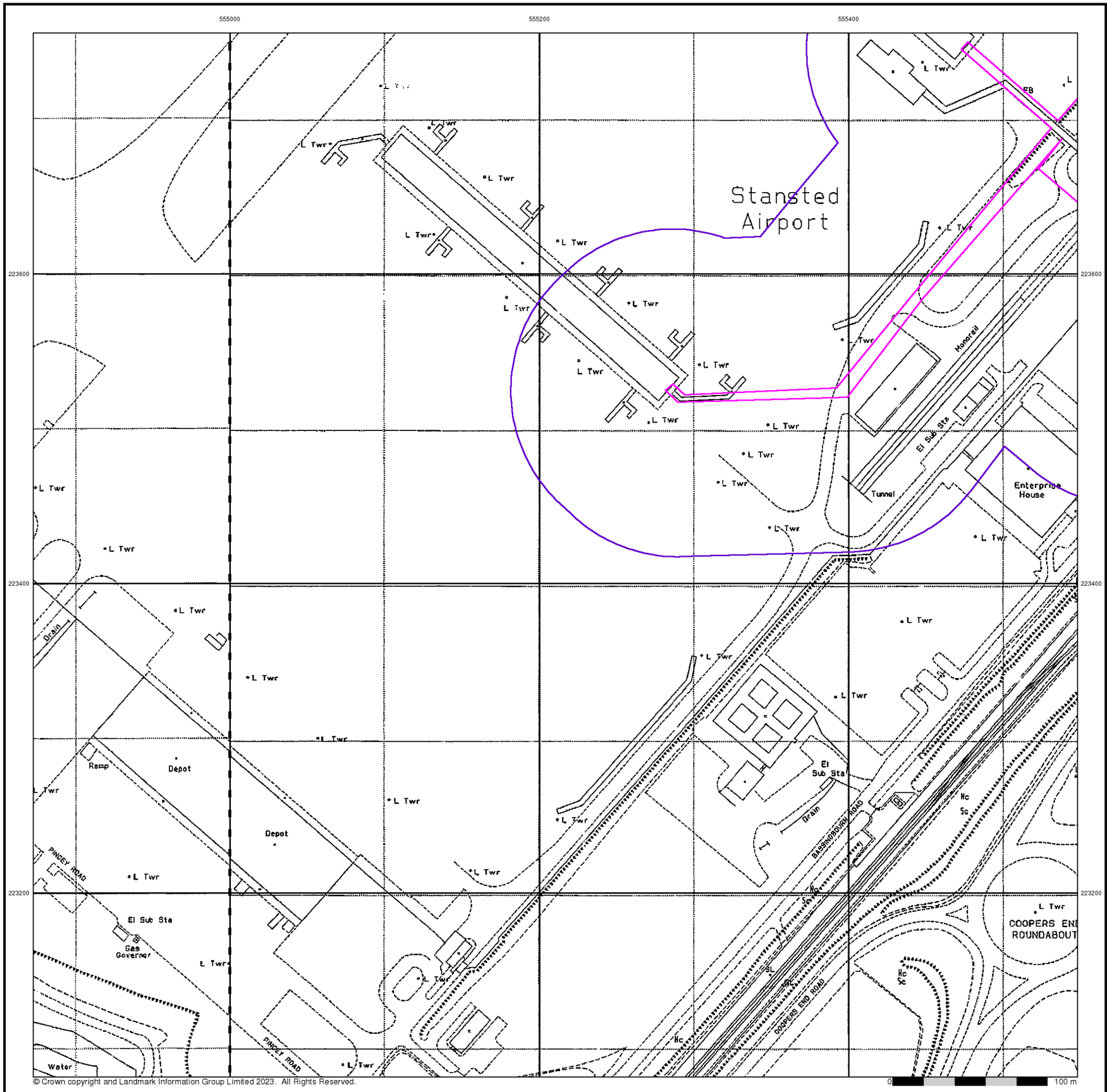
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

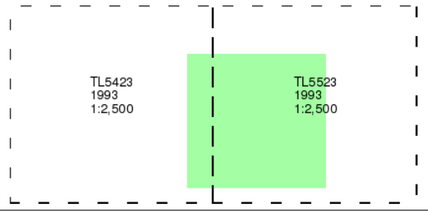
Large-Scale National Grid Data

Published 1993

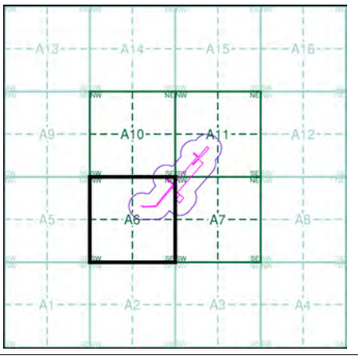
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A6



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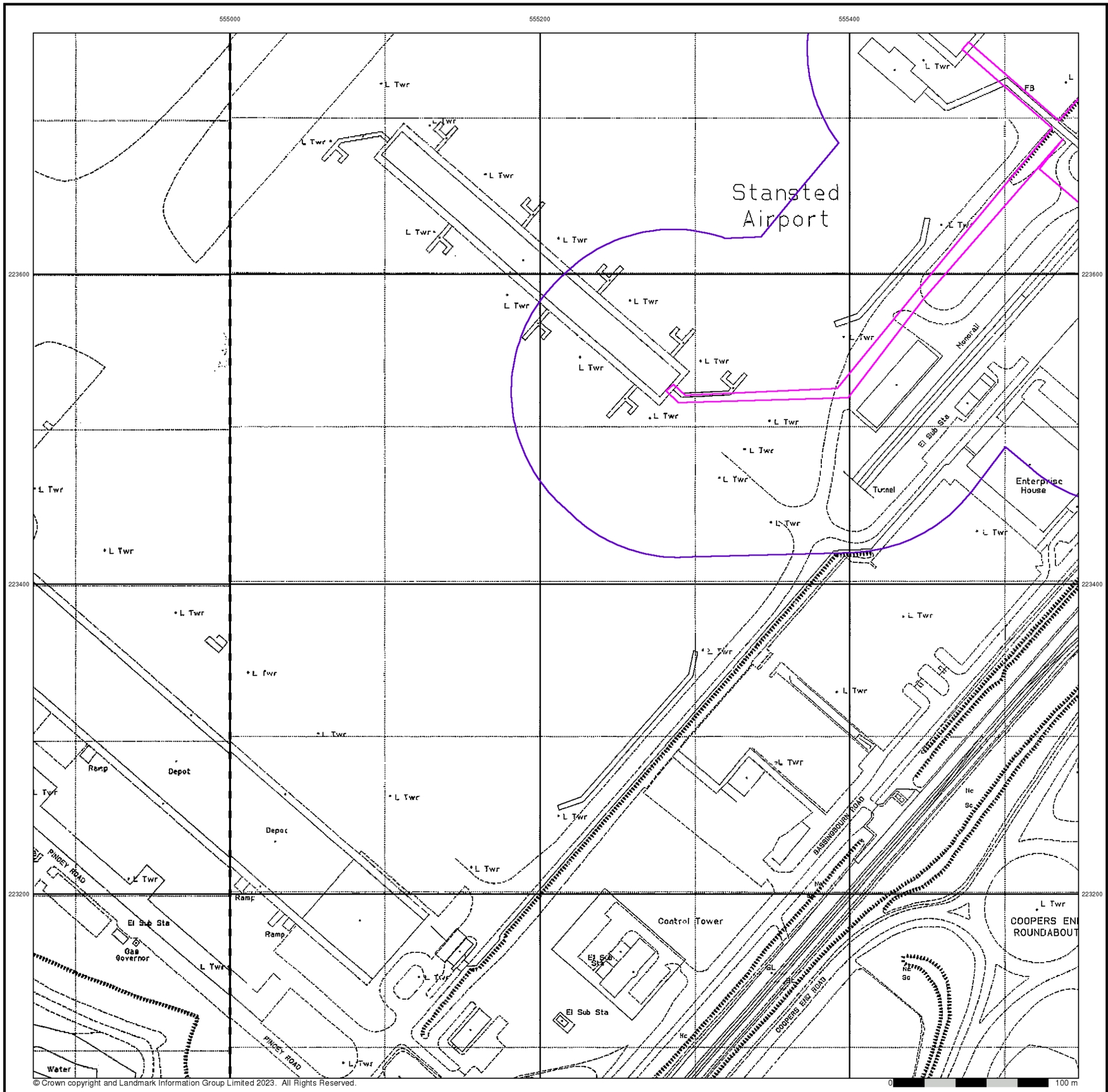

MOTT MACDONALD

Large-Scale National Grid Data

Published 1996

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

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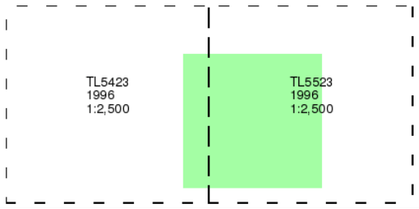
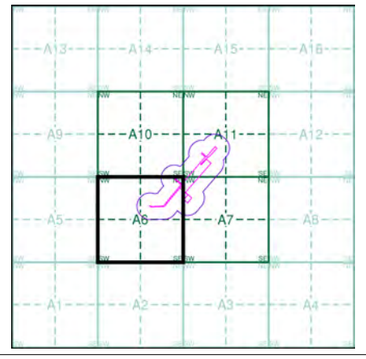


Historical Map - Segment A6



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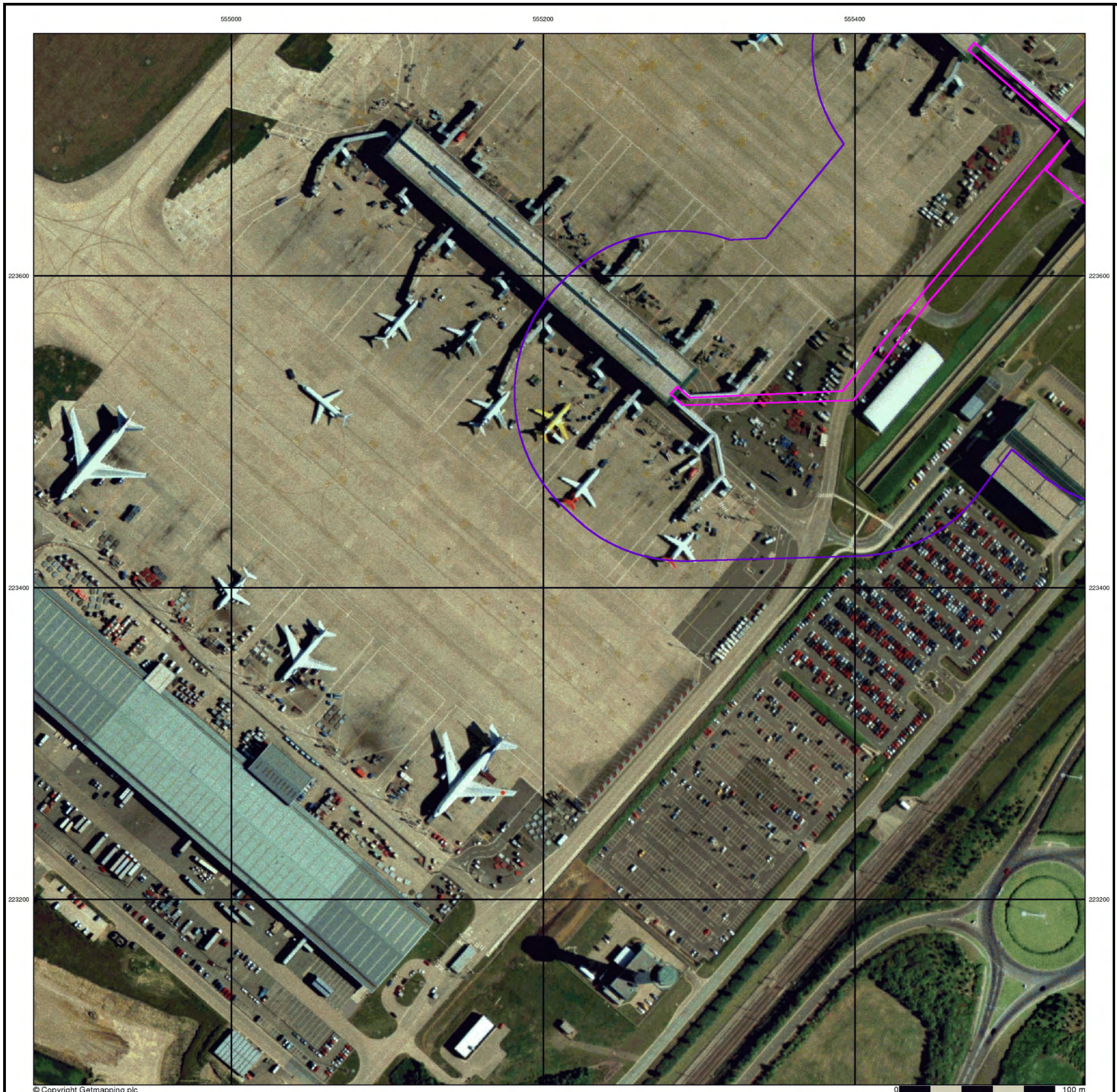


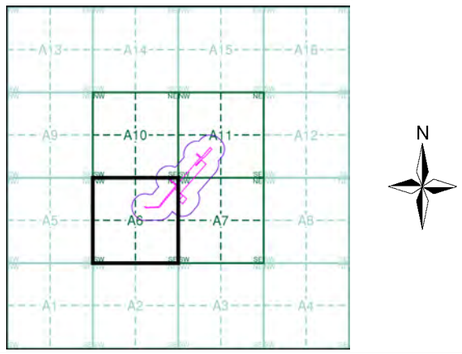
MOTT MACDONALD

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A6



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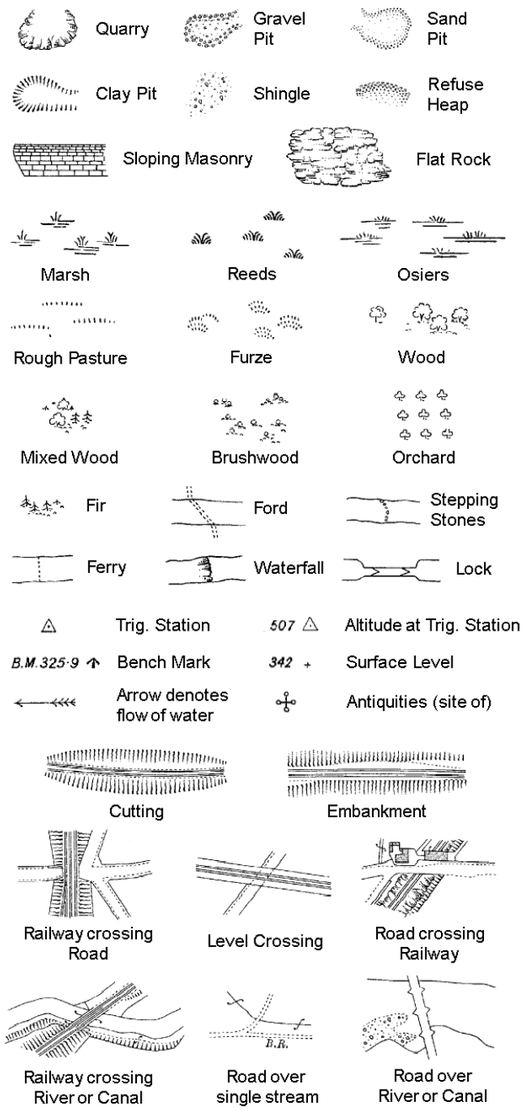
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

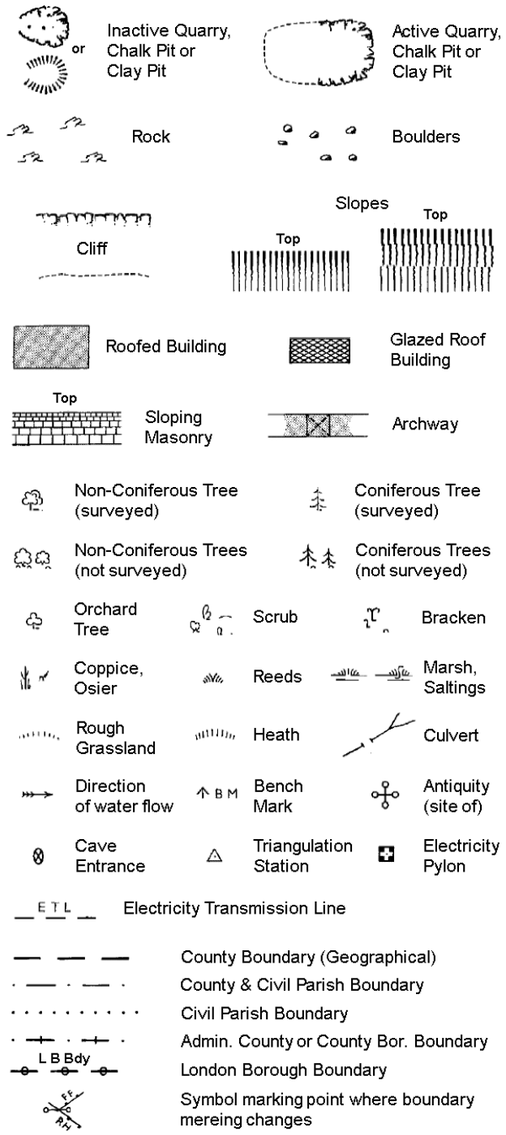
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

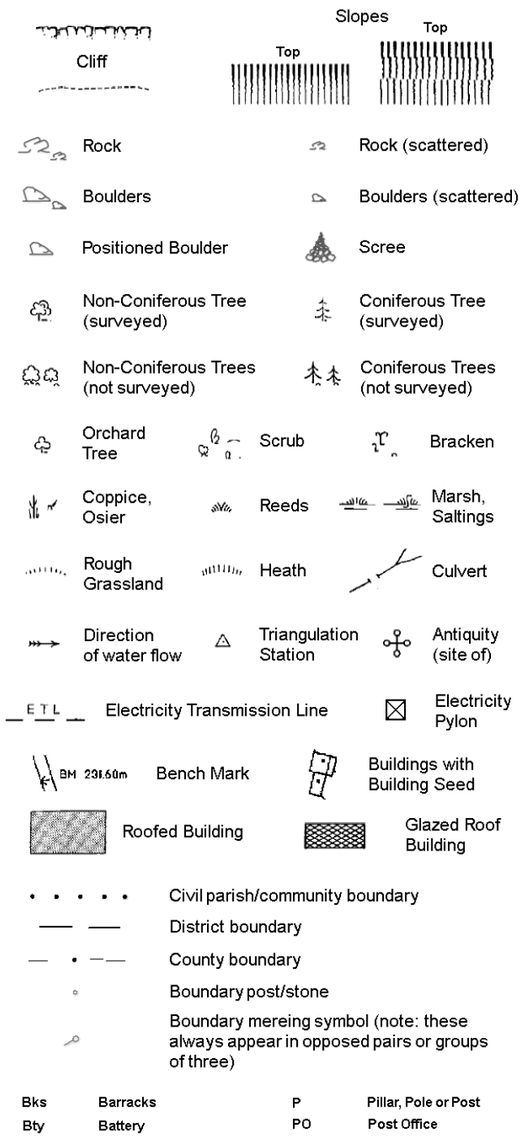
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

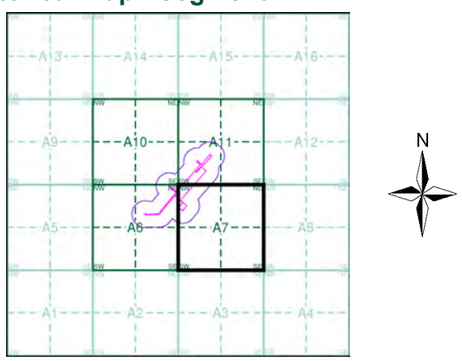
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

MOTT MACDONALD

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1876	2
Essex	1:2,500	1897	3
Essex	1:2,500	1920 - 1921	4
Ordnance Survey Plan	1:2,500	1970	5
Additional SIMs	1:2,500	1991	6
Additional SIMs	1:2,500	1992	7
Large-Scale National Grid Data	1:2,500	1993	8
Large-Scale National Grid Data	1:2,500	1996	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A7



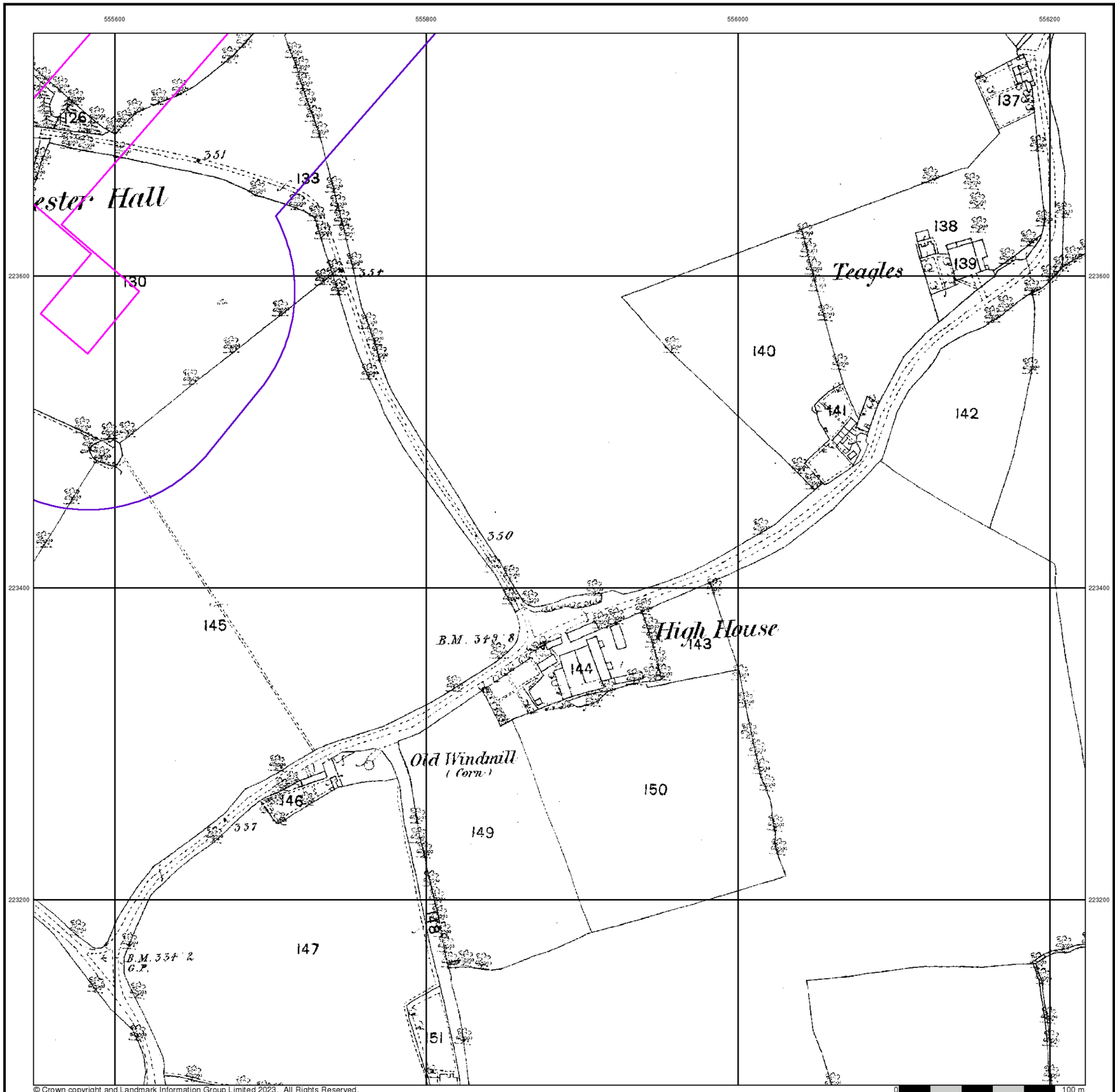
Order Details

Order Number: 314797450_1_1
Customer Ref: 100106627 MM STN_TP Geotech/Env
National Grid Reference: 555560, 223730
Slice: A
Site Area (Ha): 2.73
Search Buffer (m): 100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

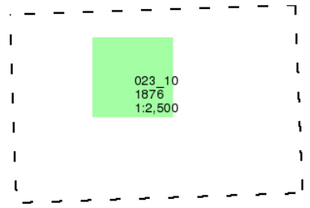
Essex

Published 1876

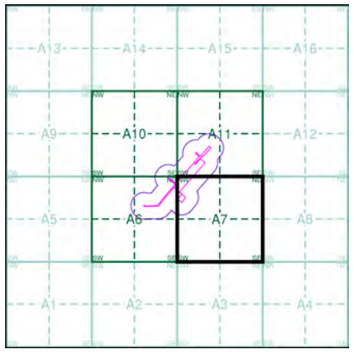
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



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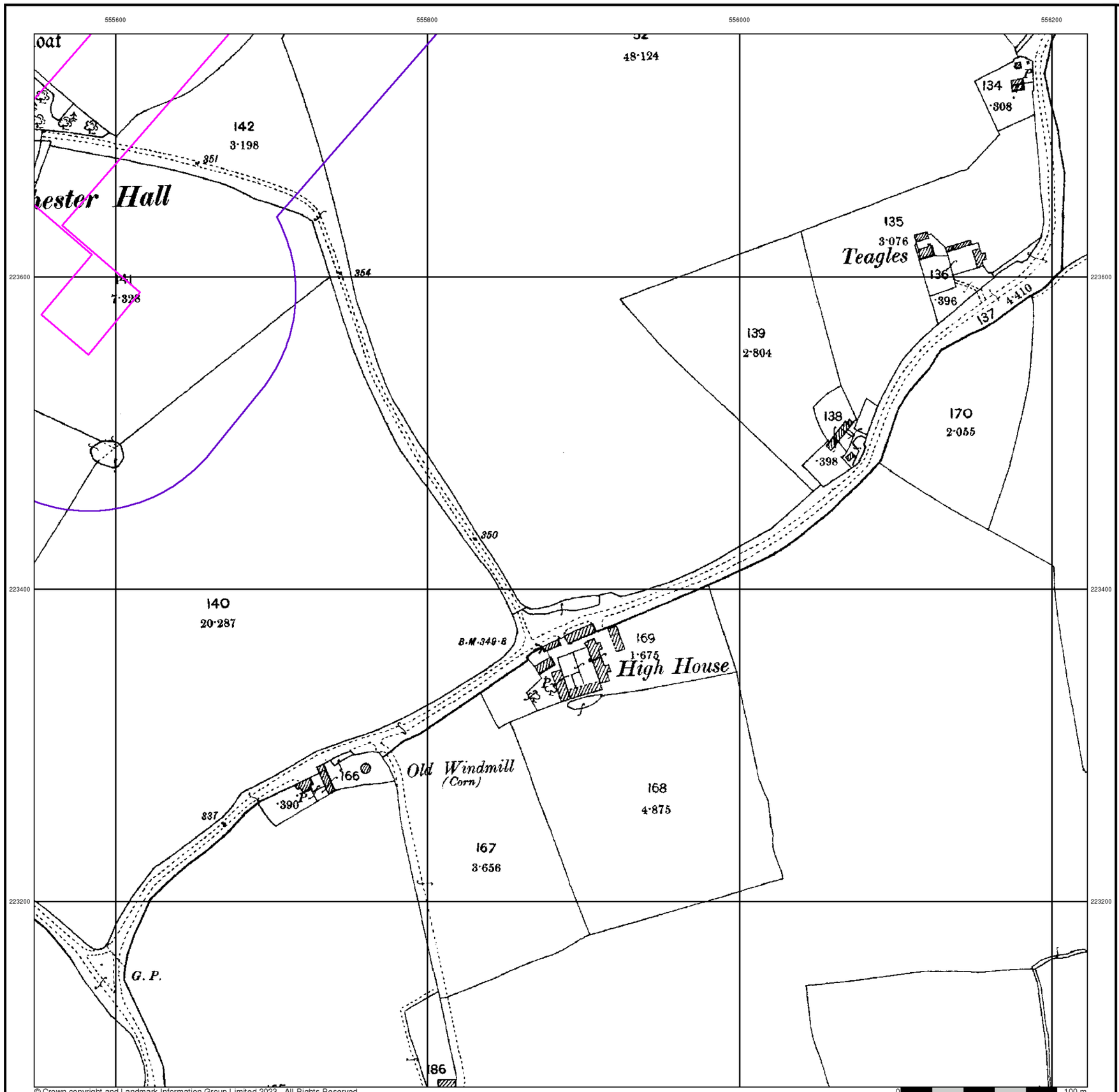

MOTT MACDONALD

Essex

Published 1897

Source map scale - 1:2,500

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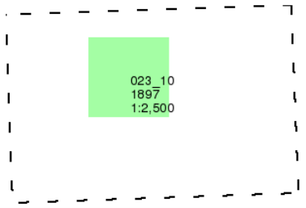
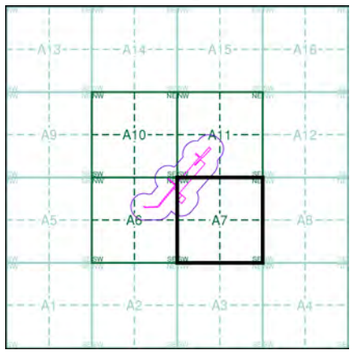


Historical Map - Segment A7



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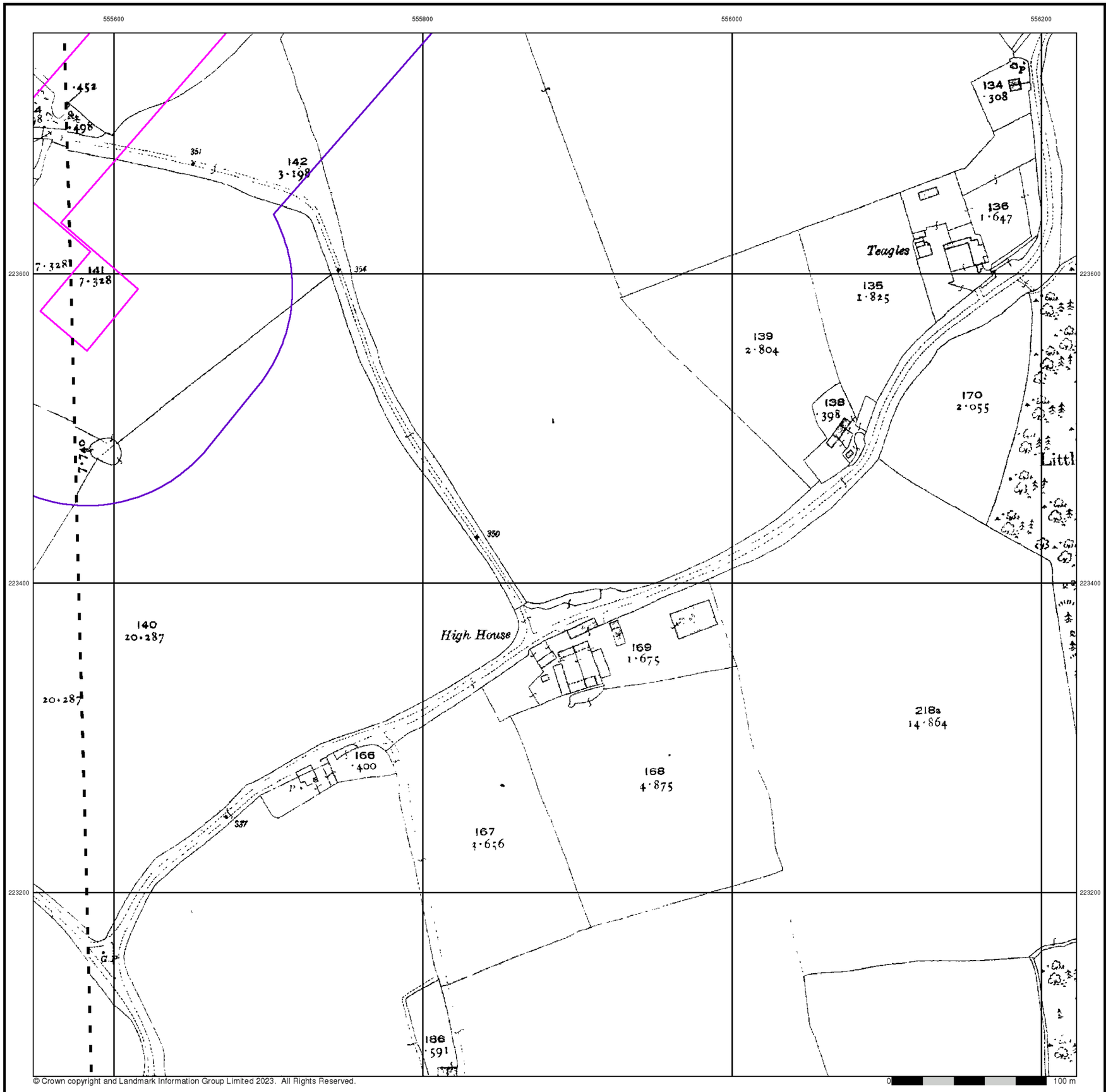

MOTT MACDONALD

Essex

Published 1920 - 1921

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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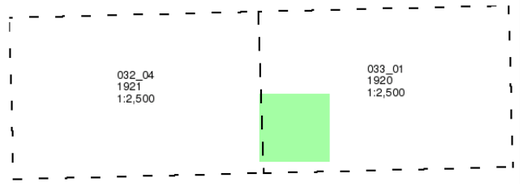
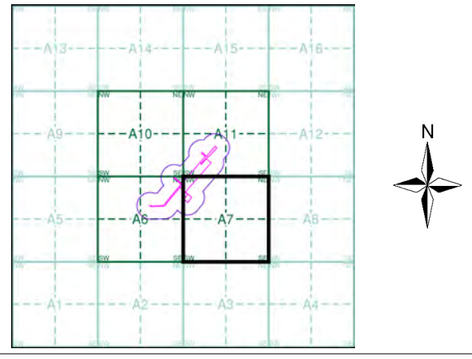


Historical Map - Segment A7



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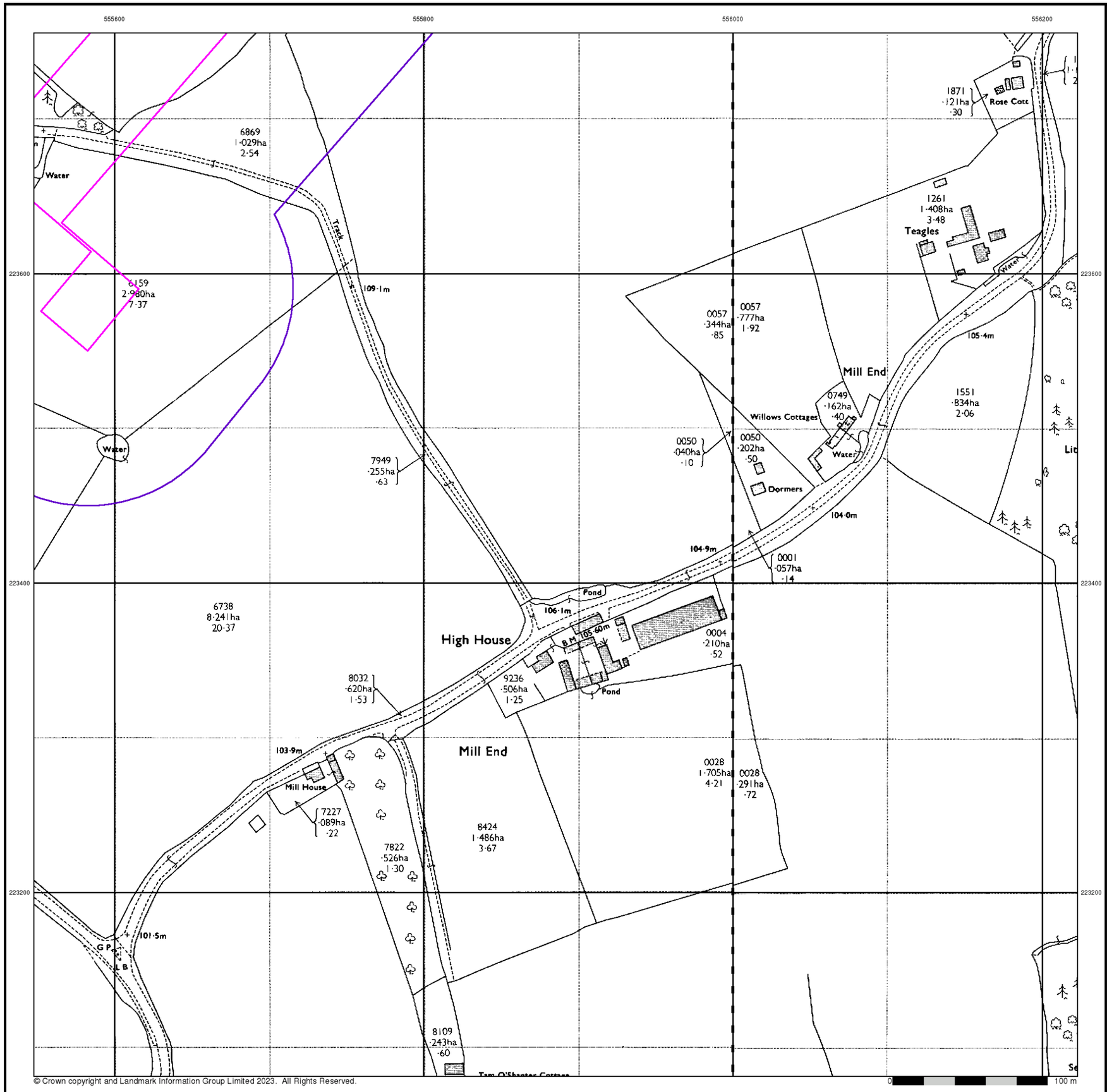

MOTT MACDONALD

Ordnance Survey Plan

Published 1970

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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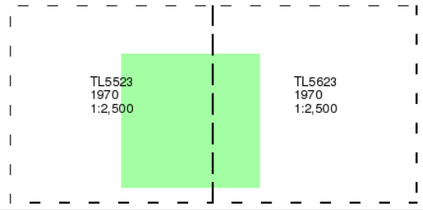
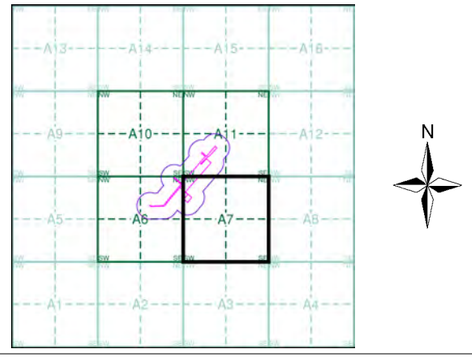


Historical Map - Segment A7



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MOTT MACDONALD

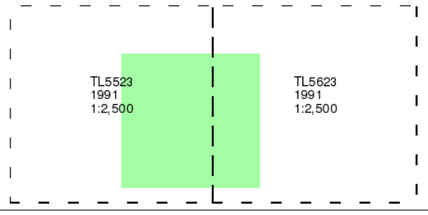
Additional SIMs

Published 1991

Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



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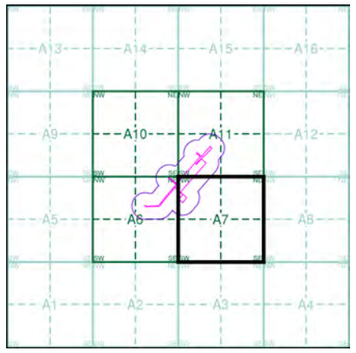

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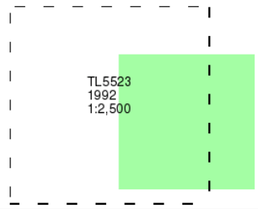
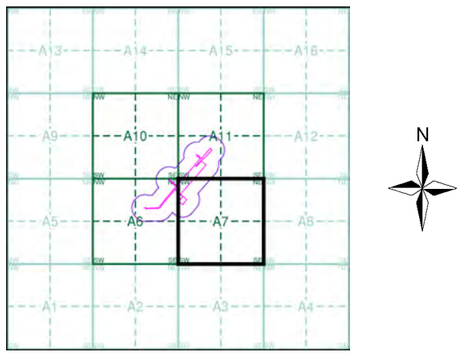


Historical Map - Segment A7



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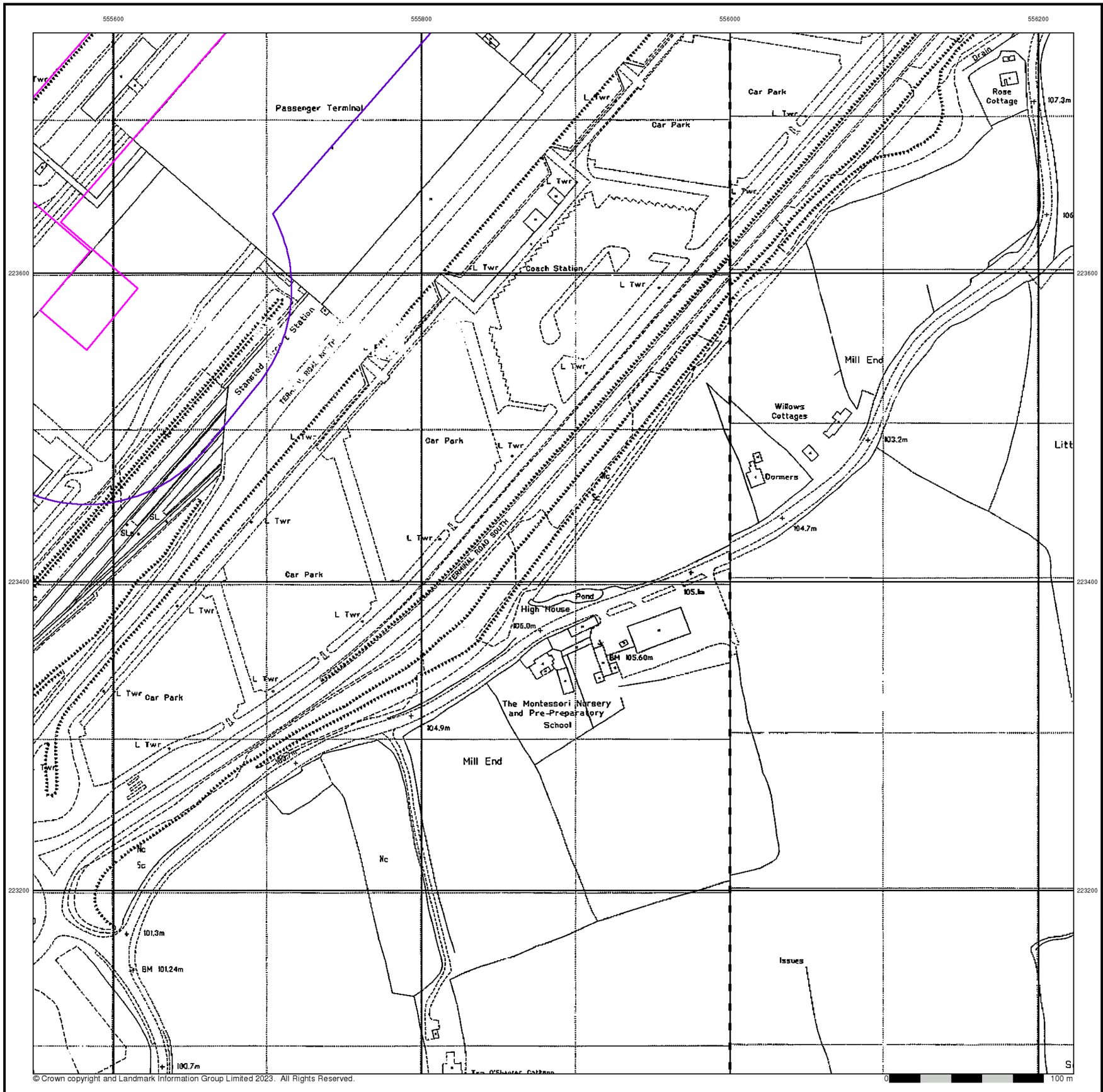

MOTT MACDONALD

Large-Scale National Grid Data

Published 1993

Source map scale - 1:2,500

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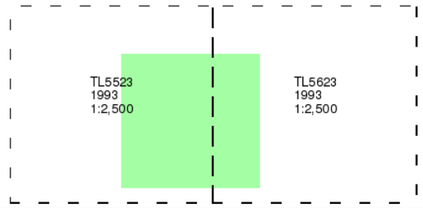
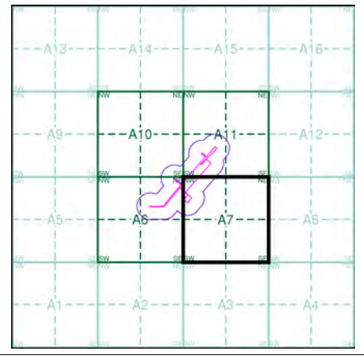


Historical Map - Segment A7



Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]

555600 555800 556000 556200

223600 223400 223200

Passenger Terminal
Car Park
Coach Station
Stansted Airport Station
TERMINAL ROAD NORTH
TERMINAL ROAD SOUTH
Car Park
Car Park
Car Park
Pond
High House
105.9m
106.0m
BM 105.60m
The Montessori Nursery and Pre-Preparatory School
104.9m
Mast
Mill End
101.9m
BM 101.24m
100.5m
Tam O'Shanter Cottage
L Twr
Sc
Nc

0 100 m

MOTT MACDONALD

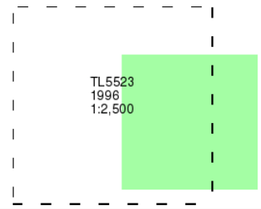
Large-Scale National Grid Data

Published 1996

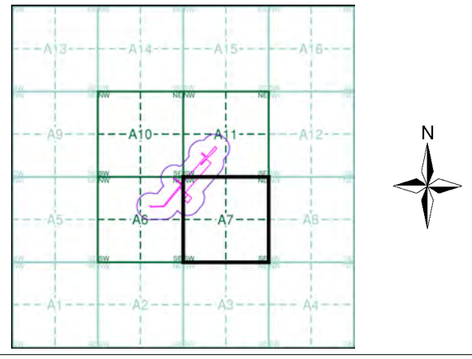
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A7



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Web: [redacted]

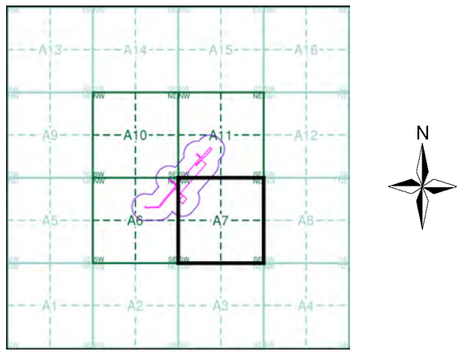
MOTT MACDONALD

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A7



Order Details

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National Grid Reference:	555560, 223730
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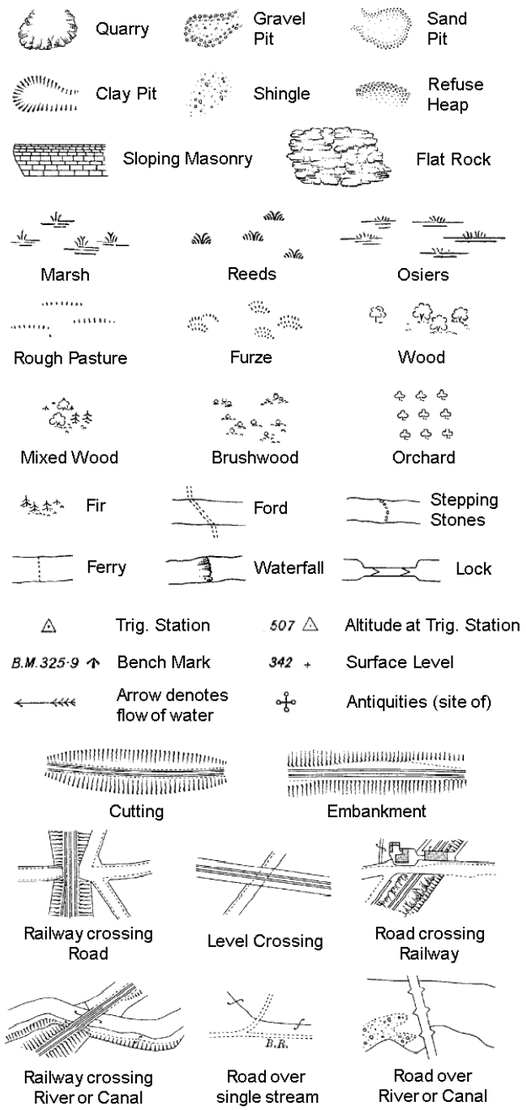
Web: [redacted]

Historical Mapping Legends

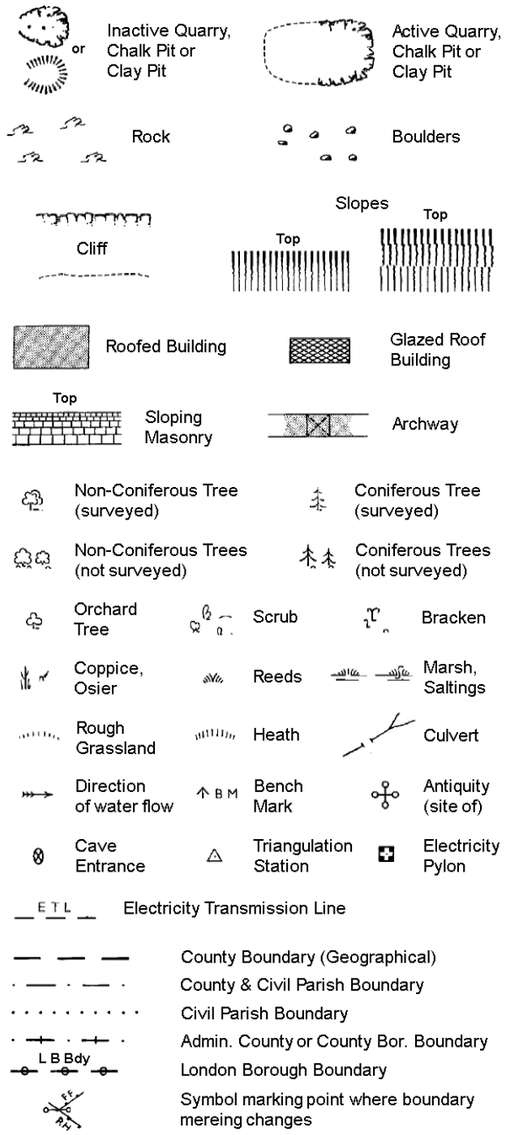
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

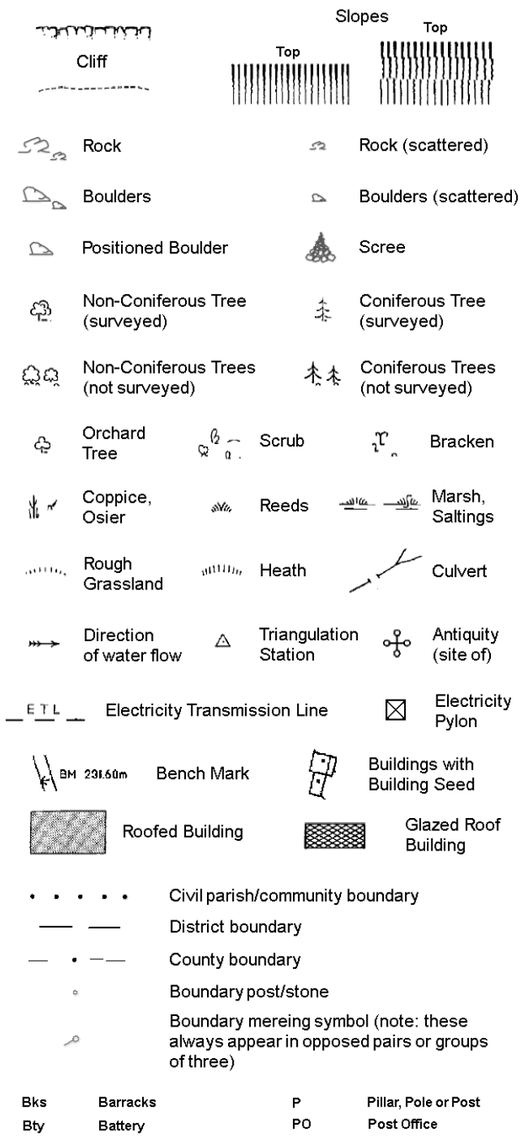
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

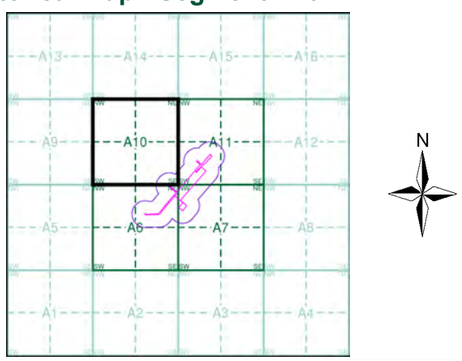
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

MOTT MACDONALD

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1876	2
Essex	1:2,500	1897	3
Essex	1:2,500	1921	4
Ordnance Survey Plan	1:2,500	1970	5
Additional SIMs	1:2,500	1985 - 1991	6
Additional SIMs	1:2,500	1990 - 1992	7
Large-Scale National Grid Data	1:2,500	1993	8
Large-Scale National Grid Data	1:2,500	1996	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A10

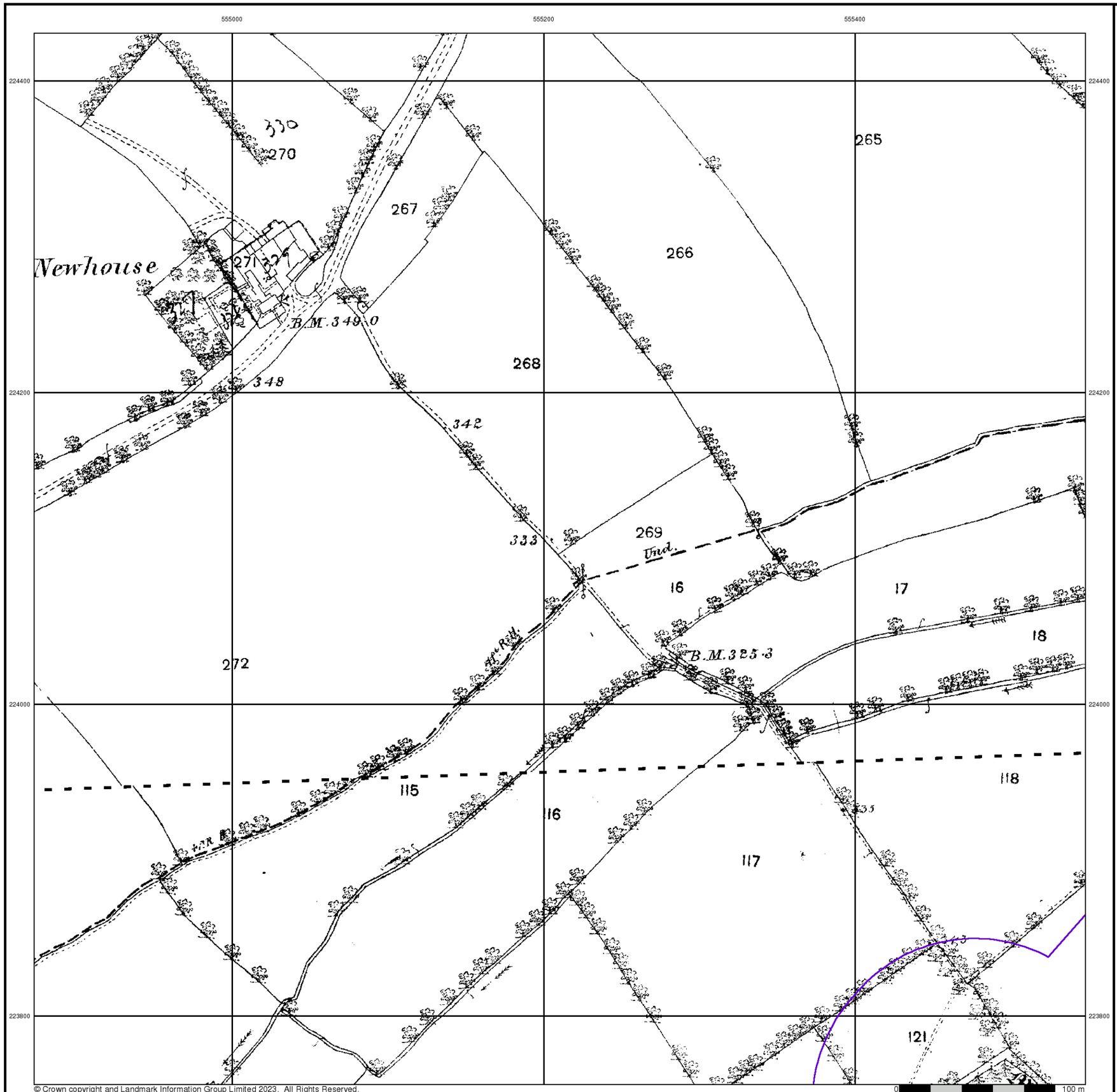


Order Details

Order Number: 314797450_1_1
Customer Ref: 100106627 MM STN_TP Geotech/Env
National Grid Reference: 555560, 223730
Slice: A
Site Area (Ha): 2.73
Search Buffer (m): 100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG



MOTT MACDONALD

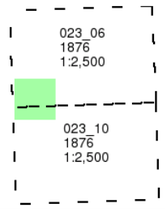
Essex

Published 1876

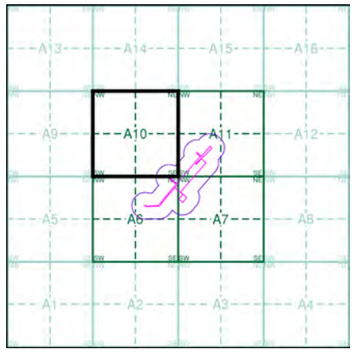
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



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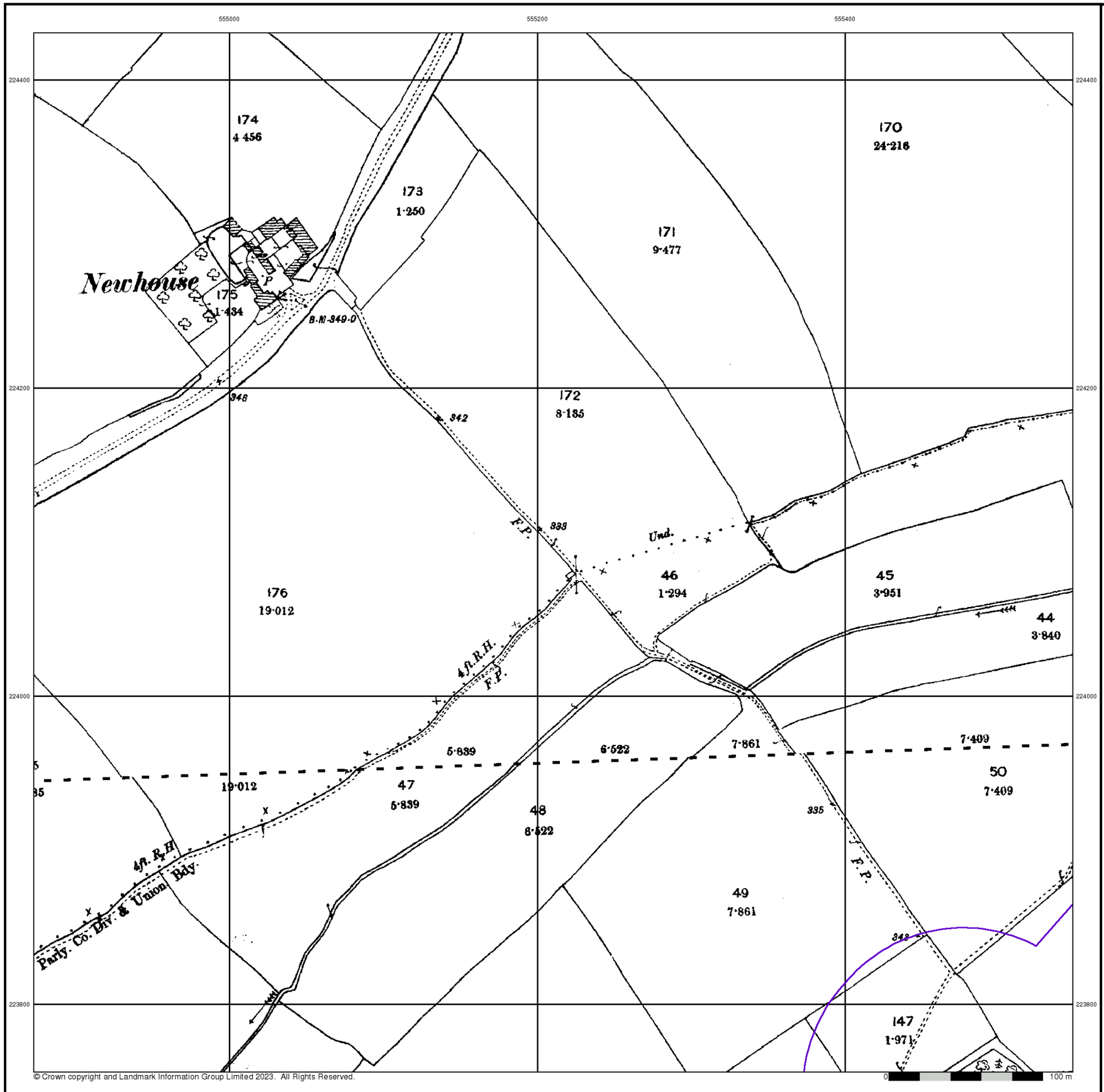
Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

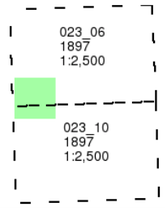
Essex

Published 1897

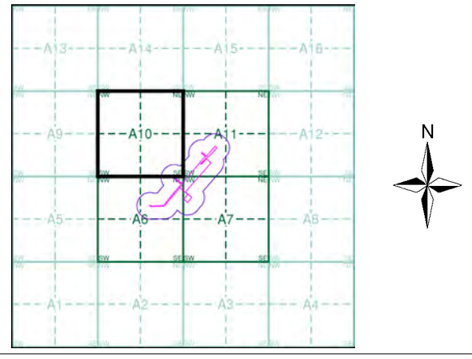
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
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Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

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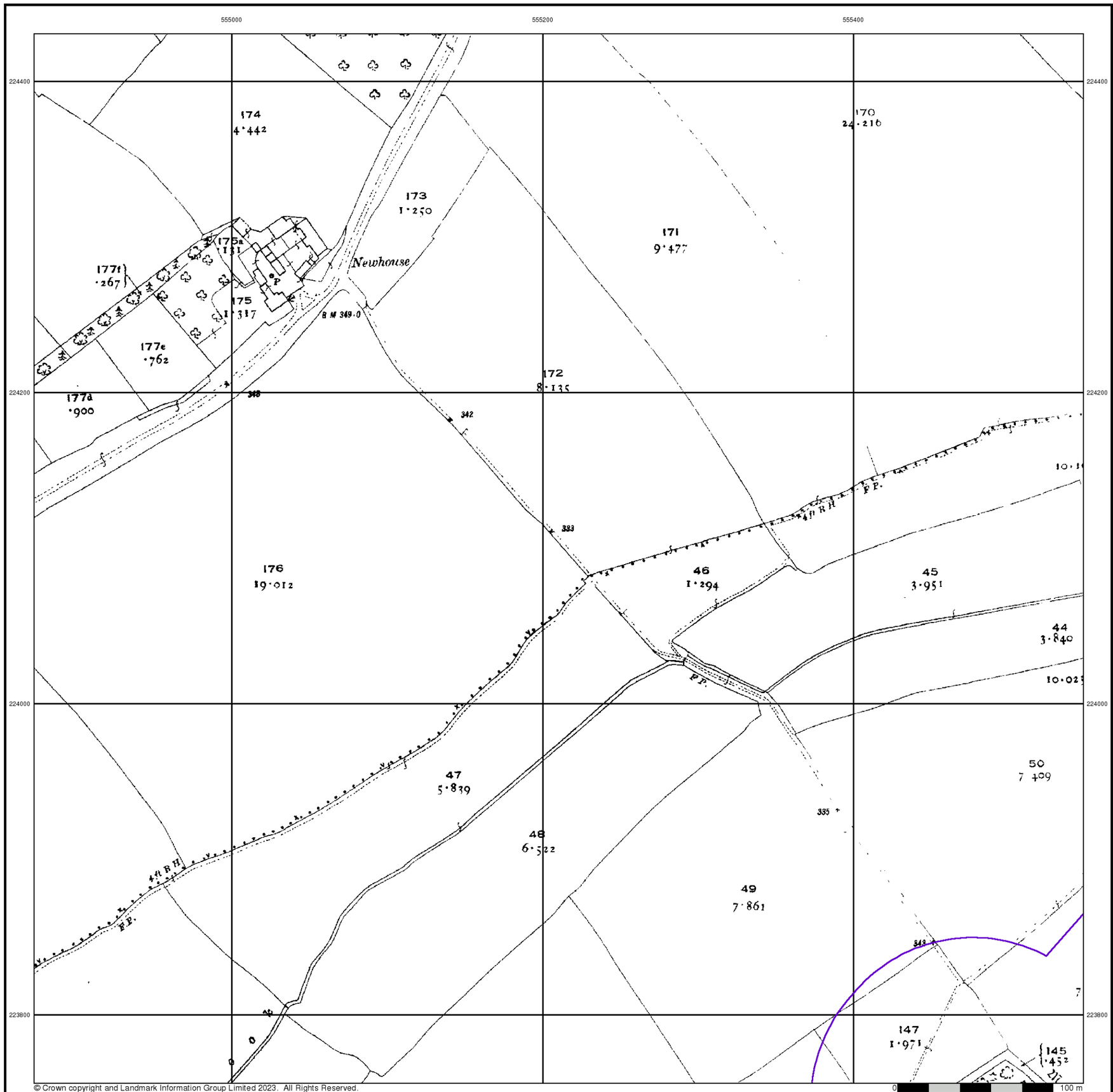
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



0 100 m

MOTT MACDONALD

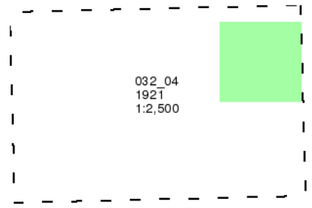
Essex

Published 1921

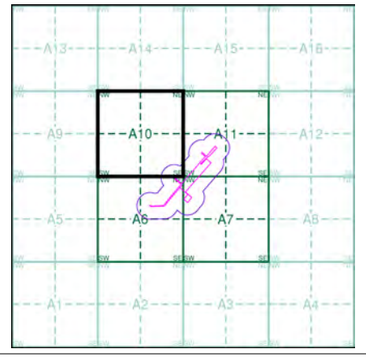
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
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Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
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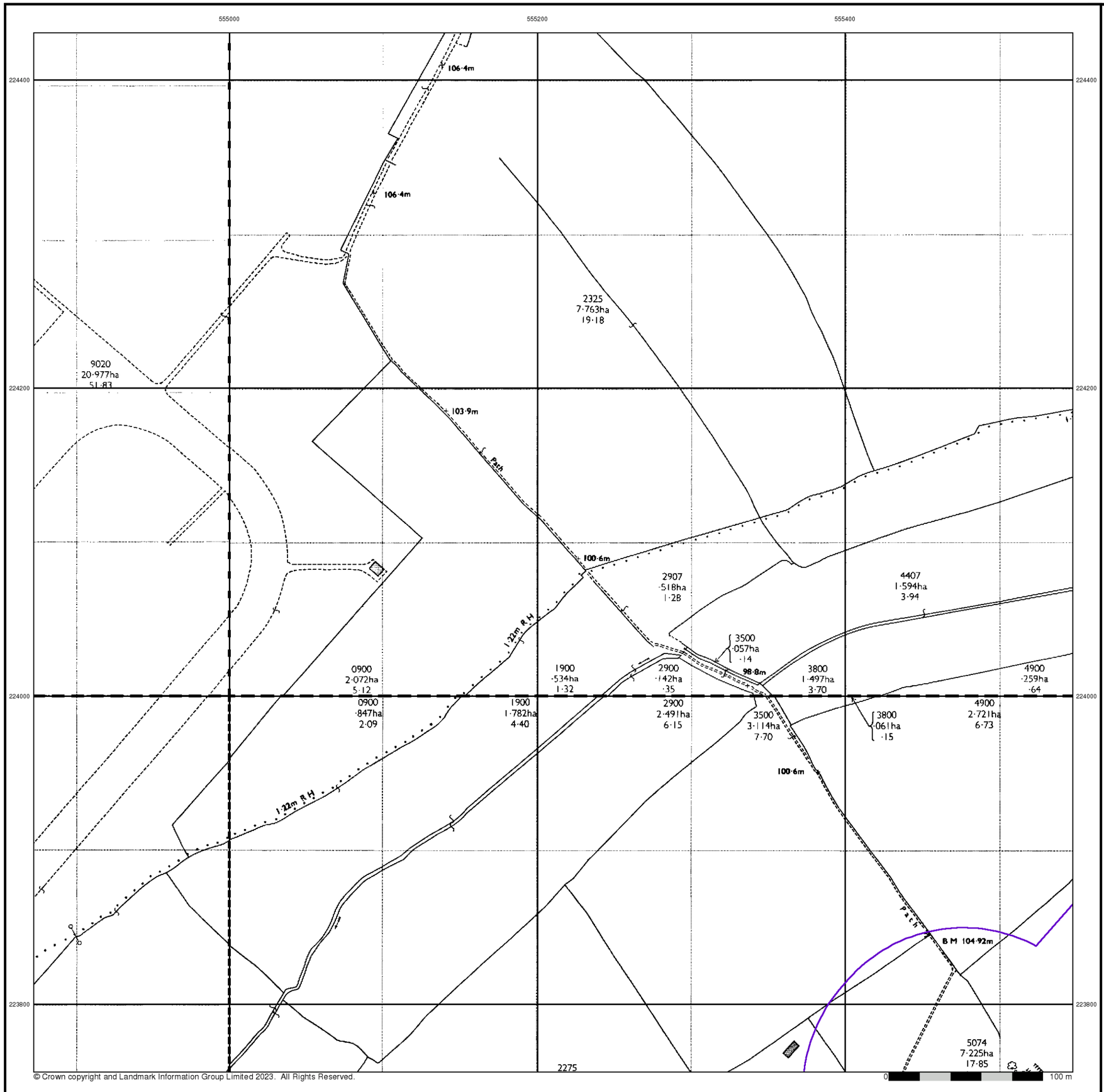


MOTT MACDONALD

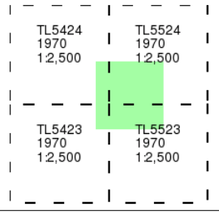
Ordnance Survey Plan

Published 1970

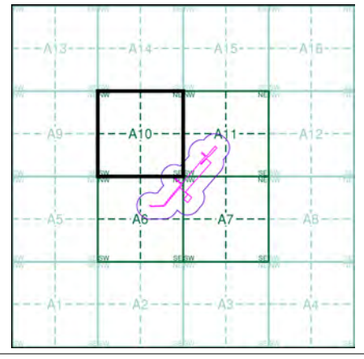
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



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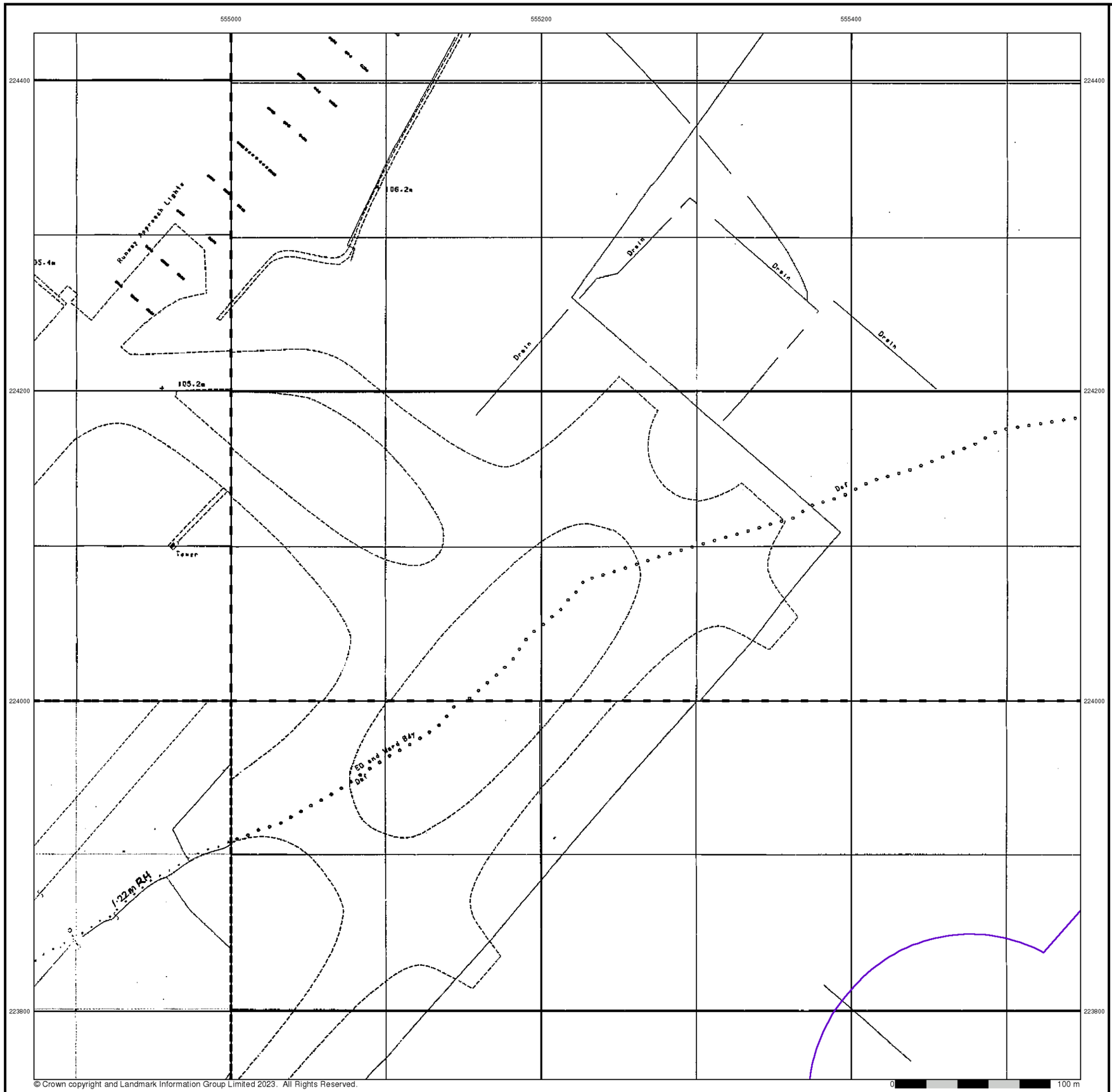


MOTT MACDONALD

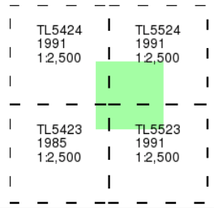
Additional SIMs

Published 1985 - 1991

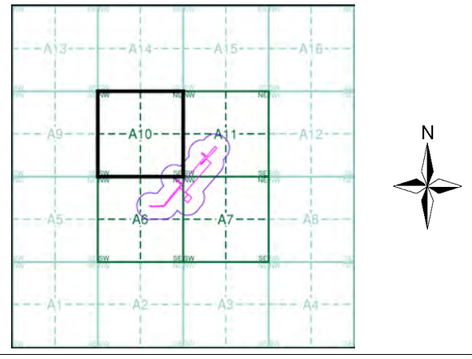
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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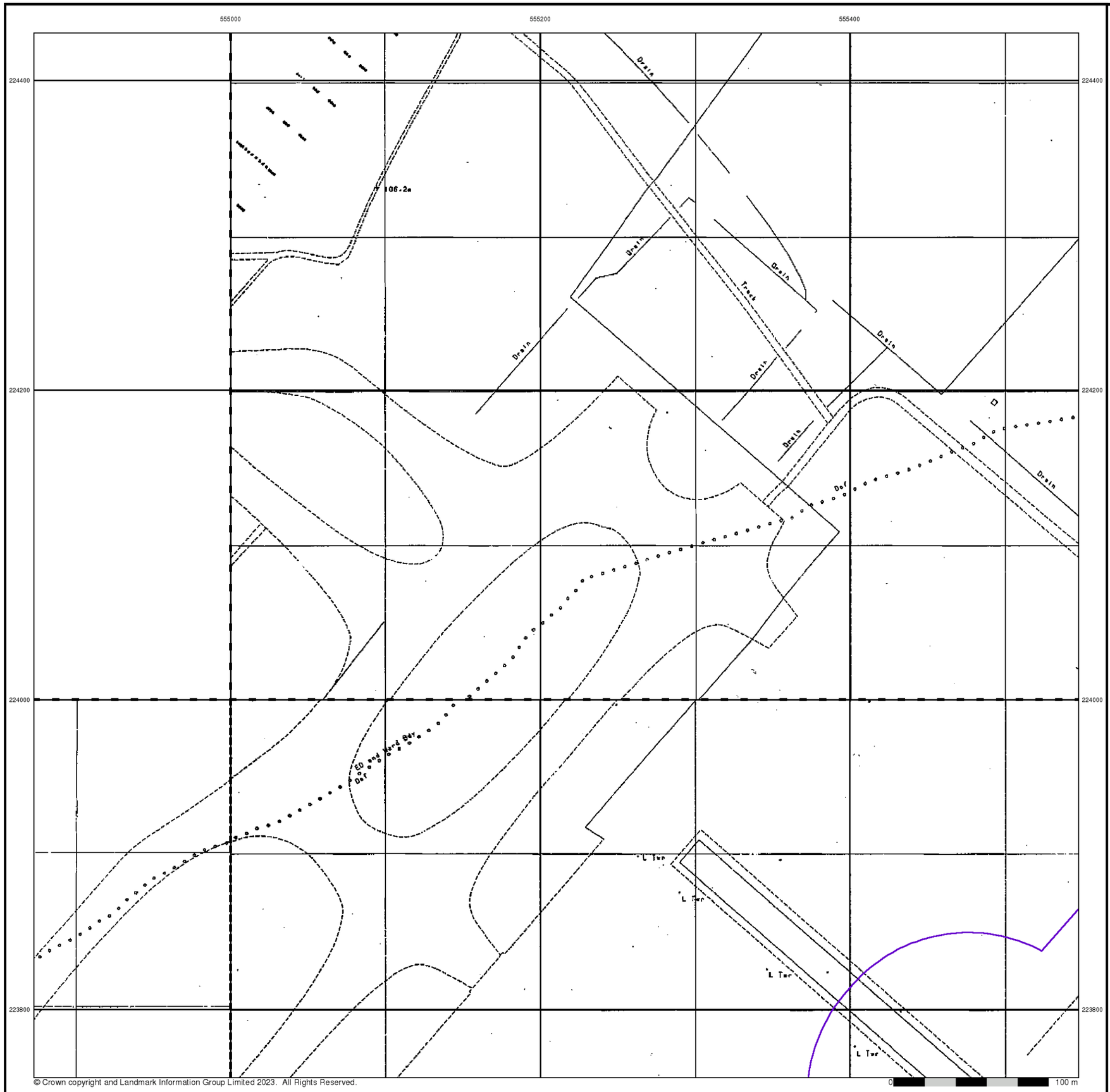
Web: [redacted]



MOTT MACDONALD

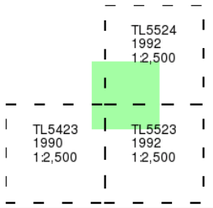
Additional SIMs

Published 1990 - 1992

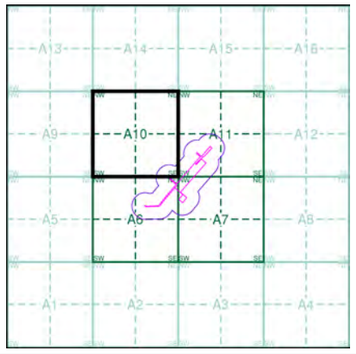
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



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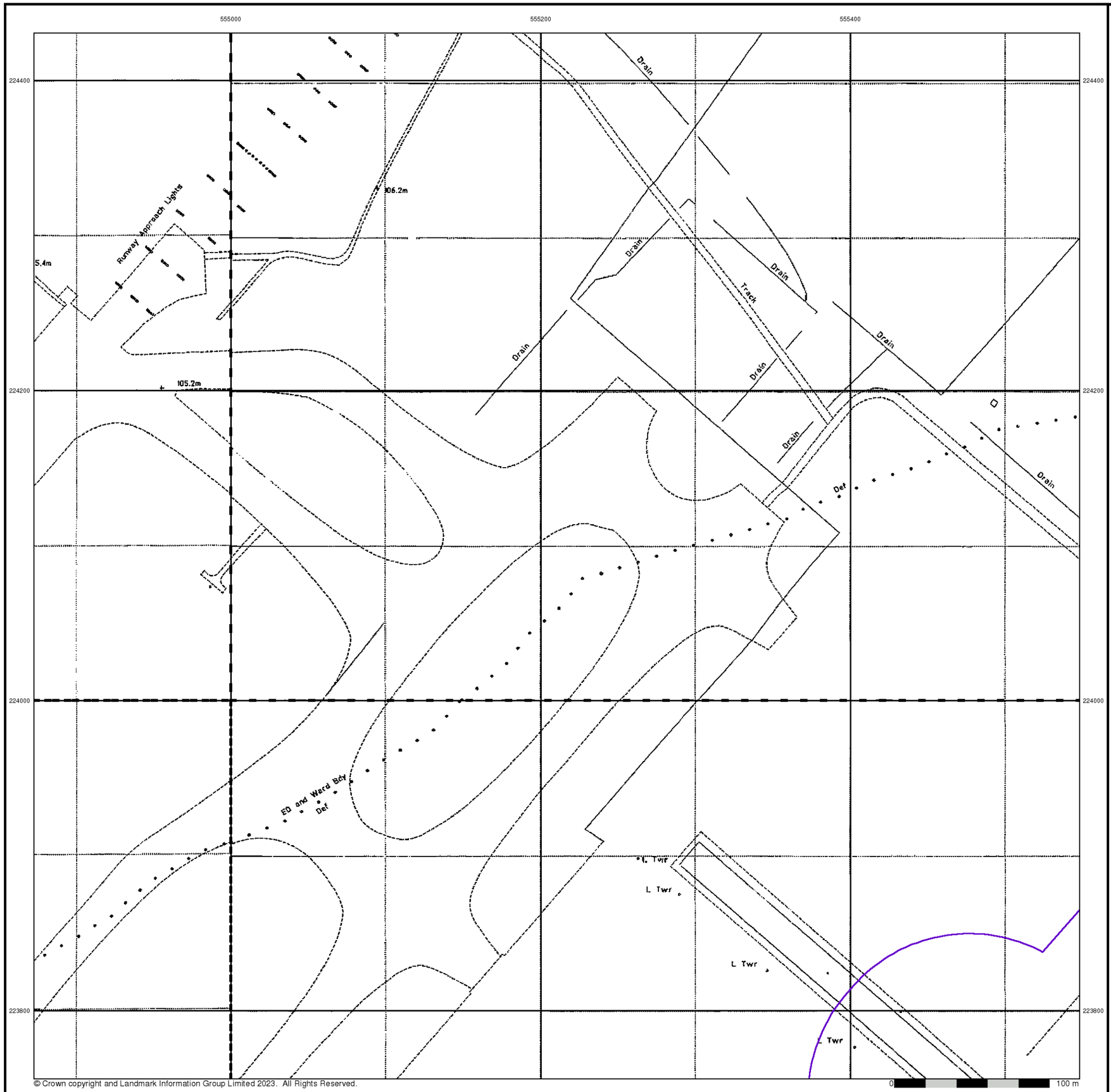


0 100 m

MOTT MACDONALD

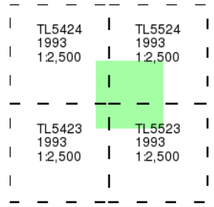
Large-Scale National Grid Data

Published 1993

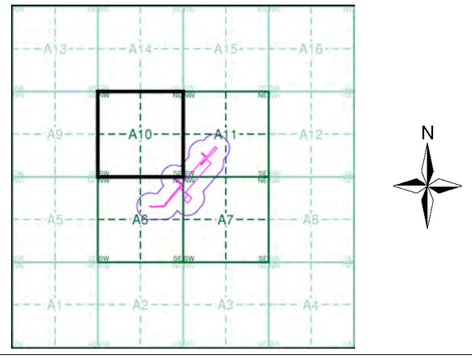
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

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Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]

555000 555200 555400

224400 224200 224000 223800

ED and Ward Bdy
Def

L Twr
L Twr
L Twr
L Twr

0 100 m

MOTT MACDONALD

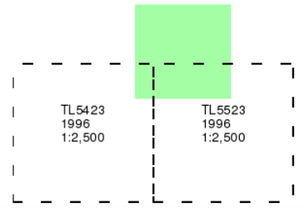
Large-Scale National Grid Data

Published 1996

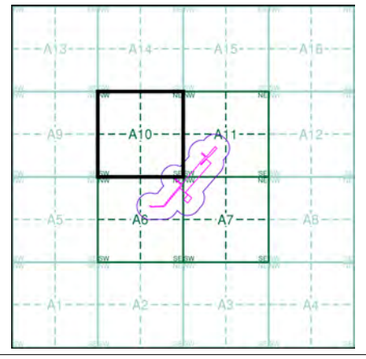
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



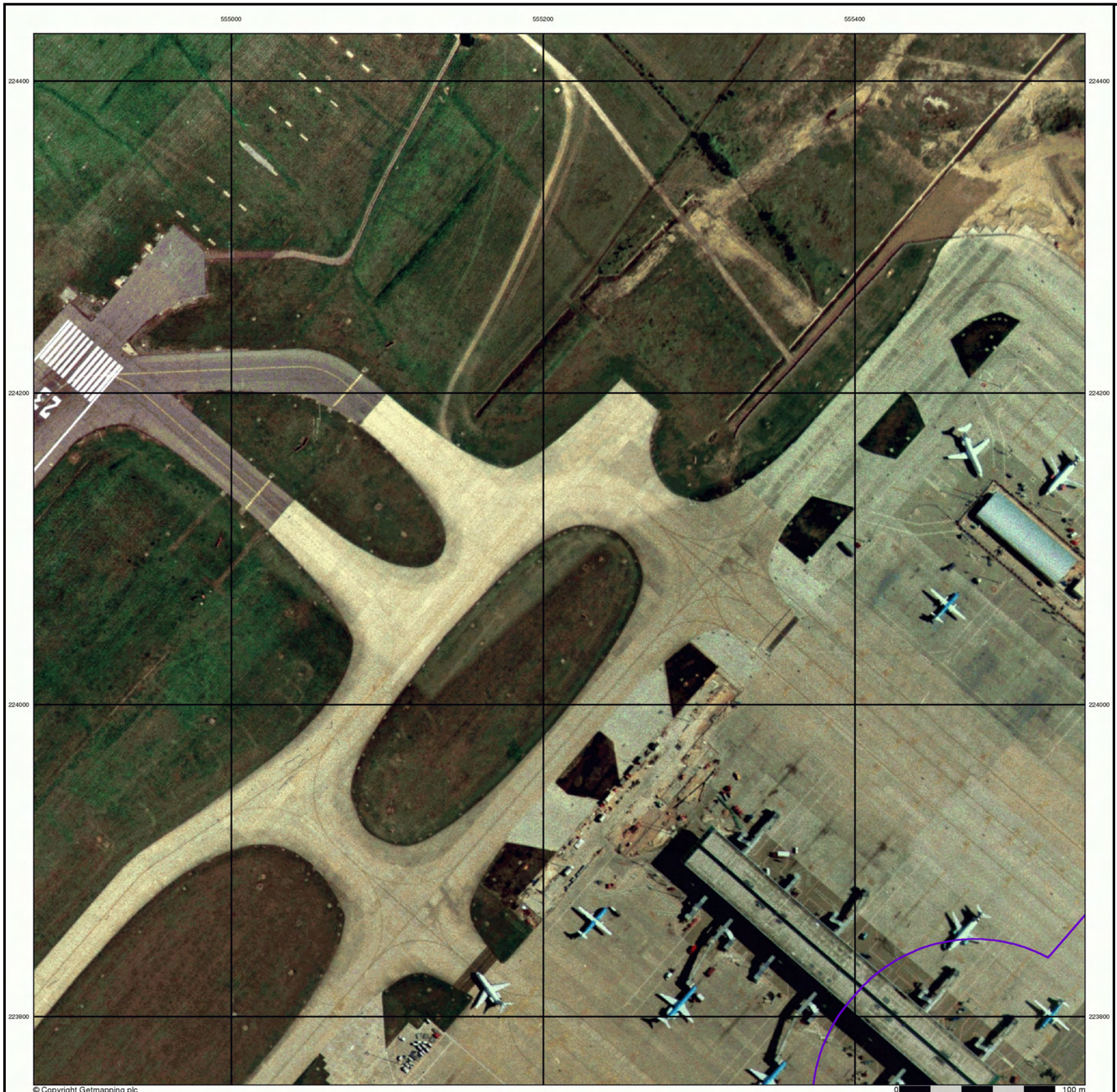
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



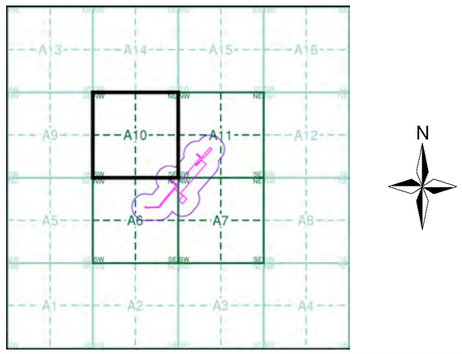
MOTT MACDONALD

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A10



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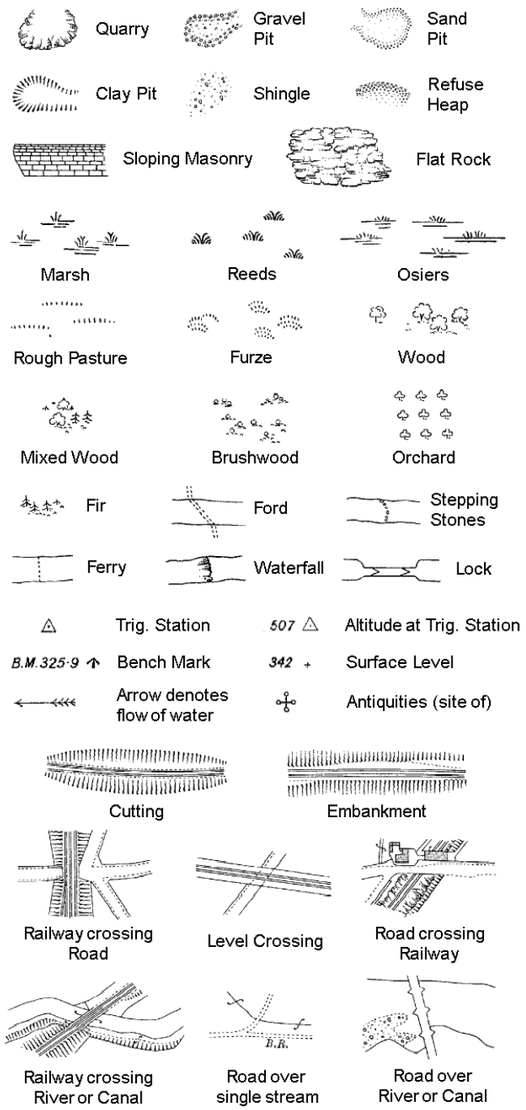
Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

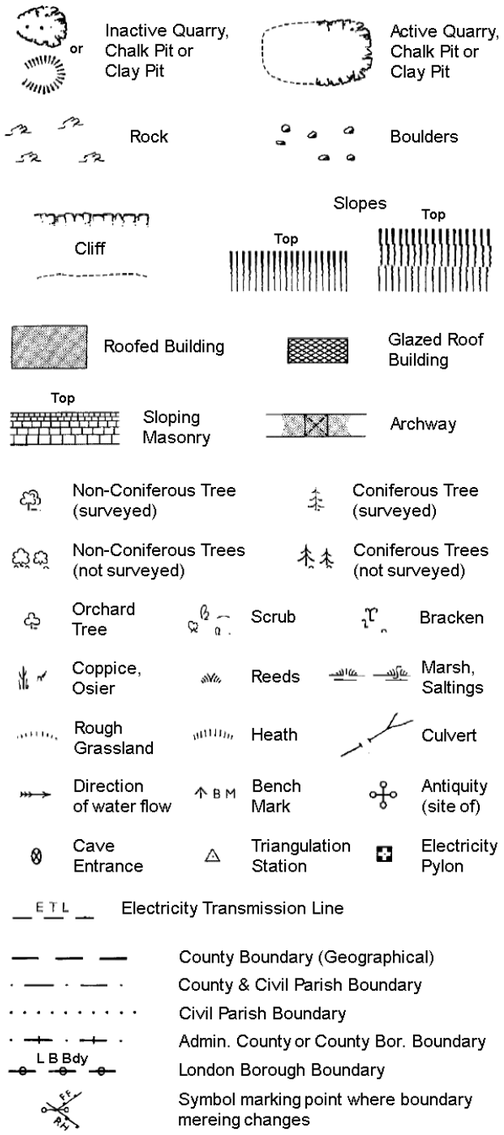
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	Sl.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

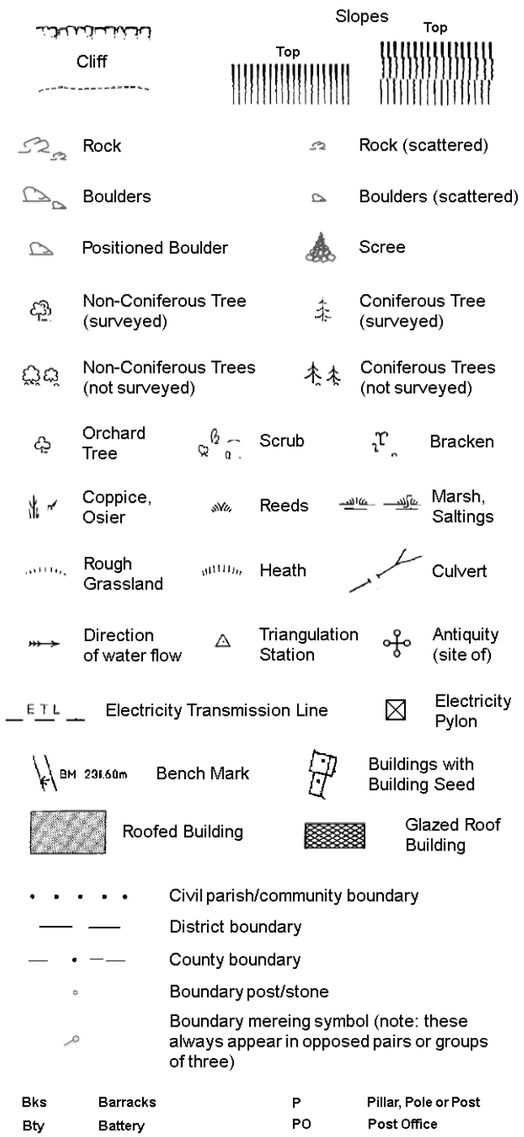
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

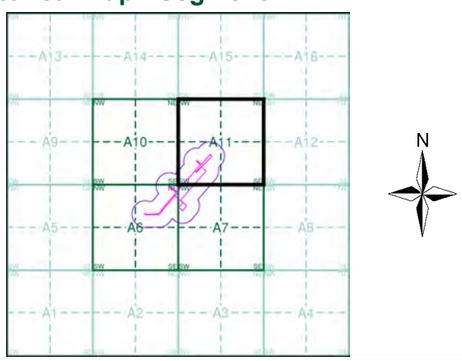
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

MOTT MACDONALD

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Essex	1:2,500	1876	2
Essex	1:2,500	1897	3
Essex	1:2,500	1920 - 1921	4
Ordnance Survey Plan	1:2,500	1970	5
Additional SIMs	1:2,500	1991	6
Additional SIMs	1:2,500	1992	7
Large-Scale National Grid Data	1:2,500	1993	8
Large-Scale National Grid Data	1:2,500	1996	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A11



Order Details

Order Number: 314797450_1_1
Customer Ref: 100106627 MM STN_TP Geotech/Env
National Grid Reference: 555560, 223730
Slice: A
Site Area (Ha): 2.73
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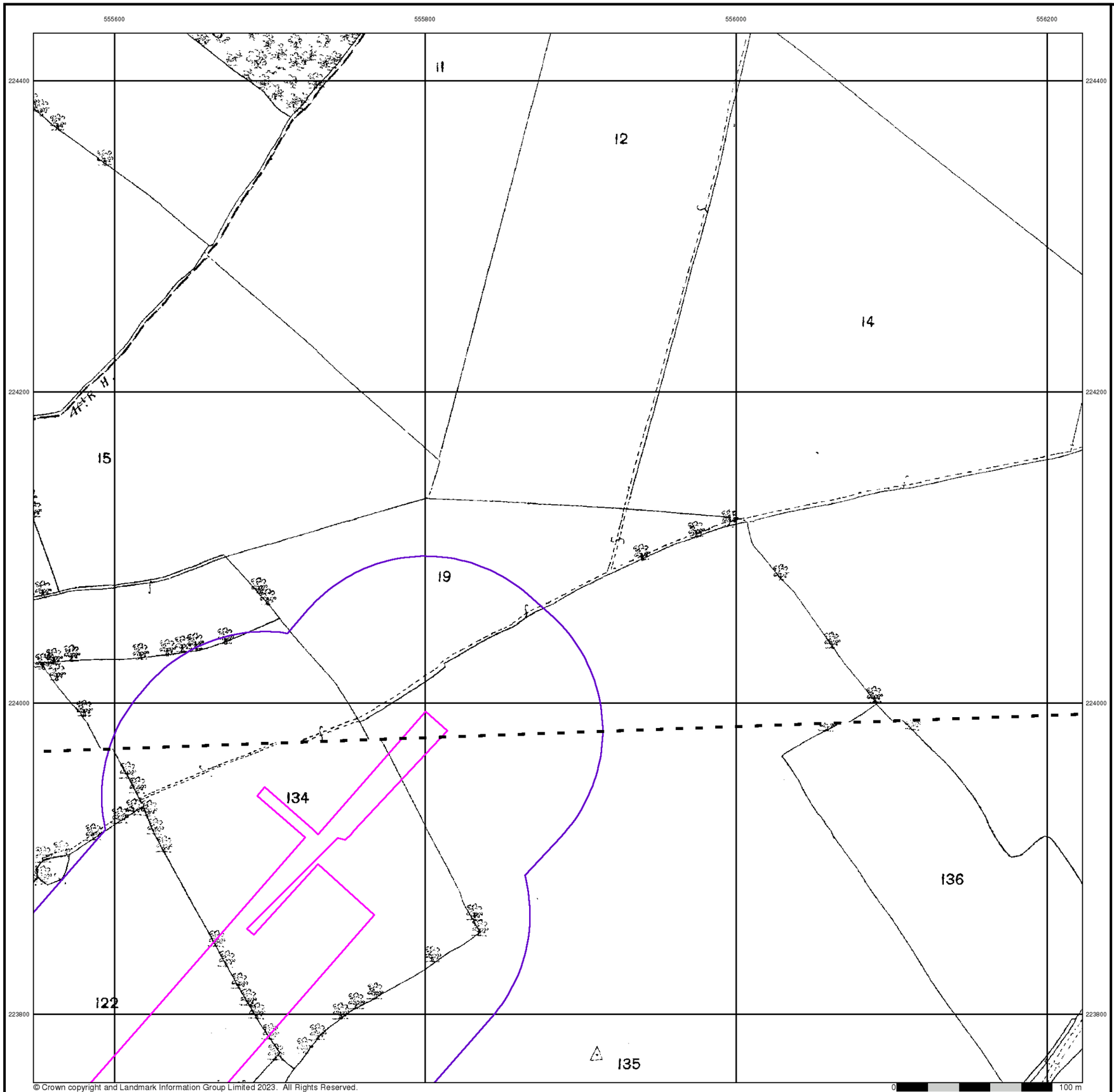

MOTT MACDONALD

Essex

Published 1876

Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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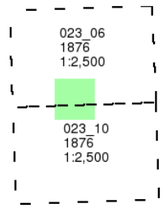
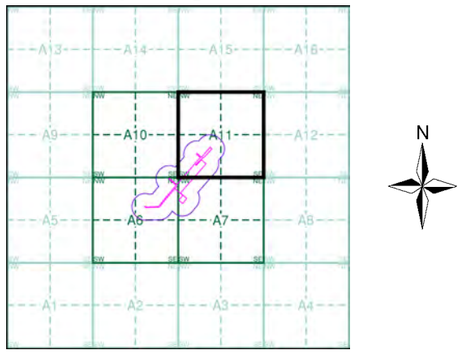


Historical Map - Segment A11



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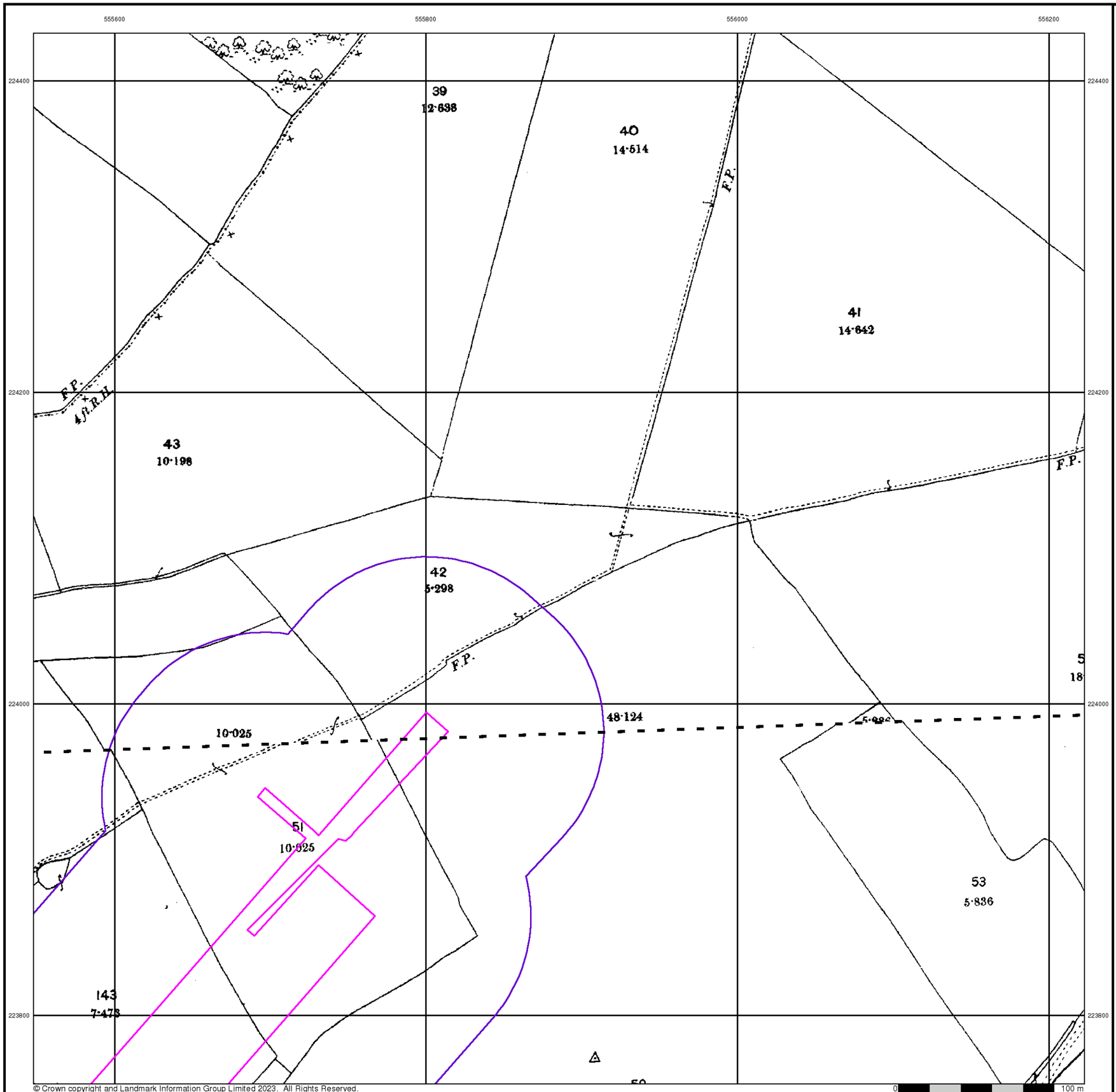

MOTT MACDONALD

Essex

Published 1897

Source map scale - 1:2,500

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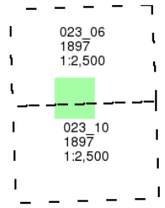
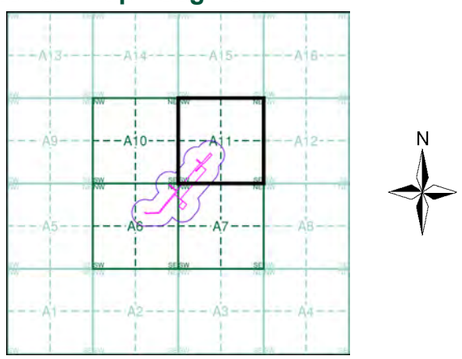


Historical Map - Segment A11



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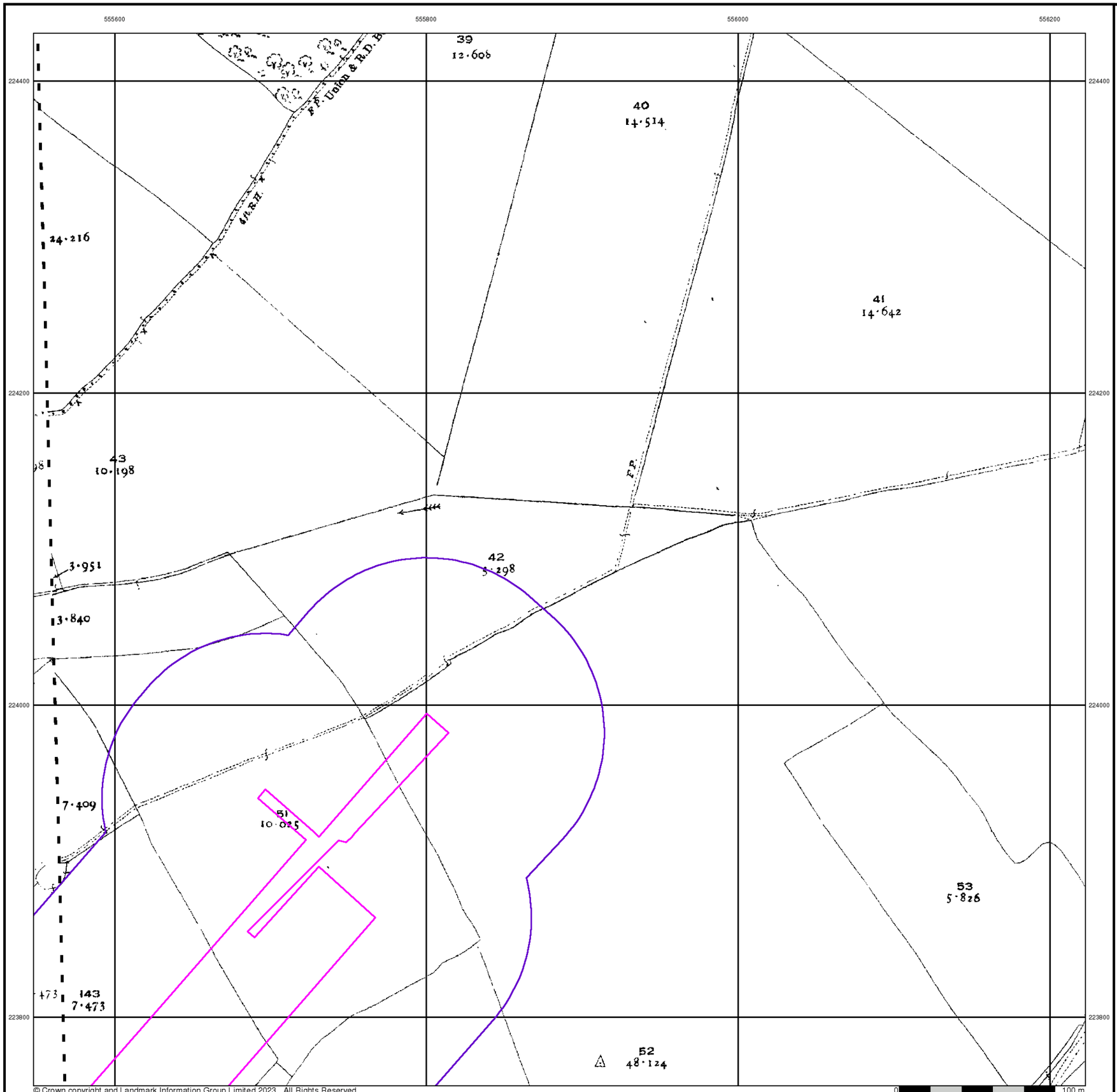


MOTT MACDONALD

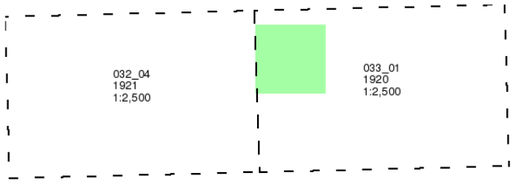
Essex

Published 1920 - 1921

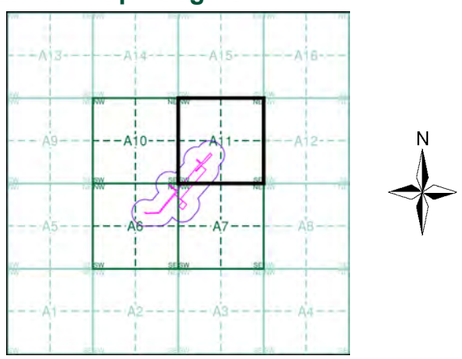
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



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Site Details

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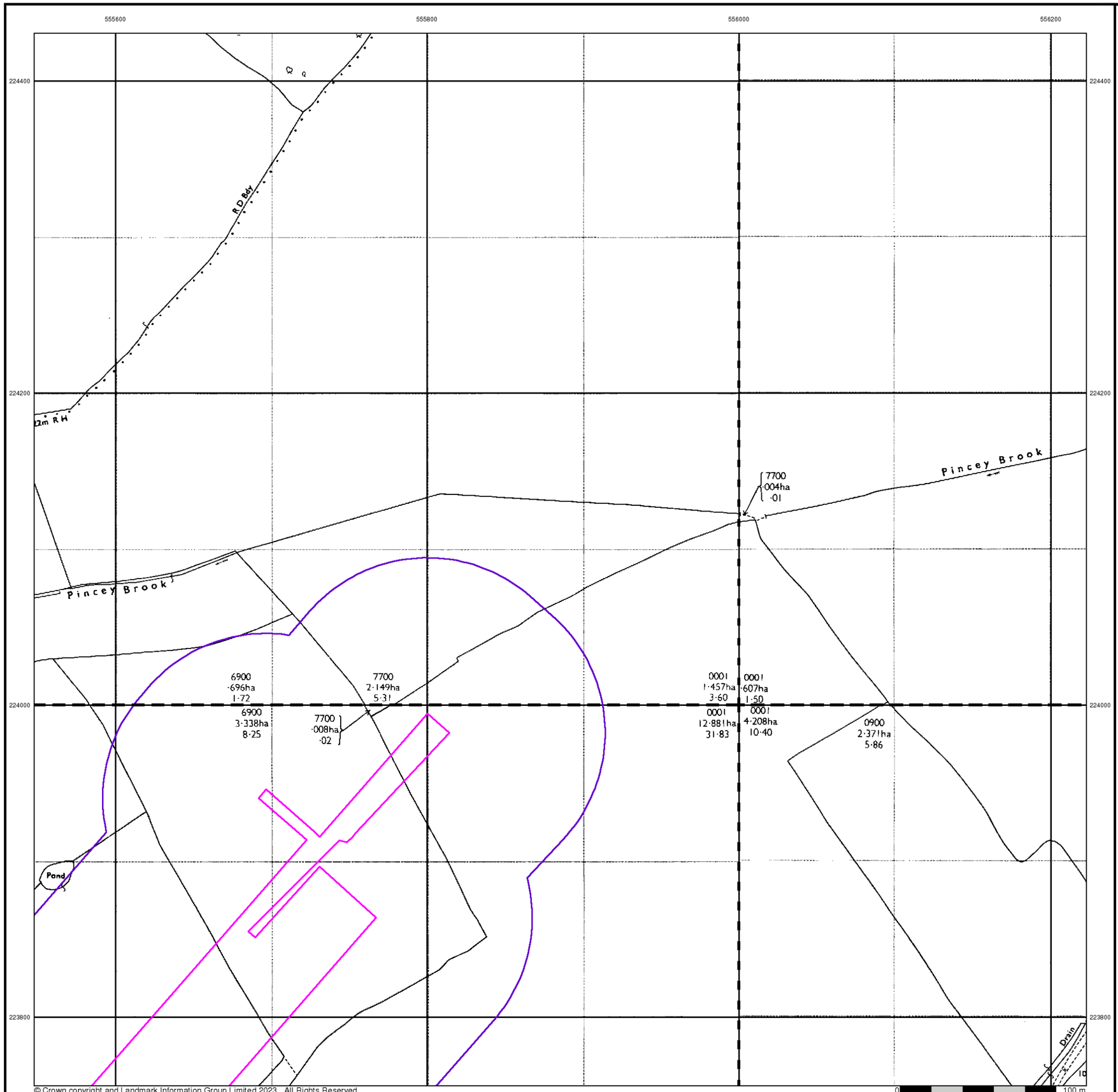
Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

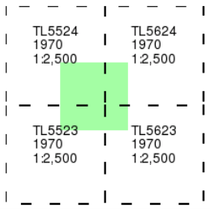
Ordnance Survey Plan

Published 1970

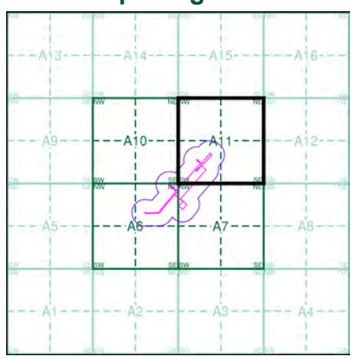
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



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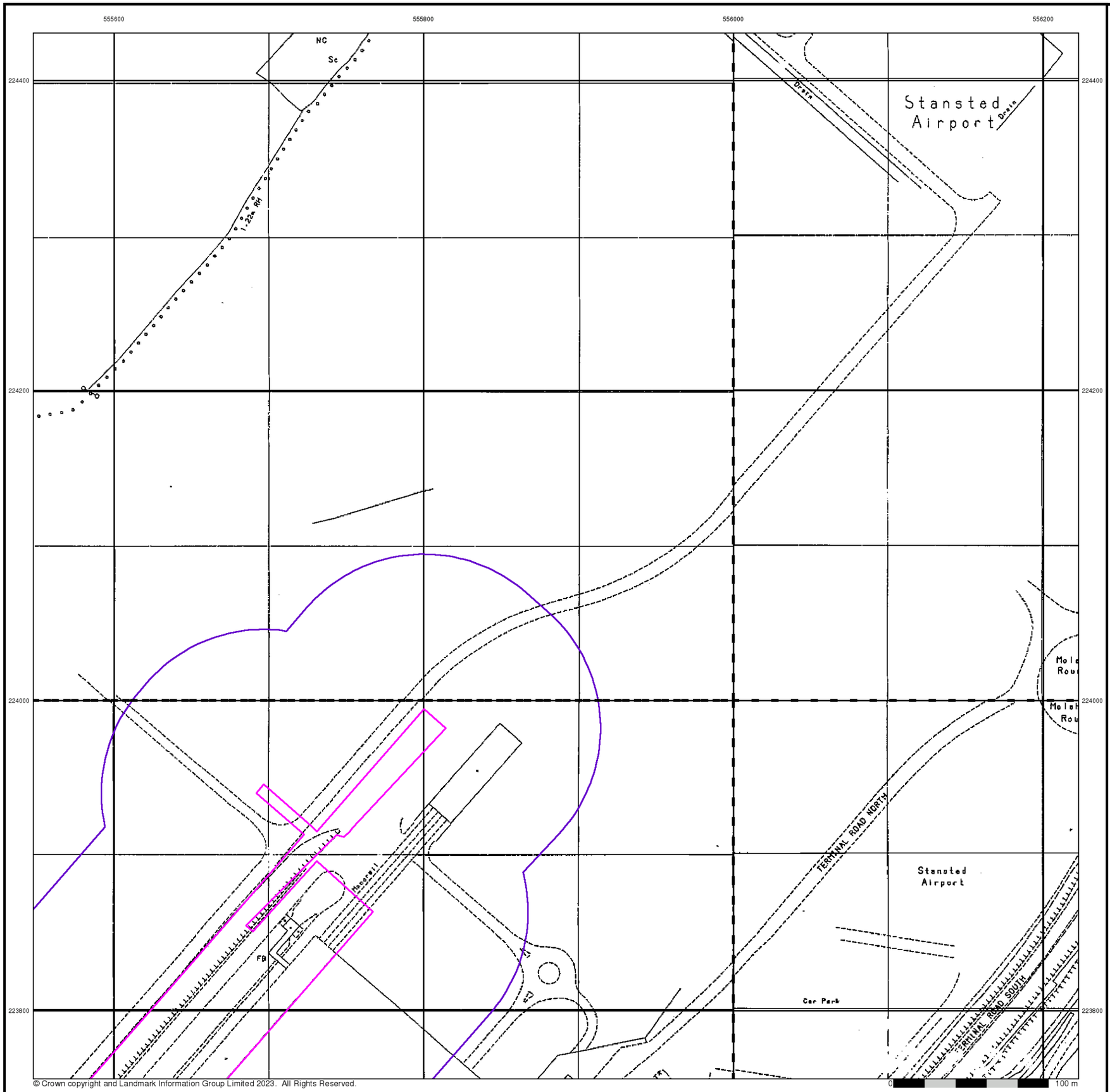


MOTT MACDONALD

Additional SIMs

Published 1991

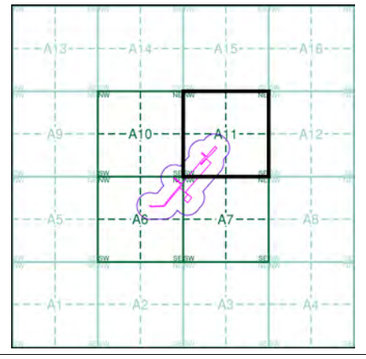
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

TL5524 1991 1:2,500	TL5624 1991 1:2,500
TL5523 1991 1:2,500	TL5623 1991 1:2,500

Historical Map - Segment A11



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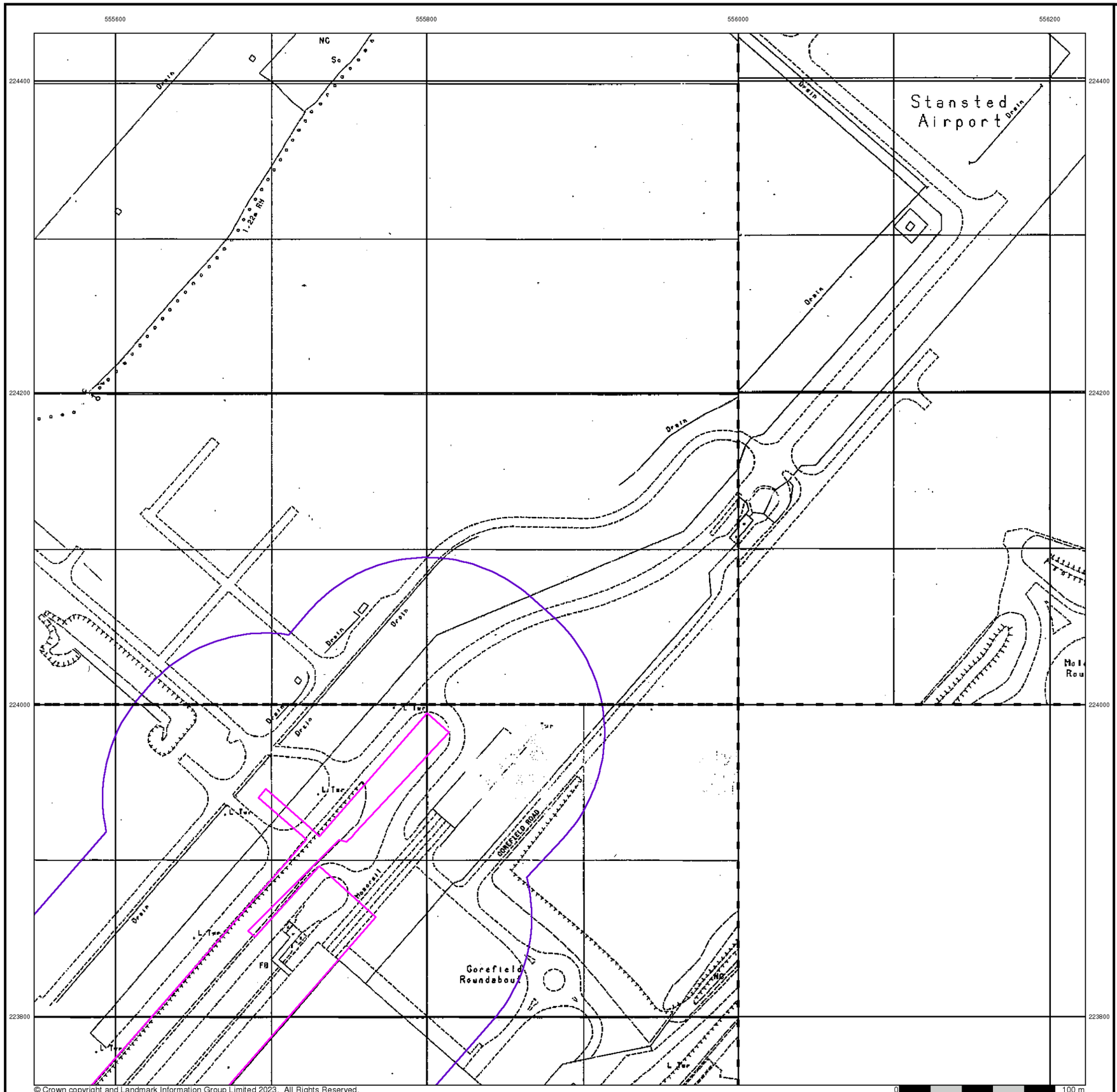

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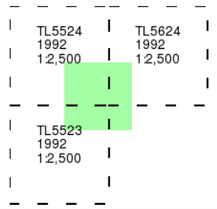
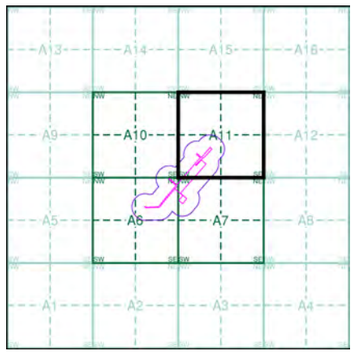


Historical Map - Segment A11



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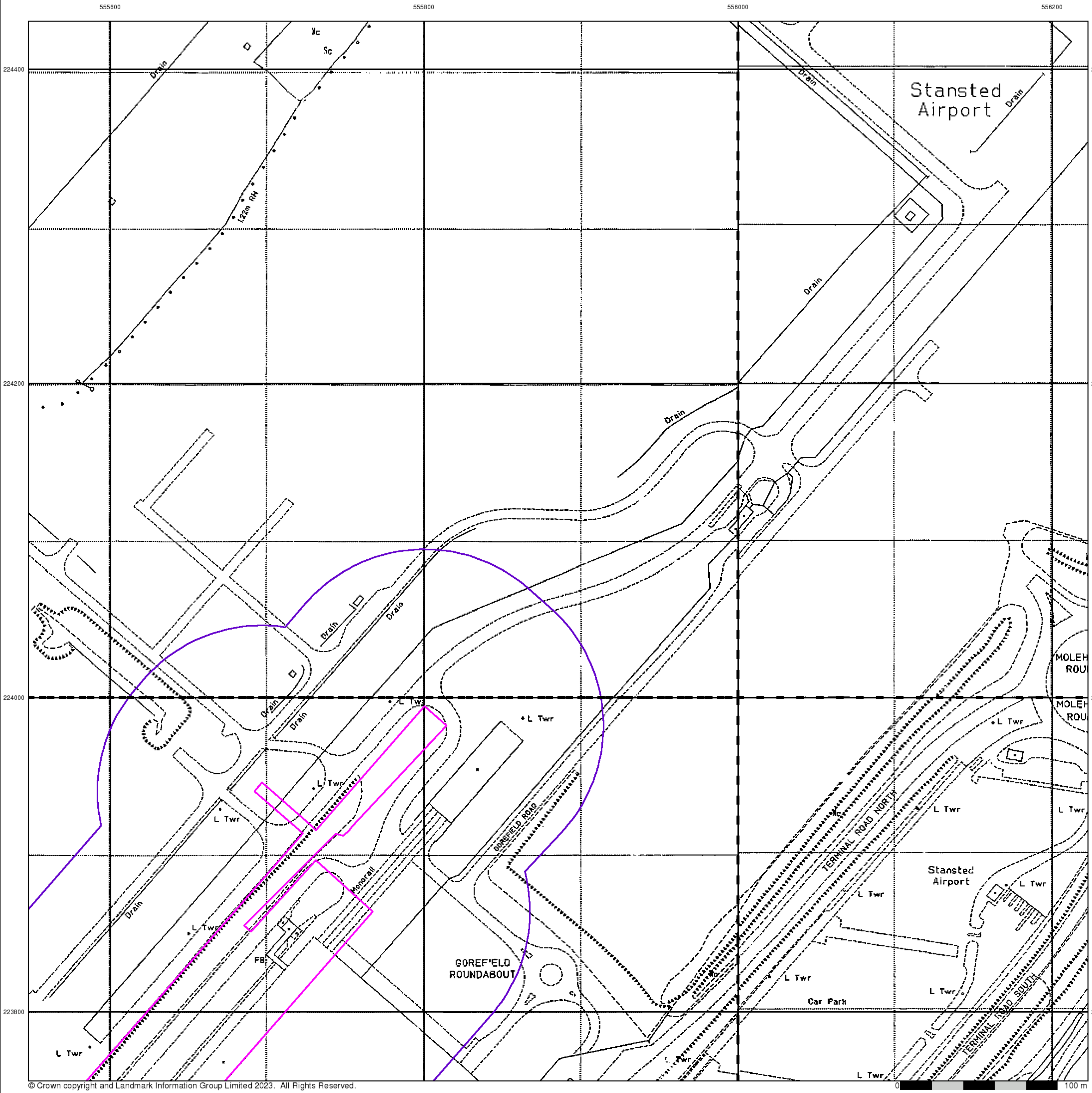


MOTT MACDONALD

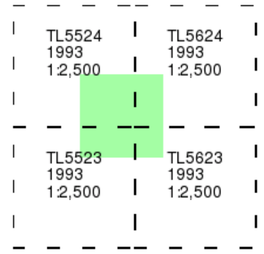
Large-Scale National Grid Data

Published 1993

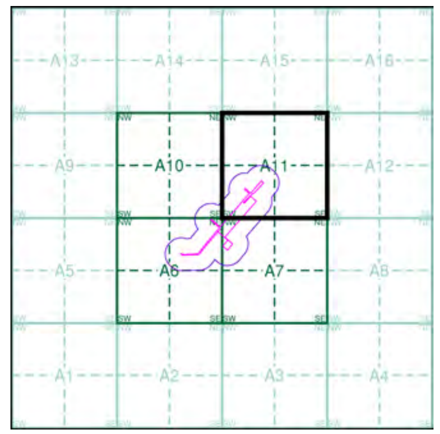
Source map scale - 1:2,500

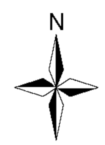
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A11





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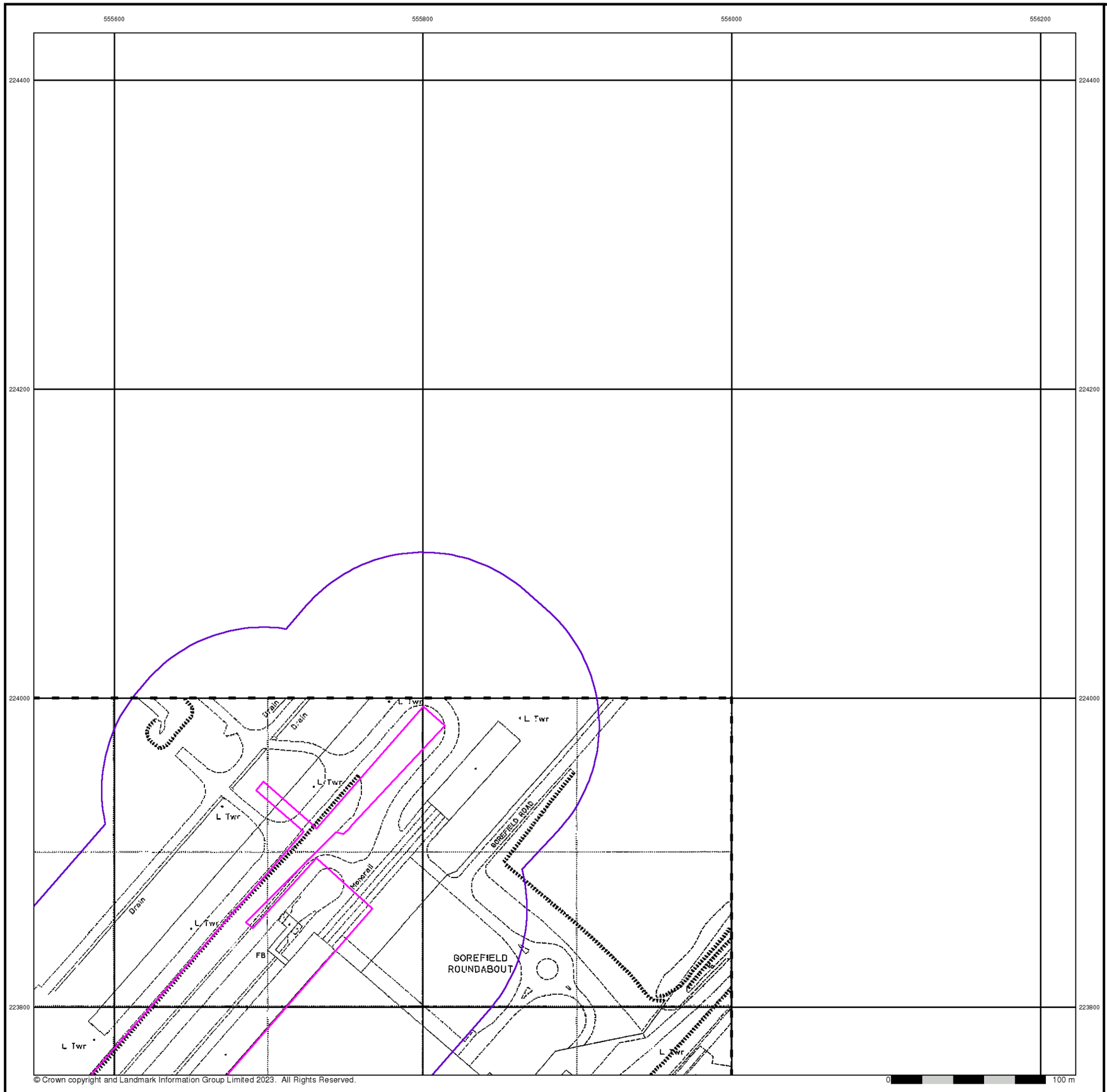

MOTT MACDONALD

Large-Scale National Grid Data

Published 1996

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

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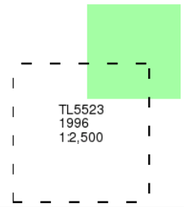
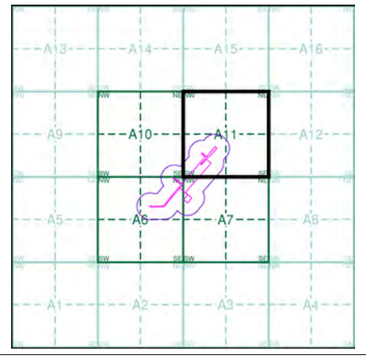


Historical Map - Segment A11



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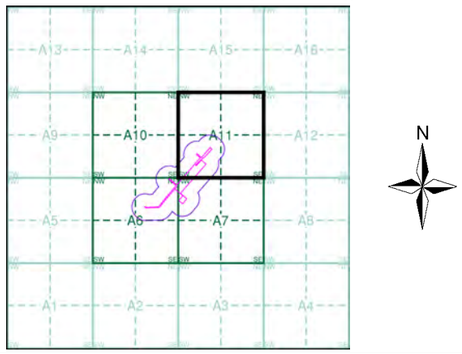
MOTT MACDONALD

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A11



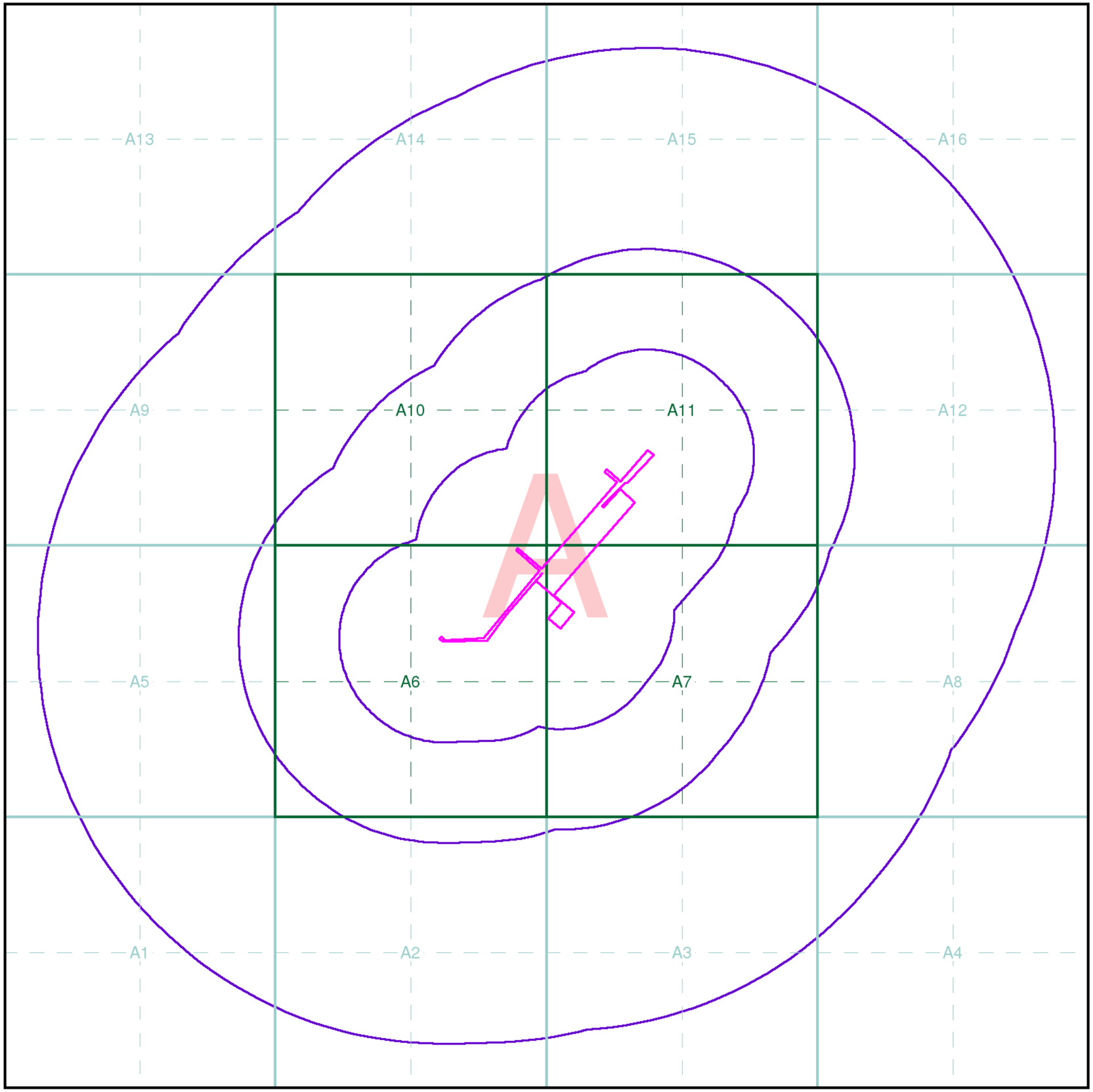
Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555560, 223730
Slice:	A
Site Area (Ha):	2.73
Search Buffer (m):	100

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]



MOTT MACDONALD

Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Map data

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Environment Agency

NATURAL ENGLAND

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mrs N Kingdon, Mott Macdonald, 2nd Floor, East Wing, 69-75 Thorpe Road, Norwich, Norfolk, NR1 1UA

Order Details

Order Number:	314797450_1_1
Customer Ref:	100106627 MM STN_TP Geotech/Env
National Grid Reference:	555630, 223750
Site Area (Ha):	2.73
Search Buffer (m):	1000

Site Details

Stansted Airport, Terminal Road North, Stansted, CM24 1RG

Full Terms and Conditions can be found on the following link:
[redacted]

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: [redacted]

B. Conceptual Site Model

Sources:

S1: Contamination associated with land use as an airport

S2: Bulk fuel storage and distribution – onsite aviation fuel distribution lines, and possible former tanks around Satellite 3

S3: Possible localised infilling of unnamed drains, former moat previously onsite or other unidentified areas made grounds.

Pathways:

P1: Human health uptake pathways (inhalation, ingestion and direct contact)
P2: Wind-blown dust during demolition and construction
P3: Vertical and horizontal migration of contaminants in the unsaturated zone
P4: Vertical and horizontal migration of contaminants in the saturated zone
P5: Run-off
P6: Man-made pathways e.g., piles and deep foundations (if required as part of extension)
P7: Migration of ground gases and/or vapours.
P8: Direct contact with construction materials and buried infrastructure

Receptors:

R1: Construction workers

R2: Final end users

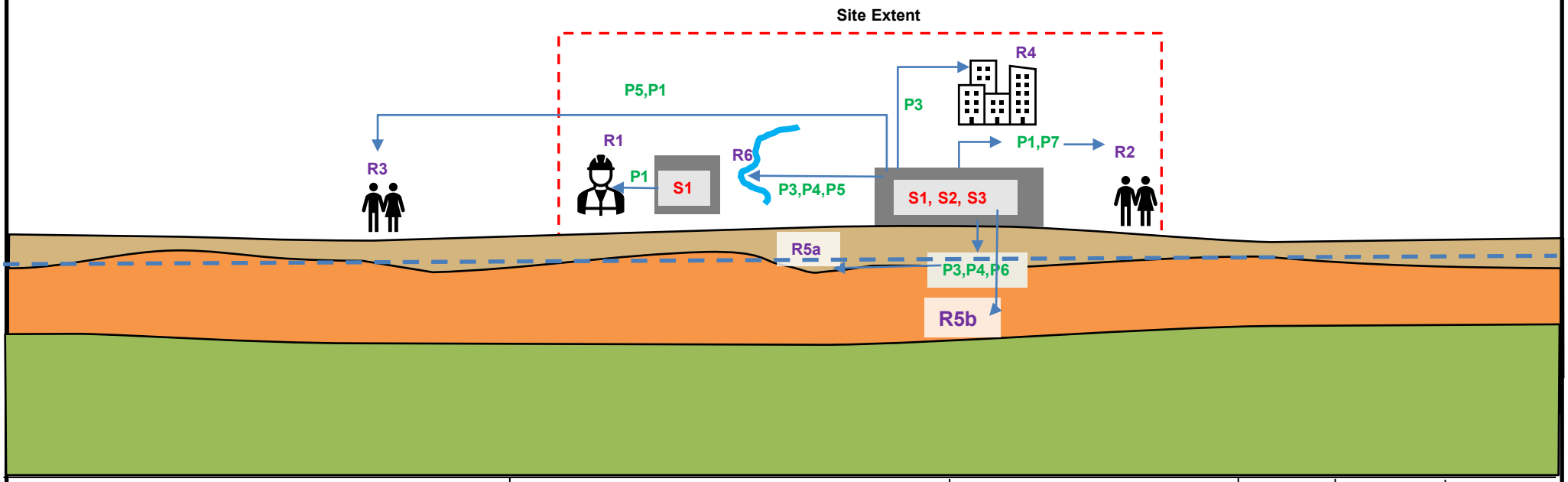
R3: Off-site/adjacent land users during construction

R4: Built environment/already existing buildings.

R5a: Groundwater Lowestoft Formation (Secondary Undifferentiated aquifer)

R5b: Groundwater Kesgrave Formation (Secondary A aquifer)

R6:Surface water receptors – Pincey Brook in a culvert to the west and water course to the east



MOTT MACDONALD

Client: Stansted Airport Limited (STAL)

Project: Stansted Airport Terminal Expansion

Key:
- Lowestoft
- Kesgrave
- London Clay Formation
- Estimated groundwater level

NOT TO SCALE

Originated	SM. Bukar	18.07.2023
Checked	M.Sweeney	24.07.2023
Approved	D.Giordanelli	27.07.2023

Title: Conceptual Site Model

C Contaminated Land Risk Methodology

The following classification published by the NHBC, EA, and CIEH (2008) has been used to summarise contamination risks in this report. The methodology differs from that presented in *Contaminated Land Risk Assessment, A Guide to Good Practice* (CIRIA C552, 2001), particularly in terms of the definitions of classification of consequence, which include a consideration of immediacy of hazards.

The key to the classification is that the designation of risk is based upon the consideration of both:

- **the magnitude of the potential consequence (i.e. severity).**
  [takes into account both the potential severity of the hazard and the sensitivity of the receptor]
- **the magnitude of probability (i.e. likelihood).**
  [takes into account both the presence of the hazard and receptor and the integrity of the pathway]

The potential consequences of contamination risks occurring at this Site are classified in accordance with Table 1 below:

Table 1: Classification of Consequence

Classification	Definition of Consequence
Severe	Highly elevated concentrations likely to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.
Medium	Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.
Mild	Exposure to human health unlikely to lead to "significant harm". Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.

Classification	Definition of Consequence
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.

Source: EA, CIEH, NHBC, R&D66:2008

The probability of contamination risks occurring at this Site will be classified in accordance with Table 2 below. Note: A pollution linkage must first be established before probability is classified. If there is no pollution linkage then there is no potential risk. If there is no pollution linkage then there is no need to apply tests for probability and consequence

Table 2: Classification of Probability

Classification	Definition of Probability
High Likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low Likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

Source: EA, CIEH, NHBC, R&D66:2008

For each possible pollution linkage (source-pathway-receptor) identified, the potential risk can be evaluated based upon the following probability x consequence matrix shown in Table 3 below:

Table 3: Overall Qualitative Contamination Risk Matrix

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High likelihood**	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Moderate / Low risk	Low risk
	Low likelihood	Moderate risk	Moderate / Low risk	Low risk	Very low risk
	Unlikely	Moderate / Low risk	Low risk	Very low risk	Very low risk

Source: EA, CIEH, NHBC, R&D66:2008

R&D 66:2008 presents definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary in each case. These definitions are reproduced in Table 4. These risk categories apply to each pollutant linkage, not simply to each hazard or receptor.

Table 4: Definition of Risk Categories and Likely Actions Required

Risk Category	Definition and likely actions required
Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
Very low	It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.
No potential risk	There is no potential risk if no pollution linkage has been established.

Source: (EA, NHBC, CIEH, 2008)

D. BGS Borehole Logs

TL 52 SE 13

TL 52 SE 13 5511 2411 Stansted Airport, Stansted Mountfitchet **Block D**

Surface level +103.3 m
Water struck at +100.1 m and +87.4 m
November 1980

Waste 15.9 m
Bedrock 0.9 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Topsoil	0.2	0.2
Boulder Clay	Clay, silty, fine sandy, with some fine flint pebbles and rare chalk pellets, firm, dark yellowish brown	0.4	0.6
	Clay, silty, with pellets and pebbles of chalk and some angular flint, yellowish brown mottled grey around chalk pebbles	2.6	3.2
	Clay, silty, with chalk pellets and pebbles and thin chalky sand seams, brown	0.3	3.5
	Clay, silty, with pellets and pebble of chalk and some flint and and black shale, firm becoming stiff, grey becoming dark grey	12.0	15.5
	Clay, silty, packed with chalk pellets, flint cobble at base, stiff to hard, waxy	0.4	15.9
London Clay	Clay, silty, fine sandy, micaceous, with comminuted shell debris, stiff to hard, very dark greyish brown	0.9+	16.8

TL 52 SE|14

TL 52 SE 14 **5556 2315** **Stansted Airport, Stansted Mountfitchet**

Block D

Surface level +100.0 m
Water struck at +93.7 m and +91.4 m
November 1980

Waste 15.2 m
Bedrock 1.8 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	1.7	1.7
Boulder Clay	Clay, silty, with pebbles and pellets of chalk and some angular flint, yellowish brown mottled grey	1.8	3.5
	Clay, silty, with pebbles and pellets of chalk and some angular black flint, firm, yellowish brown	2.0	5.5
	Clay, silty, with pebbles and pellets of chalk and some angular flint and black shale, stiff, grey becoming dark grey	0.8	6.3
	Sand, 'clayey', fine and medium subangular quartz	0.2	6.5
	Clay, silty, with some silty sand seams between 8.0 m and 9.0 m, with pebbles and pellets of chalk, black shale and flint, stiff, grey becoming dark grey	7.5	14.0
	Clay, silty, with pellets of chalk and rare pebbles of flint and quartz, stiff and waxy, very dark brown	1.2	15.2
London Clay	Clay, silty, fine sandy, with pockets of dark brownish green sand, micaceous, stiff to hard, waxy, very dark brown	1.8+	17.0

TL 52 SE|15

TL 52 SE 15 **5571 2191** **Near Oldhouse, Takeley**

Block D

Surface level +89.0 m
Water struck at +82.2 m
November 1980

Waste 7.2 m
Bedrock 1.0 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Topsoil	0.3	0.3
Boulder Clay	Clay, silty, with pebbles of flint and chalk, yellowish brown	0.3	0.6
	Clay, silty, with pellets of chalk and flint, yellowish brown becoming light brown mottled light grey	2.6	3.2
	Clay, silty, with pellets and pebbles of chalk and some flint, dark grey	3.6	6.8
	Sand, 'clayey' with chalk pellets, light greyish brown	0.1	6.9
	Clay, silty, with chalk pellets, very soft, dark grey	0.3	7.2
London Clay	Clay, silty, stiff, waxy, dark greyish black	1.0+	8.2

Keith Nulla

Location STANSTED TRACKED TRANSIT SYSTEM

Record of Borehole No. TT3

LIG36

Sheet 1 of 2

Client BRITISH AIRPORTS AUTHORITY

Type of boring LIGHT CABLE PERCUSSION

Job No. 11311113 Ground level 98.70 m O.D. Diameter / 200mm to 5.00m, 150mm to 15.00m Casing / 200mm to 4.90m, 150mm to 13.45m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend	Geology
22.10.86									Stiff grey slightly sandy silty CLAY with many chalk fragments of medium sand to medium gravel size (occasionally orange stained) and occasional medium to coarse flint gravel.		
			1.00	1	D	1					
			2.00 - 2.45	2	U (20)	2					
			2.45 - 2.50	3	D						
			3.00	4	D	3					
			4.00	5	D	4					
	▽4.90		4.90	14	W						
		4.90	5.00 - 5.45	6	U (22)	5					
			5.45 - 5.50	7	D						
			6.00	8	D	6	6.00	92.70	--- becoming very stiff and mid-dark grey.		
			7.00	9	D	7					
		7.90	8.00 - 8.45	10	U (21)	8					
			8.45 - 8.50	11	D						
		9.40	9.50 - 9.95	12	U (25)	9			Grey brown silty medium SAND with some coarse sand and occasional fine to medium gravel.		GLACIAL TILL
	▼9.90		9.95 - 10.00	13	D		9.90	88.80			

Key
- U. . . . undisturbed 102mm diameter sample
- D. . . . disturbed jar sample
- B. . . . disturbed bulk sample
- W. . . . water sample
- S( ). standard penetration test
- C( ). cone penetration test
- (33). . number of blows ('N' value)
- ⧗ . . groundwater encountered

Remarks

Groundwater seepages were encountered between 4.25m and 9.00m.
Groundwater was encountered at 9.90m and rose to 4.90m in 20 minutes.
It was sealed off at 13.45m.

GROUND

Record of Borehole No. TT3

Sheet 2 of 2

Location STANSTED TRACKED TRANSIT SYSTEM

Client BRITISH AIRPORTS AUTHORITY

Type of boring LIGHT CABLE PERCUSSION

Job No. 11311113 Ground level 98.70 m O.D.

Diameter / 200mm to 5.00m, 150mm to 15.00m

Casing / 200mm to 4.90m, 150mm to 13.45m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend	Geology
			10.25	15	B		10.00	88.70	As from 9.90m.		
		10.50	10.50 - 10.95	16	BC(17)		10.40	88.30	Medium dense slightly orange brown silty medium to coarse SAND and fine, medium and coarse subangular to subrounded flint GRAVEL with occasional flint cobbles.		KESGRAVE BEDS
			11.50	17	B						
		12.00	12.00 - 12.45	18	BC(22)						
			12.65	19	B		12.65	86.05			
			12.75	20	D		12.90	85.80	Very stiff brown and orange brown fine sandy silty CLAY.		
	13.45 Sealed	13.45	13.50 - 13.95	21	U (31)				Very stiff mid-dark grey very closely fissured silty CLAY with grey fine sand partings (becoming rarer with depth).		LONDON CLAY
			13.95 - 14.00	22	D						
			14.50 - 14.95	23	DS(32)						
15.00	DRY	13.45					15.00	83.70	BOREHOLE COMPLETED.		

Key

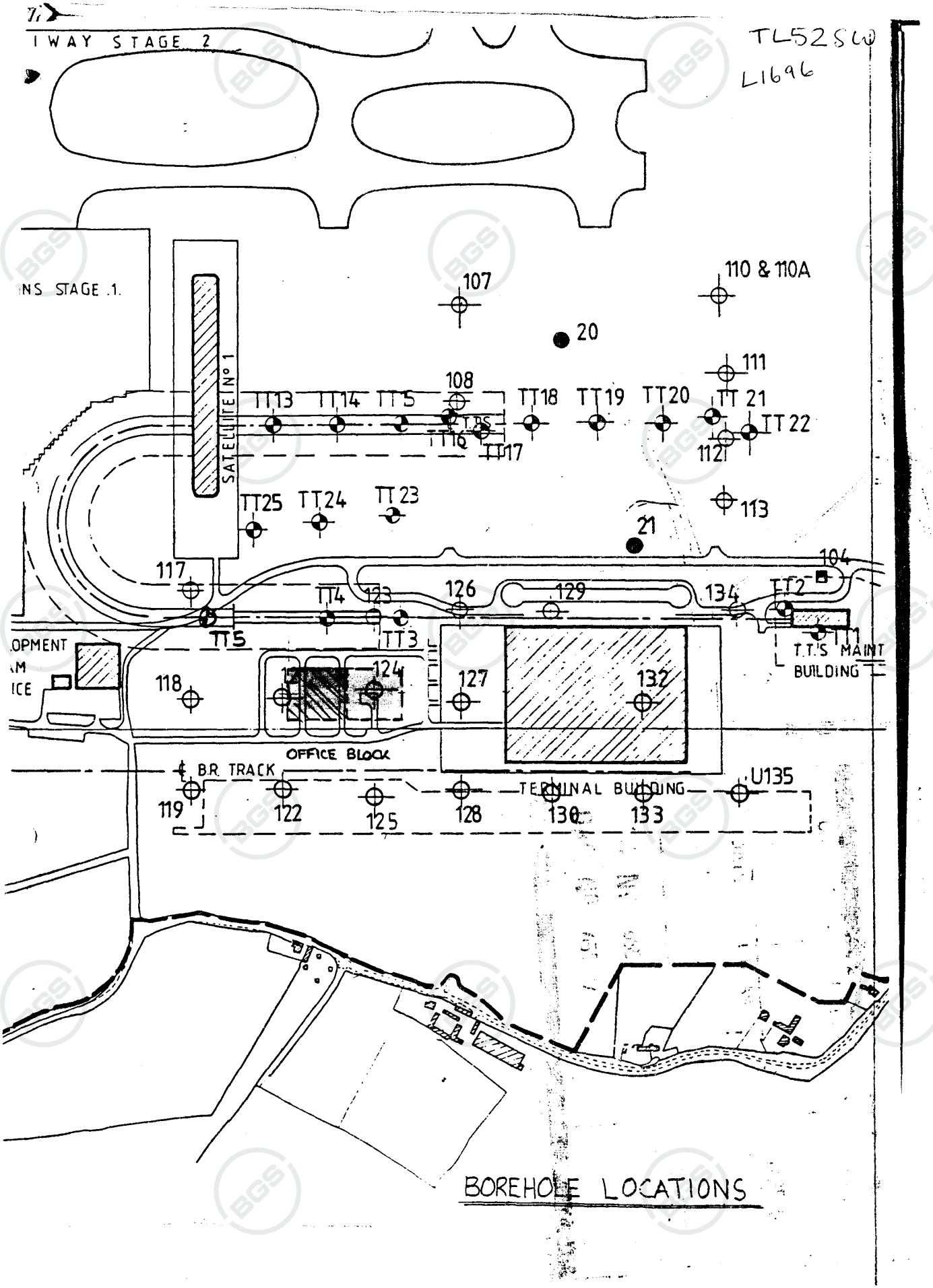
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). . standard penetration test
C( ). . cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks

A standpipe piezometer was installed with tip at 12.00m within a sand cell from 10.00m to 12.50m.

GROUND

BGS ID: 18471820 : BGS Reference: TL52SE174
EPSG: 27700 : 555530,223590



Record of Borehole No. TT4

Sheet 1 of 3

Location STANSTED TRACKED TRANSIT SYSTEM

Client BRITISH AIRPORTS AUTHORITY

Type of boring LIGHT CABLE PERCUSSION

Job No. 11311113 Ground level 98.60 m O.D.

Diameter / 200mm to 8.00m, 150mm to 25.00m

Casing / 200mm to 7.50m, 150mm to 14.95m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend	Geology
23.10.86									Stiff light-mid grey slightly sandy silty CLAY with many chalk fragments of medium sand to medium gravel size, occasional medium flint gravel and occasional grey siltstones.		
			1.00	1	D						
		1.50	2.00 - 2.45	2	U (18)						
			2.45 - 2.50	3	D						
	▽3.05		3.00	4	D						
			3.05	16	W						
			4.00	5	D						
		4.50	5.00 - 5.45	6	U (20)		5.00	93.60	--- becoming very stiff with chalk fragments to coarse gravel size.		GLACIAL TILL
			5.45 - 5.50	7	D						
			6.00	8	D						
			7.00	9	D						
		7.50	8.00 - 8.45	10	U (20)		8.00	90.60	--- becoming mid-dark grey.		
			8.45 - 8.50	11	D						
		9.45	9.50 - 9.95	12	U (23)						
			9.95 - 10.00	13	D		10.00	88.60			

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▽.. groundwater encountered

Remarks
Groundwater seepages were encountered between 1.00m and 10.60m.

GROUND

Record of Borehole No. TT4

Sheet 2 of 3

Location STANSTED TRACKED TRANSIT SYSTEM

Client BRITISH AIRPORTS AUTHORITY

Type of boring LIGHT CABLE PERCUSSION

Job No. 11311113 Ground level 98.60 m O.D. Diameter / 200mm to 8.00m, 150mm to 25.00m Casing / 200mm to 7.50m, 150mm to 14.95m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend	Geology
							10.00	88.60	As from 8.00m.		GLACIAL TILL
			10.75	14	D		10.60	88.00			
		10.75	11.00 - 11.45	15	DS(45)	1			Very stiff dark grey sandy silty CLAY with some chalk fragments of medium sand to medium gravel size and some fine to medium gravel.		
	▼11.70						11.70	86.90			
	3.10	12.00	12.00 - 12.45	17	BC(22)	2			Medium dense fine, medium and coarse subangular to subrounded flint GRAVEL and orange brown slightly silty medium to coarse SAND.		KESGRAVE BEDS
			13.00	18	B	3					
	3.35	13.50	13.50 - 13.95	19	BC(21)	4					
			14.50	20	D		14.30	84.30	Stiff to very stiff orange brown mottled brown fine sandy silty CLAY.		
	14.95		14.90	21	D		14.80	83.80			
	Sealed	14.95	15.00 - 15.45	22	U (35)	5			Very stiff dark brown very closely fissured silty CLAY with brown and dark grey fine sand partings and occasional scattered fine selenite crystals.		
15.50	DRY	14.95									
24.10.86	DRY	14.95	15.45 - 15.50	23	D	6					
			16.50 - 16.95	24	DS(39)	7					
			18.00 - 18.45	25	U (38)	8	18.00	80.60	--- becoming dark grey brown with occasional dark grey fine sand partings.		LONDON CLAY
			18.45 - 18.50	26	D	9					
			19.50 - 19.95	27	DS(38)	10					
							20.00	78.60			

Key
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). standard penetration test
C( ). cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks
Groundwater was encountered at 11.70m and rose to 3.05m in 30 minutes. It was sealed off at 14.95m.

GROUND

Record of Borehole No. TT4

Sheet 3 of 3

Location STANSTED TRACKED TRANSIT SYSTEM

Client BRITISH AIRPORTS AUTHORITY

Type of boring LIGHT CABLE PERCUSSION

Job No. 11311113 Ground level 98.60 m O.D. Diameter / 200mm to 8.00m, 150mm to 25.00m Casing / 200mm to 7.50m, 150mm to 14.95m

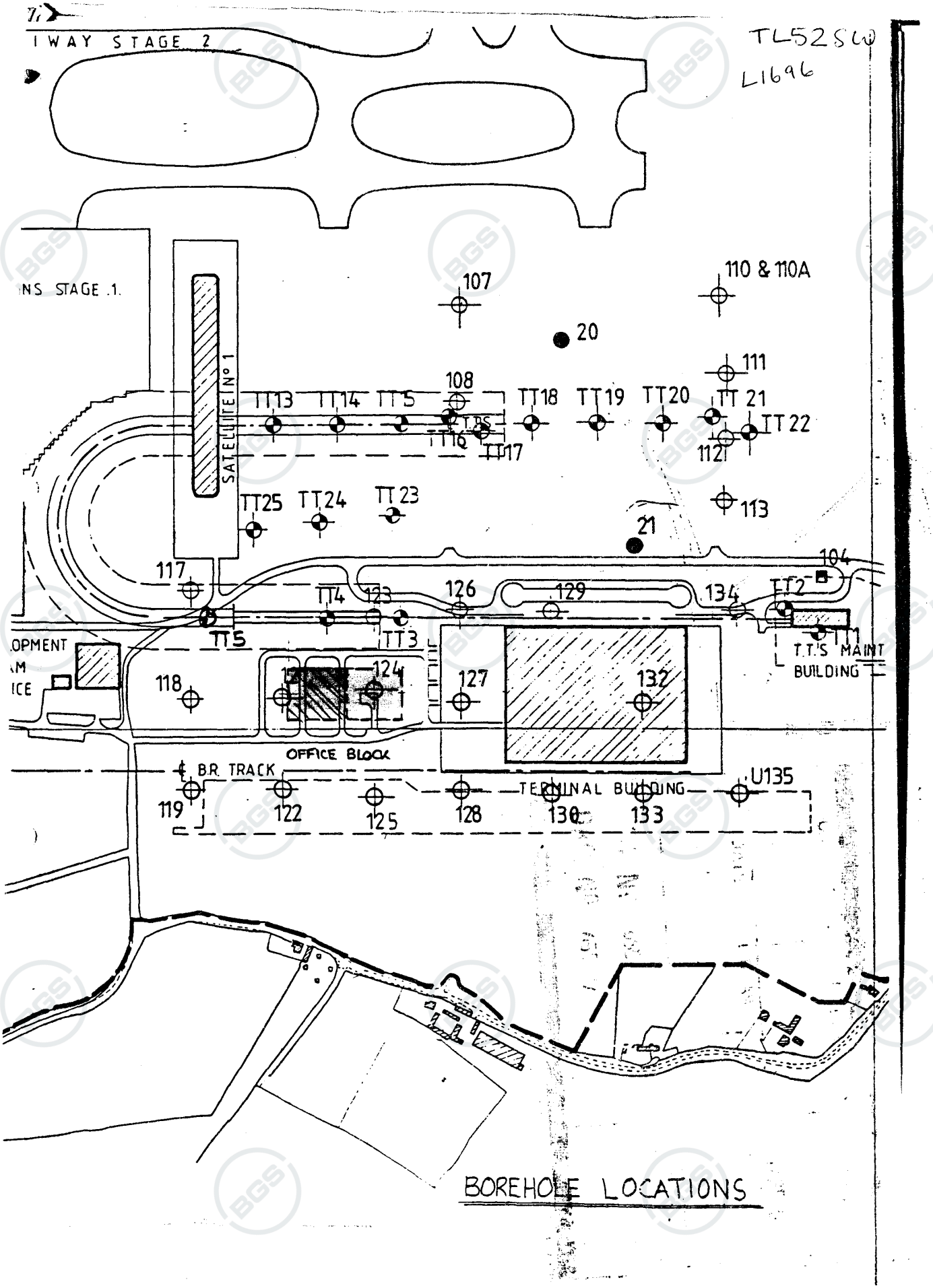
Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend	Geology
							20.00	78.60	As from 18.00m		
			21.00 - 21.45	28	U (40)						
			21.45 - 21.50	29	D						
			22.50 - 22.95	30	DS(47)						
			24.50 - 24.95	31	U (41)						
25.00	DRY	14.95	24.95 - 25.00	32	D		25.00	73.60	BOREHOLE COMPLETED		

Key
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). standard penetration test
C( ). cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks
A standpipe piezometer was installed with tip at 7.00m within a sand cell from 6.00m to 7.50m.

GROUND

BGS ID: 18471821 : BGS Reference: TL52SE175
EPSG: 27700 : 555480,223530



Record of Borehole No. 123

SHEET 1 of 2

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 103.90m O.D. Diameter / 200mm to 9.70m, 150mm to 20.00m Casing / 200mm to 9.70m, 150mm to 17.10m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
15.3.83.			0.35 - 0.40	1	D		0.25	103.65	TOP SOIL	
									Firm to stiff yellowish brown sandy CLAY with fine to medium chalk gravel.	
			0.80 - 1.00	2	B		0.70	103.20		
		-	1.00 - 1.45	3	U102				Stiff yellowish brown mottled grey silty CLAY with fine to coarse chalk and flint gravel.	
		-	1.45 - 1.60	4	D					
		-	1.75 - 2.05	5	S(24)				(GLACIAL TILL).	
			2.25 - 2.50	6	B					
		2.40	2.50 - 2.95	7	U102					
			2.95 - 3.10	8	D					
		2.40	3.25 - 3.55	9	S(23)		3.10	100.80	.....becoming greyish brown.	
		3.90	4.00 - 4.45	10	U102					
			4.45 - 4.60	11	D					
		3.90	4.75 - 5.05	12	S(24)		4.70	99.20	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
			5.25 - 5.50	13	B					
		5.40	5.50 - 5.95	14	U102					
			5.95 - 6.10	15	D					
		5.40	6.25 - 6.55	16	S(25)					
	▽ 6.55		6.55	21	W					
	▼ 6.75						6.75	97.15		
			6.90 - 6.95	17	D				Fine to coarse very clayey silty SAND with fine to medium chalk gravel.	
		6.95	7.00 - 7.45	18	U102		7.25	96.65		
			7.45 - 7.60	19	D				Firm light grey very silty CLAY with fine to coarse chalk and flint gravel.	
			7.75 - 8.05	20	S(14)					
(8.05m)	6.55	6.95								
16.3.83.	3.85	6.95	8.25 - 8.50	22	B					
	8.40 Sealed	8.40	8.50 - 8.95	23	U102					
			8.95 - 9.10	24	D		8.95	94.95	.....becoming stiff and grey.	
			9.10 - 9.55	25	B					
		8.40	9.25 - 9.55		S(16)*					
							10.00	93.90		

/continued.....

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

1. Water struck at 6.75m, rose to 6.55m in 20 minutes, sealed by casing at 8.40m.

GROUND

Record of Borehole No. 123

SHEET 2 of 2

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 103.90m O.D. Diameter / 200mm to 9.70m, 150mm to 20.00m Casing / 200mm to 9.70m, 150mm to 17.10m

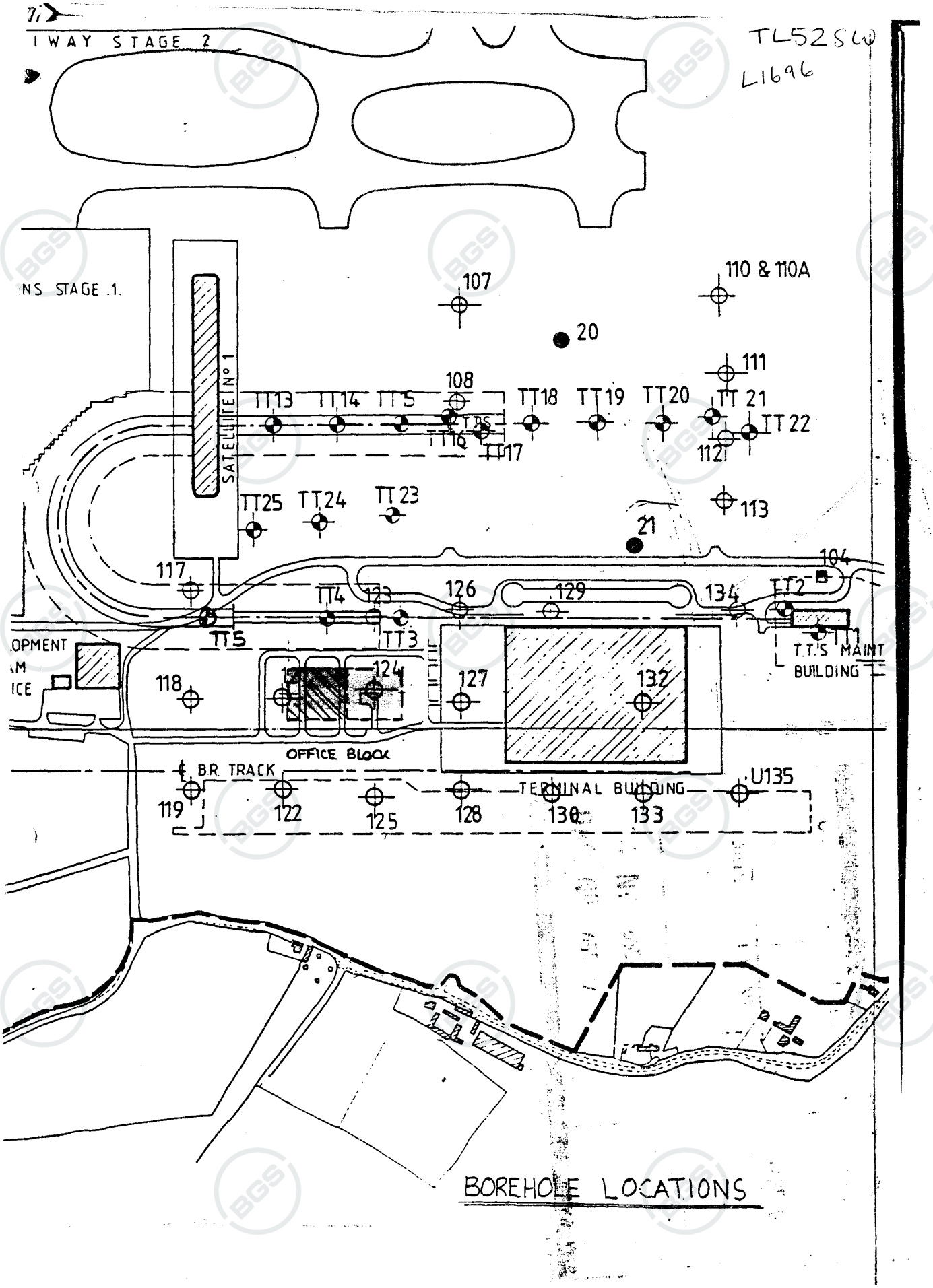
Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend
		9.90	10.00 - 10.45	26	U102		10.00	93.90	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
			10.45 - 10.60	27	D					
		9.90	10.75 - 11.05	28	S(26)					
		11.40	11.50 - 11.95	29	U102					
			11.95 - 12.10	30	D					
		11.40	12.25 - 12.55	31	S(31)					
			12.75 - 13.00	32	B					
		12.90	13.00 - 13.45	33	U102					
			13.45 - 13.60	34	D					
		12.90	13.75 - 14.05	35	S(29)					
		14.40	14.50 - 14.95	36	U102					
			14.95 - 15.10	37	D					
		14.40	15.25 - 15.55	38	S(39)					
			15.75 - 16.00	39	B					
		14.40	16.00 - 16.45	40	U102					
			16.45 - 16.60	41	D					
		14.40	16.75 - 17.05	42	S(40)					
(17.10m)	DRY	17.10								
17.3.83.	DRY	17.10					17.30	86.60	Firm brown very sandy CLAY with fine to medium flint gravel.	
			17.40 - 17.45	43	D					
		17.10	17.50 - 17.95	44	U102		17.70	86.20		
			17.95 - 18.10	45	D				Very stiff dark brown fissured silty CLAY with dark grey and brown silt partings.	
		17.10	18.25 - 18.55	46	S(39)				(LONDON CLAY).	
			18.75 - 18.95	47	B					
		17.10	18.95 - 19.40	48	U102					
			19.40 - 19.55	49	D					
		17.10	19.70 - 20.00	50	S(44)					
(20.0m)	DRY	17.10					20.00	83.90		

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks: BOREHOLE COMPLETED.

GROUND

BGS ID: 18471832 : BGS Reference: TL52SE182
EPSG: 27700 : 555510,223570



Record of Borehole No. 124

SHEET 1 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.40m O.D.

Diameter / 200mm to 12.80m, 150mm to 23.00m

Casing / 200mm to 12.80m, 150mm to 21.80m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata
9.3.83.							0.25	105.15	TOPSOIL
			0.40 - 0.50	1	D		0.65	104.75	Firm yellowish brown sandy CLAY.
			0.75 - 1.00	2	B				Stiff grey mottled brown silty CLAY with fine to medium chalk gravel.
		-	1.00 - 1.45	3	U102				
			1.45 - 1.60	4	D				(GLACIAL TILL)
		-	1.75 - 2.15	5	S(20)				
			2.25 - 2.50	6	B				
		2.40	2.50 - 2.95	8	U102				
			2.95 - 3.10	8	D				
		2.40	3.25 - 3.55	9	S(23)				
(3.60m)	DRY	3.60							
10.3.83.	DRY	3.60							
		3.60	4.00 - 4.45	10	U102				
			4.45 - 4.60	11	D		4.45	100.95	..... Becoming greyish brown.
		3.60	4.75 - 5.05	12	S(26)				
			5.25 - 5.50	13	B		5.15	100.25	
		3.60	5.50 - 5.95	14	U102				Stiff to very stiff grey very silty CLAY with fine to coarse chalk and flint gravel.
			5.95 - 6.10	15	D				99.00
		3.60	6.25 - 6.55	16	S(27)				
			6.75 - 7.00	17	B				
		3.60	7.00 - 7.45	18	U102				
			7.45 - 7.60	19	D				
		3.60	7.75 - 8.05	20	S(35)				
		3.60	8.50 - 8.95	21	U102				
			8.95 - 9.10	22	D				
	▽ 9.35	3.60	9.25 - 9.55	23	S(28)				
			9.35	32	W				
			9.75 - 10.00	24	B		10.00	95.40	

/continued...

Key

U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

1. Water struck at 12.80m, rose to 9.35m in 20 minutes, and sealed by casing at 14.40m.
2. Water seepage into borehole over weekend at 18.60m.
3. Water sample at 9.35m taken on 11.3.83.

GROUND

Record of Borehole No. 124

SHEET 2 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.40m O.D. Diameter / 200mm to 12.80m, 150mm to 23.00m Casing / 200mm to 12.80m, 150mm to 21.80m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata
		3.60	10.00 - 10.45	25	U102		10.00	95.40	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.
			10.45 - 10.60	26	D				
		3.60	10.75 - 11.05	27	S(26)				
(11.10m)	DRY	3.60							
11.3.83.	DRY	3.60	11.25 - 11.50	28	B				
		3.60	11.50 - 11.95	29	U102				
			11.95 - 12.10	30	D				
		3.60	12.25 - 12.55	31	S(23)				
	▼12.80								
		12.95	13.00 - 13.45	33	U102				
			13.45 - 13.60	34	D				
		12.95	13.75 - 14.05	35	S(21)				
			14.25 - 14.50	36	B				
	14.40 Sealed	14.40	14.50 - 14.95	37	U102				
			14.95 - 15.10	38	D				
		14.40	15.25 - 15.55	38	S(29)				
		15.90	16.00 - 16.45	40	U102				
			16.45 - 16.60	41	D				
		15.90	16.75 - 17.05	42	S(31)				
			17.25 - 17.50	43	B				
		17.40	17.50 - 17.95	44	U102				
			17.95 - 18.10	45	D		17.95	87.45	Becoming very stiff.
		17.40	18.25 - 18.55	46	S(34)				
(18.60m)	DRY	18.60							
14.3.83.	10.60	18.60							
		18.95	19.00 - 19.45	47	U102				
			19.45 - 19.60	48	D		19.45	85.95	Becoming dark grey.
		18.95	19.75 - 20.05	49	S(38)		19.95	85.45	

See Sheet 3.

/continued.....

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
⧗ .. groundwater encountered

Remarks

GROUND

Record of Borehole No. 124

SHEET 3 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.40m O.D.

Diameter / 200mm to 12.80m, 150mm to 23.00m

Casing / 200mm to 12.80m, 150mm to 21.80m

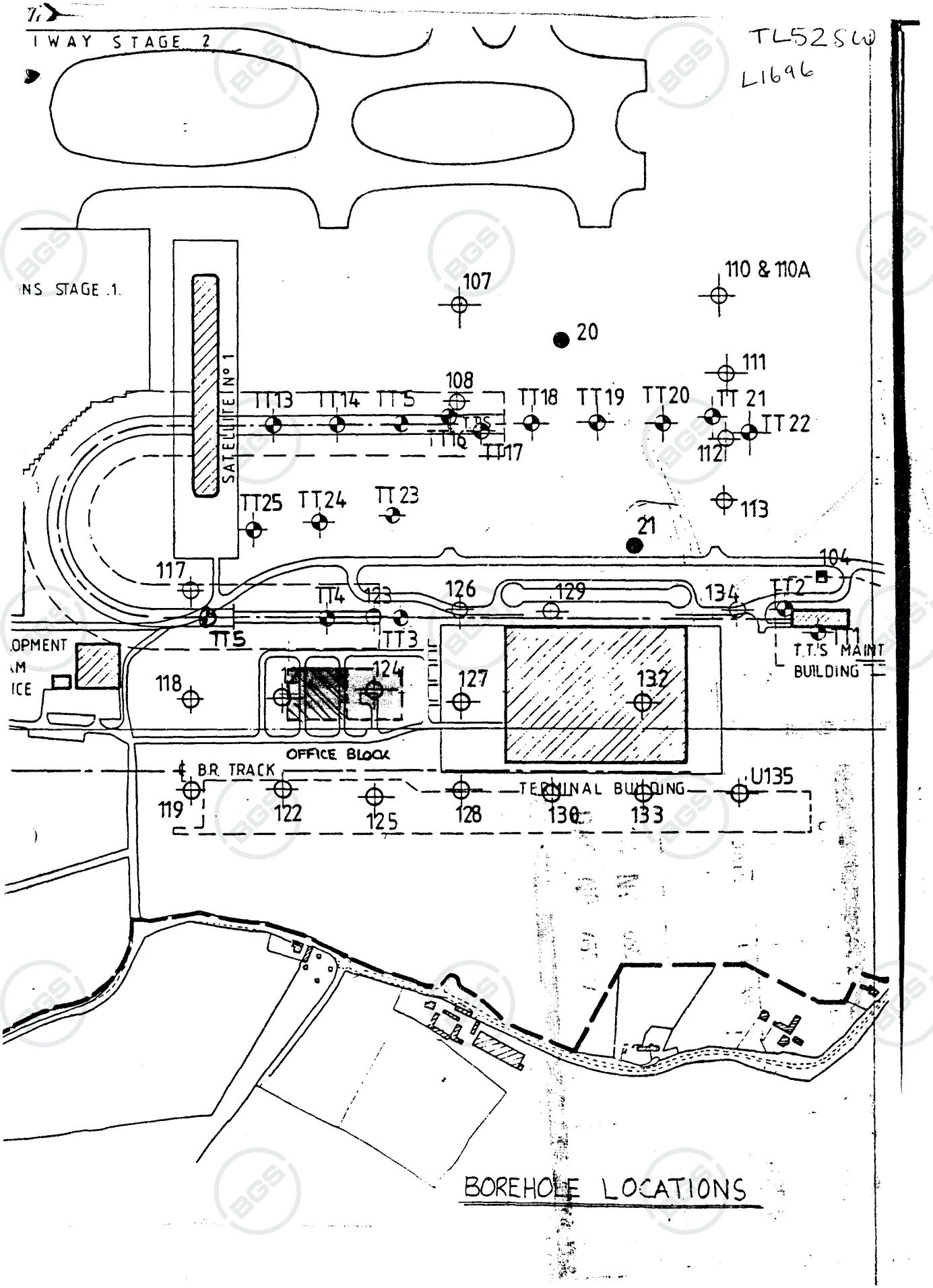
Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
			20.25 - 20.30	50	D		20.00	85.40	Stiff brown sandy CLAY with fine to medium flint and a little chalk gravel.	
		20.40	20.45 - 20.90	51	U102					
			20.90 - 21.05	52	D					
		20.40	21.20 - 21.50	53	S(37)		21.05	84.35	..... Becoming firm and very sandy.	
			21.80 - 21.85	54	D		21.75	83.65		
		21.80	21.95 - 22.40	55	U102				Stiff dark brown fissured silty CLAY.	
			22.40 - 22.55	56	D				(LONDON CLAY).	
		21.80	22.70 - 23.00	57	S(36)					
(23.00m)	21.25	21.80					23.00	82.40		
									BOREHOLE COMPLETED.	

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
⧗ .. groundwater encountered

Remarks

GROUND

BGS ID: 18471833 : BGS Reference: TL52SE183
EPSG: 27700 : 555570,223510



Record of Borehole No. 126

SHEET 1 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.55m O.D.

Diameter / 200mm to 14.25m, 150mm to 21.00m

Casing / 200mm to 14.25m, 150mm to 19.80m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend
1.3.83.									TOPSOIL	
			0.45 - 0.45	1	D		0.35	105.20	Firm to stiff yellowish brown sandy CLAY with traces of rootlets to 0.70m	
			0.70 - 1.00	2	B				With fine to coarse chalk and flint gravel below 0.60m.	
		-	1.00 - 1.45	3	U102					
			1.45 - 1.60	4	D		1.45	104.10	..... becoming stiff and mottled grey below 1.45m.	
		-	1.75 - 2.05	5	S(21)				(GLACIAL TILL)	
			2.30 - 2.50	6	B					
		2.40	2.50 - 2.95	7	U102					
			2.95 - 3.10	8	D					
		2.40	3.25 - 3.55	9	S(27)					
		3.90	4.00 - 4.45	10	U102					
			4.45 - 4.60	11	D		4.45	101.10	..... becoming greyish brown	
		3.90	4.75 - 5.05	12	S(23)		4.80	100.75		
			5.25 - 5.50	13	B				Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
		5.40	5.50 - 5.95	14	U102					
			5.95 - 6.10	15	D					
		5.40	6.25 - 6.55	16	S(25)					
(6.60m)	DRY	6.60								
2.3.83.	DRY	6.60								
		6.60	7.00 - 7.45	17	U102					
			7.45 - 7.60	18	D					
		6.60	7.75 - 8.05		S(19)					
			7.75 - 8.05	19	B					
	▽ 8.30		8.25 - 8.50	20	B					
			8.30	40	W					
		6.60	8.50 - 8.95	21	U102					
			8.95 - 9.10	22	D					
		6.60	9.25 - 9.55	23	S(26)					
	▼ 9.80 Seepage						10.00	95.55		

/continued.....

Key

U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

1. Seepage at 9.80m.
2. Water struck at 16.45m, rose to 8.30m in 20 minutes.

GROUND ENGINEERING

Record of Borehole No. 126

SHEET 2 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.55m O.D.

Diameter / 200mm to 14.25m, 150mm to 21.00m

Casing / 200mm to 14.25m, 150mm to 19.80m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
		6.60	10.00 - 10.45	24	U102		10.00	95.55	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
			10.45 - 10.60	25	D					
		6.60	10.75 - 11.05	26	S(26)					
			11.25 - 11.50	27	B					
		6.60	11.50 - 11.95	28	U102					
			11.95 - 12.10	29	D					
		6.60	12.25 - 12.55	30	S(30)					
		6.60	13.00 - 13.45	31	U102					
			13.45 - 13.60	32	D					
		6.60	13.75 - 14.05	33	S(37)					
			14.25 - 14.50	34	B					
		14.40	14.50 - 14.95	35	U102					
			14.95 - 15.10	36	D					
		14.40	15.25 - 15.55	37	S(39)					
		14.40	16.00 - 16.45	38	U102					
	▼16.45		16.45 - 16.60	39	D		16.45	89.10		
							16.55	89.00	Grey silty SAND.	
		16.75	16.90 - 17.20		C(16)				Medium dense fine to coarse brown SAND with fine, medium and a little coarse flint gravel.	
17.25	8.45	17.25	16.90 - 17.20	41	B				(KESGRAVE BEDS?).	
3.3.83.	8.10	17.25								
			17.65 - 17.95		C(19)					
			17.65 - 17.95	42	B					
			18.40 - 18.70		C(17)				Stiff brown mottled bluish grey sandy CLAY with fine to medium gravel.	
			18.40 - 18.70	43	B		18.60	86.95		
			18.80 - 18.85	44	D		18.90	86.65		
			19.15 - 19.45		C(36)				Dense fine to coarse subangular to subrounded flint GRAVEL with medium to coarse brown sand.	
			19.15 - 19.45	45	B					
			19.75 - 19.80	46	D		19.60	85.95	(KESGRAVE BEDS).	
			19.95 - 20.40	47	U102				Stiff reddish brown silty CLAY.	

Key

U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

/continued.....

GROUND ENGINEERING

Record of Borehole No. 126

SHEET 3 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 105.55m O.D.

Diameter / 200mm to 14.25m
1500mm to 21.00m

Casing / 200mm to 14.25m
150mm to 19.80m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
			20.40 - 20.55	48	D		20.50	85.05	Stiff reddish brown silty CLAY. (LONDON CLAY).	
			20.70 - 21.00	49	S(42)				Very stiff brown fissured silty CLAY with brown and dark grey silt partings	
(21.00m)	12.55	19.80					21.00	84.55		
									BOREHOLE COMPLETED.	

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
⧗.. groundwater encountered

Remarks

GROUND ENGINEERING

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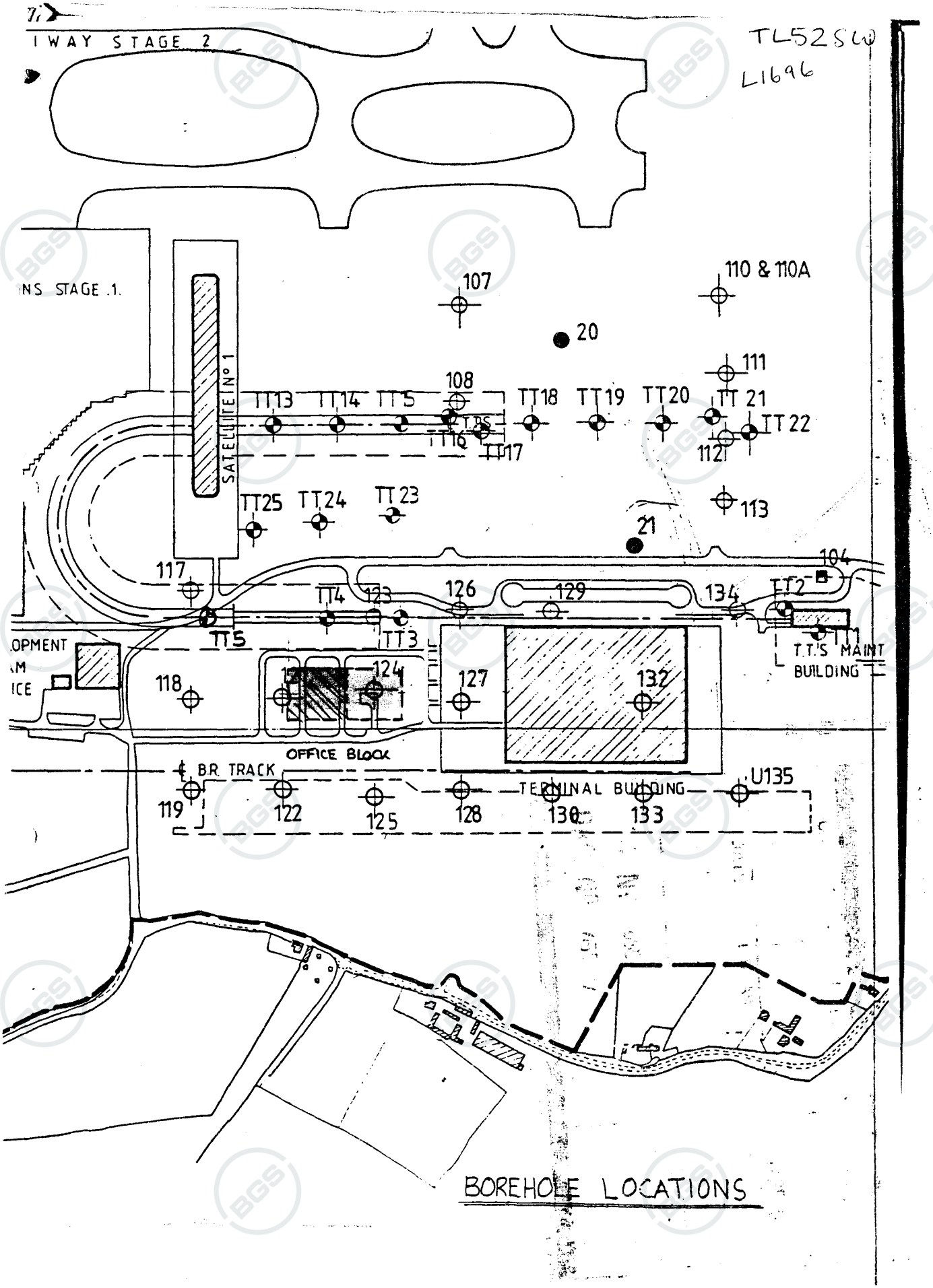
EPSG: 27700 : 555560,223640



Record of Borehole No. 127

SHEET 1 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D. Diameter / 200mm to 11.50m, 150mm to 22.00m Casing / 200mm to 11.50m, 150mm to 20.60m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
4.3.83.			0.40 - 0.45	1	D		0.35	106.60	TOPSOIL	
			0.70 - 1.00	2	B		0.60	106.35	Firm yellowish brown sandy CLAY with a little fine to medium chalk gravel.	
		-	1.00 - 1.45	3	U102					
			1.45 - 1.60	4	D				Stiff to very stiff yellowish brown mottled grey silty CLAY with fine to medium chalk gravel.	
		-	1.75 - 2.05	5	S(27)				(GLACIAL TILL)	
(2.10m)	DRY	1.40								
7.3.83.	DRY	1.40	2.25 - 2.50	6	B					
		1.40	2.50 - 2.95	7	U102					
			2.95 - 3.10	8	D		2.95	104.00		
		1.40	3.25 - 3.55	9	S(23)				Very stiff greyish brown silty CLAY with fine to coarse chalk and flint gravel.	
		1.40	4.00 - 4.45	10	U102					
			4.45 - 4.60	11	D					
		1.40	4.75 - 5.05	12	S(18)					
			5.25 - 5.50	13	B					
	▼ 5.40 Seepage	1.40	5.50 - 5.95	14	U102					
			5.95 - 6.10	15	D					
		1.40	6.25 - 6.55	16	S(19)					
			6.75 - 7.00	17	B		6.70	100.25		
	6.90 Sealed	6.90	7.00 - 7.45	18	U102				Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
			7.45 - 7.60	19	D					
		6.90	7.75 - 8.05	20	S(22)					
		6.90	8.60 - 8.95	21	U102					
			8.95 - 9.10	22	D					
		6.90	9.25 - 9.55	23	S(23)					
			9.75 - 10.00	24	B		10.00	96.95		

/continued....

Key
- U.... undisturbed 102mm diameter sample
- D.... disturbed jar sample
- B.... disturbed bulk sample
- W.... water sample
- S( ). standard penetration test
- C( ). cone penetration test
- (33).. number of blows ('N' value)
- ▼.. groundwater encountered

Remarks
1. Seepage at 5.40m, sealed by casing at 6.90m.
2. Water struck at 11.80m, rose to 10.55m in 20 minutes, sealed by casing at 12.65m.
3. Water struck at 18.80m, rose to 11.30m in 20 minutes.
4. Water sample at 11.30m taken on 8.3.83.
5. Piezometer installed at 17.20m with sand cell from 17.50 to 16.50m.

GROUND ENGINEERING

Record of Borehole No. 127

SHEET 2 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D. Diameter / 200mm to 11.50m, 150mm to 22.0m Casing / 200mm to 11.50m, 150mm to 20.60m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Legend
		6.90	10.00 - 10.45	25	U102		10.00	96.95	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
			10.45 - 10.60	26	D					
	▽ 10.55		10.55	31	W					
		6.90	10.75 - 11.05	27	S(34)					
	▽ 11.30		11.30	46	W					
		6.90	11.50 - 11.95	28	U102					
	▼ 11.80		11.95 - 12.10	29	D		11.80	95.15	Firm grey sandy CLAY with fine to coarse chalk gravel.	
		6.90	12.25 - 12.55	30	S(20)		12.20	94.75	Stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
12.65m)	DRY	12.65								
8.3.83.	12.55	12.65	12.75 - 13.00	32	B					
		12.65	13.00 - 13.45	33	U102					
			13.45 - 13.60	34	D					
		12.65	13.75 - 14.05	35	S(22)					
		12.65	14.50 - 14.95	36	U102					
			14.95 - 15.10	37	D		15.10	91.85	Very stiff dark grey very silty CLAY with fine to coarse chalk gravel.	
		12.65	15.25 - 15.55	38	S(24)					
			15.75 - 16.00	39	B					
		12.65	16.00 - 16.45	40	U102					
			16.45 - 16.60	41	D					
		12.65	16.75 - 17.05	42	S(30)					
		12.65	17.50 - 17.95	43	U102					
			17.95 - 18.10	44	D					
		12.65	18.25 - 18.55	45	S(35)					
	▼ 18.80						18.80	88.15		
		19.00	19.15 - 19.45		C(24)				Medium dense fine to coarse sub-rounded to sub-angular flint GRAVEL and fine to coarse brown sand. (KESGRAVE BEDS). Sand content increasing with depth.	
			19.15 - 19.45	47	B					
		19.75	19.90 - 20.20		C(23)		20.00	86.95		

/continued.....

Key
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). standard penetration test
C( ). cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks

GROUND ENGINEERING

Record of Borehole No. 127

SHEET 3 of 3

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D.

Diameter / 200mm to 11.50m, 150mm to 22.0m

Casing / 200mm to 11.50m, 150mm to 20.60m

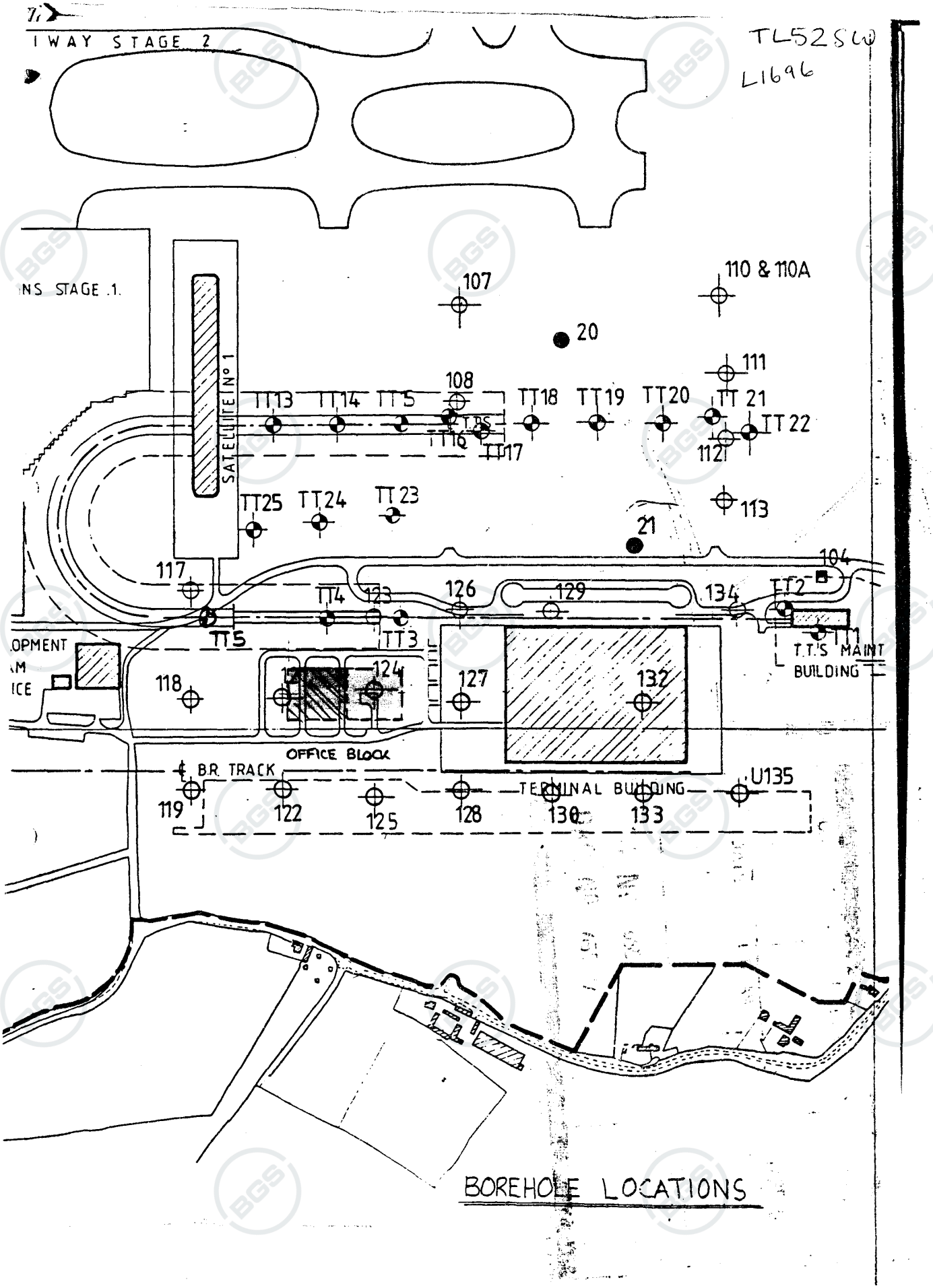
Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
			19.90 - 20.20	48	B		20.00	86.95	.....continued from sheet 2.	
			20.50 - 20.80	49	B		20.45	86.50		
			20.90 - 20.95	50	D		20.85	86.10	Stiff reddish brown fissured silty CLAY. (LONDON CLAY).	
		20.60	20.95 - 21.40	51	U102					
			21.40 - 21.55	52	D				Stiff dark brown fissured silty CLAY with dark grey and brown silt partings.	
			21.70 - 22.00	53	S(45)					
(22.0m)	15.70	20.60					22.00	84.95		
									BOREHOLE COMPLETED.	

Key
U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

GROUND

BGS ID: 18471838 : BGS Reference: TL52SE186
EPSG: 27700 : 555640,223580



Location STANSTED TERMINAL

SHEET 1 of 3

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D.

Diameter / 200mm to 10.00m
150mm to 22.65m

Casing / 150mm to 21.70m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
15.2.83.			0.30 - 0.35	1	D		0.30	106.65	TOP SOIL	
		-	1.00 - 1.45	2	U102				Firm yellow brown sandy CLAY with fine to medium chalk gravel. (GLACIAL TILL)	
			1.45 - 1.50	3	D		1.45	105.50	..... becoming firm to stiff and mottled with grey.	
		-	1.65 - 1.95	4	S(21)					
			2.00 - 2.30	5	B		2.00	104.95	Stiff brown mottled grey silty CLAY with fine to medium and occasional coarse chalk and flint gravel.	
		-	2.50 - 2.95	6	U102					
			2.95 - 3.00	7	D					
		-	3.15 - 3.45	8	S(27)					
			4.00 - 4.30	12	B					
		-	4.00 - 4.45	9	U102					
			4.45 - 4.50	10	D					
		-	4.65 - 4.95	11	S(26)					
		-	5.50 - 5.95	13	U102					
			5.95 - 6.00	14	D		5.95	101.00	..... becoming greyish brown.	
			6.00 - 6.30	16	B					
		-	6.15 - 6.45	15	S(24)					
			6.70 - 6.75	17	D		6.70	100.25	Stiff to very stiff grey very silty CLAY with fine to medium and occasional coarse chalk and flint gravel.	
		-	7.00 - 7.45	18	U102					
			7.45 - 7.50	19	D					
		-	7.65 - 7.95	20	S(22)					
			8.00 - 8.30	21	B					
		-	8.50 - 8.95	22	U102					
			8.95 - 9.00	23	D					
		-	9.15 - 9.45	24	S(45)					
(10.00m)	DRY	-					10.00	96.95		

/continued....

Key

U.... undisturbed 102mm diameter sample
D.... disturbed jar sample
B.... disturbed bulk sample
W.... water sample
S( ). standard penetration test
C( ). cone penetration test
(33).. number of blows ('N' value)
▼.. groundwater encountered

Remarks

1. Water seepage into borehole overnight at 10.00m, rose to 9.80m, sealed by casing at 10.50m.
2. Water struck at 12.50m, rose to 12.20m in 20 minutes. Sealed by casing at 15.00m.
3. Water struck again at 18.90m, rose to 13.80m in 20 minutes. Sealed by casing at 21.70m.

GROUND ENGINEERING

3035

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D.

Diameter / 200mm to 10.00m
150mm to 22.65m

Casing / 150mm to 21.70m

Daily Progress	Ground water levels	Depth of casing	Samples: Depth	No.	Type	Scale	Strata: Depth	Reduced level	Description of strata	Diagram
16.2.83.	9.80	-	10.00 - 10.30	28	B		10.00	96.95	Stiff to very stiff grey very silty CLAY with fine to coarse chalk and flint gravel.	
		-	10.00 - 10.45	25	U102					
			10.45 - 10.50	26	D					
		-	10.65 - 10.95	27	S(44)					
		10.50	11.50 - 11.95	29	U102					
			11.95 - 12.00	30	D					
			12.00 - 12.30	32	B					
	▽ 12.20	10.50	12.15 - 12.45	31	S(28)					
	▼ 12.50									
		10.50	13.00 - 13.45	33	U102					
			13/45 - 13.50	34	D					
		10.50	13.65 - 13.95	35	S(33)					
	▽ 13.80		14.00 - 14.30	36	B					
		10.50	14.50 - 14.95	37	U102					
			14.95 - 15.00	38	D					
	15.00 sealed	10.50	15.15 - 15.45	39	S(38)					
			16.00 - 16.30	43	B					
		15.00	16.00 - 16.45	40	U102					
			16.45 - 16.50	41	D					
		15.00	16.65 - 16.95	42	S(42)					
		15.00	17.50 - 17.95	44	U102					
			17.95 - 18.00	45	D					
			18.00 - 18.30	47	B					
		15.00	18.15 - 18.45	46	S(44)					
			18.90	57	W					
(18.90m)	▼ 18.90	18.00	18.90 - 19.95	48	D		18.90	88.05		
17.2.83.	8.10	18.00	19.15 - 19.45		C(49)				Dense fine to coarse rounded to sub-angular flint GRAVEL with grey medium to coarse silty sand. (KESGRAVE BEDS).	
			19.15 - 19.45	49	B					
		19.70	19.90 - 20.20		C(48)		20.00	86.95		

Key
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). standard penetration test
C( ). cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks

/continued.....

GROUND ENGINEERING

3035

Location STANSTED TERMINAL

Client BRITISH AIRPORTS AUTHORITY

Type of boring PERCUSSION

Job No. 11310221 Ground level 106.95m O.D.

Diameter / 200mm to 10.00m
150mm to 22.65m

Casing / 150mm to 21.70m

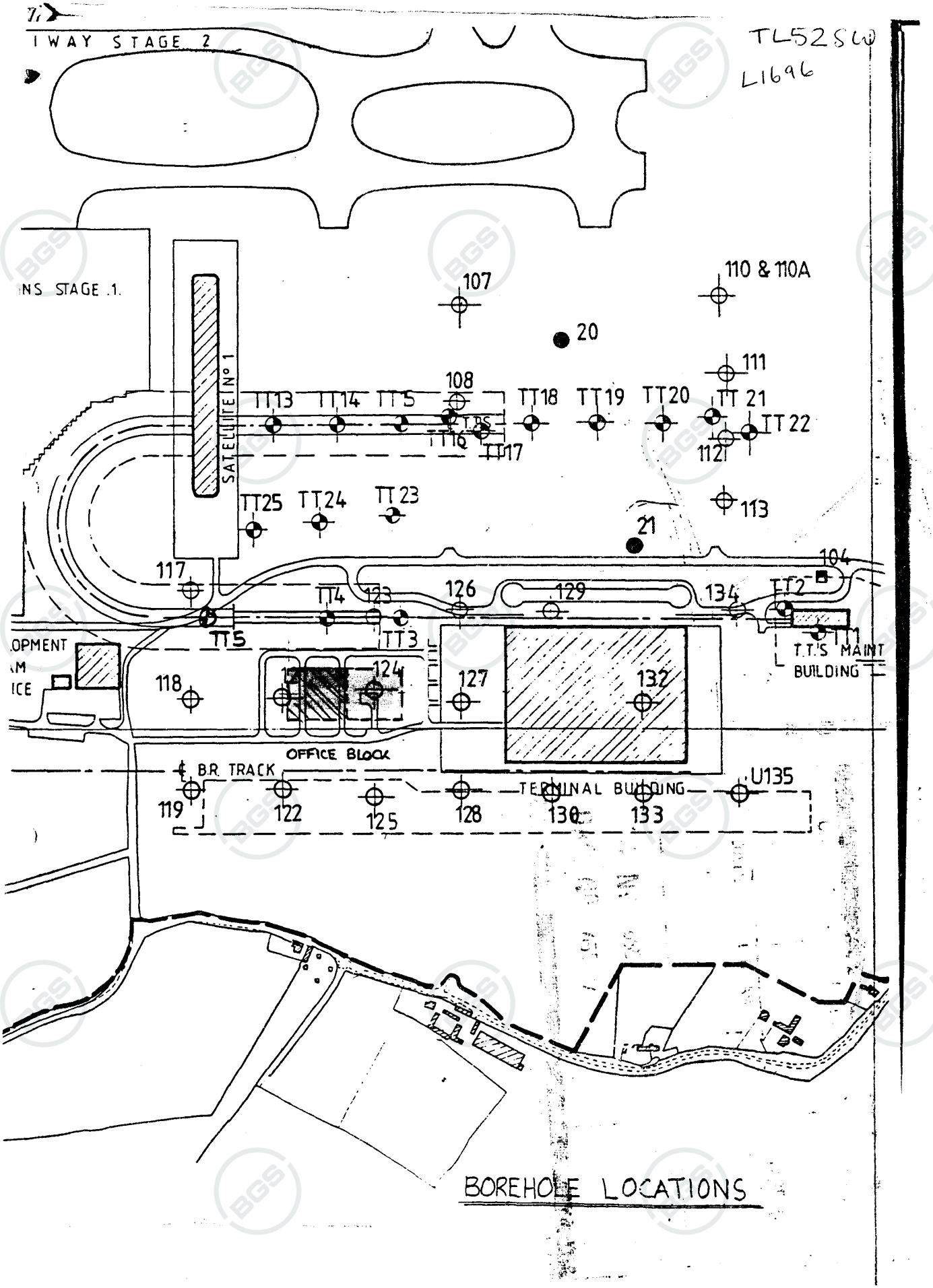
Daily Progress	Ground water levels	Depth of casing	Samples: Depth	Samples: No.	Samples: Type	Scale	Strata: Depth	Strata: Reduced level	Description of strata	Legend
			19.90 - 20.20	50	B		20.00	86.95	Dense fine to coarse rounded to sub-angular flint GRAVEL with grey medium to coarse silty sand.	
		20.50	20.65 - 20.95		C(39)		20.50	86.45		
			20.65 - 20.95	51	B				Dense becoming medium dense medium to coarse brown SAND with a little fine to medium flint gravel.	
			21.40 - 21.45	53	D		21.40	85.55	Stiff reddish brown silty CLAY with a little fine to medium gravel.	
		21.20	21.40 - 21.70		C(23)					
	21.70		21.40 - 21.70	52	B		21.70	85.25		
	Sealed	21.70	21.70 - 22.15	54	U102				(LONDON CLAY).	
			22.15 - 22.20	55	D				Stiff dark grey silty CLAY with grey silt partings.	
		21.70	22.35 - 22.65	56	S(53)					
(22.65m)	DRY	21.70					22.65	84.30		
									BOREHOLE COMPLETED.	

Key
U. . . . undisturbed 102mm diameter sample
D. . . . disturbed jar sample
B. . . . disturbed bulk sample
W. . . . water sample
S( ). standard penetration test
C( ). cone penetration test
(33). . number of blows ('N' value)
▼ . . groundwater encountered

Remarks

GROUND ENGINEERING

BGS ID: 18471839 : BGS Reference: TL52SE187
EPSG: 27700 : 555710,223510



E. Reporting author qualifications and LCRM checklist

E.1 Report author professional qualifications

Initials	Role	Job title	Academic and professional affiliations/qualifications
SB	Originator	Graduate Contaminated Land Consultant	BSc, MSc
MS	Checker	Contaminated Land Consultant	BSc, MSc
DG	Approver	Technical Director – Contaminated Land	BSc, MSc, MIEnvSc, CEnv, SILC, FGS

E.2 Reporting checklist

The following checklist has been generated from the guidance given in LCRM on the report requirements for the Desk Study.

Item	Relevant section of this report
Site ownership and current status	Table 2.1 Section 2.1
Location, national grid reference	Table 2.1 in Section 2.1
Size of the site – include any plans and maps	Table 2.1 in Section 2.1
History and general description of the site	Section 2.1 and Section 2.3
Potential for unexploded ordnance	Section 2.2
Contact details of relevant organisations	Title page of the document for client and consultant
Pollution incidents, spills, accidents or regulatory actions	Table 2.2 in Section 2.2
Current or past permits, licences or authorisations	Table 2.2 in Section 2.2 where available
Proposed future changes to land use, such as planning applications	Section 1.1
Previous investigations or remediation	Section 2.5
Chemical or biological information from for example, previous site monitoring reports	Section 2.5
Natural background contamination information, such as for radon gas, if available	Table 2.2 in Section 2.2
Audit reports that may have been done	None available to review
Location of historical landfill sites	Not found within 500m
Details of any reviews of coal or other mining related contamination hazards – current or historic	None found
Presence or proximity of sensitive ecological receptors such as Special Protection Areas – to find out, you can use Natural England's MagicMap	Table 2.2 in Section 2.2
Location of any protected areas of countryside	None found within 1km
Presence of any archaeological or heritage sites such as scheduled ancient monuments	Section 2.3.2
Details on other specific Part 2A receptors such as property in the form of crops, livestock, buildings	Not relevant
Presence of made ground, drift deposits, bedrock	Section 3.1
Geological features such as faults	Table 2.2 in Section 2.2
Presence of groundwater aquifers – unconfined, confined or a mixture of both	Table 2.2 in Section 2.2
Aquifer type – principal, secondary or unproductive strata	Table 2.2. in Section 2.2
Sensitive groundwater locations such as source protection zones or safeguard zones	None identified within 500m
The vulnerability of the groundwater to pollution	Table 2.2 in Section 2.2
The likelihood of perched groundwater	Section 2.4.1 and Section 3.3

Item	Relevant section of this report
Any abstraction points or wells on or close to the site – you must include private water supplies	Table 2.2 in Section 2.2
The presence of and proximity to other controlled waters such as surface water and coastal	Table 2.2 in Section 2.2
Any available water quality information	None available to review
Information on characteristics such as the likely groundwater flow direction	Table 2.2 in Section 2.2 and Section 5.2.5
Consultation with regulators	None completed
Details of any uncertainties, data gaps and limitations	Section 1.4
Identify potential contaminant linkages	Table 5.2
Conceptual site model	Appendix B
Qualitative risk assessment and methodology	Appendix C
Indication of potentially unacceptable risks	Table 5.2 and Section 6
Conclusions and justification of proposed next steps.	Section 6.1.2 and Section 6.2.2, respectively
Factual details of the investigation and monitoring results	Appendix F for off-site GI

F. Factual Report of Past GI offsite

STANSTED TERMINAL 2 (ST2) GROUND INVESTIGATION

GROUND INVESTIGATION REPORT (FACTUAL ACCOUNT OF FIELDWORK, MONITORING AND LABORATORY TESTING)

Report No D2027-22

April 2023

Issue No 2

Carried out for:
Marriott Civils
Project Office
Long Border Rd
Stansted, CM24 1RL

Engineer / Investigation Supervisor:
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SOCOTEC

Report No D2027-22

ISSUE No	DATE	STATUS	PREPARED BY	CHECKED BY	APPROVED BY
1	August 2022	Interim Draft report	Vijay Jeyanthan BEng (Hons) GMICE [redacted]	David Beskeen BSc FGS [redacted]	Mi Martin BSc MSc MIScT CGeol EurGeol FGS Registered Ground Engineering Specialist [redacted]
2	November 2022	Draft report	Vijay Jeyanthan BEng (Hons) GMICE [redacted]	David Beskeen BSc FGS [redacted]	David Beskeen BSc FGS [redacted]
Appendix D (monitoring), Appendix E (geotechnical lab testing) and Appendix F (geoenvironmental lab testing) updated					
1	December 2022	Final report	Vijay Jeyanthan BEng (Hons) GMICE [redacted]	David Beskeen BSc FGS [redacted]	David Beskeen BSc FGS [redacted]
2	April 2023	Final report	Vijay Jeyanthan BEng (Hons) GMICE [redacted]	David Beskeen BSc FGS [redacted]	David Beskeen BSc FGS [redacted]
Report text, Appendix D (monitoring), Appendix E (geotechnical lab testing) updated					

SOCOTEC UK Limited was formerly known as Environmental Scientifics Group Limited. The Certificate of Incorporation on Change of Name was filed on 16 October 2017.

CONTENTS

1 INTRODUCTION

SOCOTEC UK Limited (SOCOTEC) was commissioned in May 2022 by Marriott Civils, with Mott MacDonald Limited (MML) as the designated investigation supervisor, to carry out a ground investigation at Stansted Airport to inform the design of a proposed second terminal building and associated pier.

The scope of the investigation was specified by MML and comprised boreholes, trial pits, field-testing, monitoring, laboratory testing and reporting. The fieldwork was carried out between 13 June 2022 and 26 July 2022. An additional visit was carried out on 07 September 2022 in order to install the groundwater and gas monitoring instrumentation which was originally omitted from exploratory holes DS03, DS05 and DS13.

The investigation was performed in accordance with the contract specification (document reference STN-MMD-100106141-GEO-03), and the general requirements of BS 5930:2015+A1 (2020), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2021) and other relevant related standards identified.

This report presents a description of the ground investigation work carried out together with the factual records of the fieldwork, monitoring and laboratory testing. It comprises the Factual Account section of a Ground Investigation Report (GIR), as defined in the UK Specification for Ground Investigation draft Third Edition (2022), also identified as the Factual Report section in BS 5930:2015+A1 (2020).

The information is also presented in digital data format as defined in AGS 4.0.4 (2017).

2 SITE SETTING

2.1 Location and Description

Stansted Airport is centred approximately 6 km north east of the town of Bishop's Stortford. The area of investigation is located within the north-east of the airport and is centred at National Grid reference (NGR) TL559241; see Site Location Plan in Appendix A.

The MML Ground Investigation Specification (document reference STN-MMD-100106141-GEO-03) notes that the overall site boundary is composed of all potential terminal options at the time of writing.

The entirety of the site is airside and therefore security checks are required in order to access site. Access to the site can be found immediately north of the multistorey car park adjacent to the site area.

Much of the northern portion of the site was utilised as a construction yard where plant and machinery were stored which were used for the development of other areas of the airport. A large substation is present within the construction yard, as is a large bund, located in the northern extent of the site, which is formed of gravelly sand with some tarmacadam boulders. The bund was likely produced as a result of excavation of the Terminal Track System (TTS) tunnel access which is located within the construction yard at approximately NGR TL557242. The dimensions of the tunnel are approximately 2m high by 6m wide and includes two tunnel entrances with the tunnel running off site to the southwest. The depth of the tunnel invert increases sharply from approximately 2mBGL to 4mBGL within the site boundary. It has been assumed that the TTS tunnel will be decommissioned and backfilled prior to works on site.

The construction yard surface is composed of gravelly sand material which has been compacted by plant machinery. There are occasional areas of hardstanding cover across the boundaries of the site, and in the area of a former site office in the southern areas of the construction yard. The construction yard area has up to twenty access covers for various services including fibre optic and broadband, cables aviation fuel lines and high voltage cables.

The south-eastern area of the site comprises the airside access road, adjacent to which an airside access point, a communications tower and areas of soft landscaping are located. It is assumed that the security fence along the northern side of Gorefield Road marks the boundary between airside and landside.

The north-eastern extent of the site is comprised of high-strength slabs of concrete, used for the aircraft stand areas.

The site is relatively flat with ground levels between 104mAOD and 105mAOD, locally being higher in the vicinity of the large bund. A very shallow slope is present in the southern areas of the site, where a slight gradient is noticeable on the road with levels reducing to approximately 103mAOD.

2.2 Published Geology

The MML Ground Investigation Specification notes that BGS 1:50,000 scale mapping does not indicate that Artificial Ground is present on site. This is likely due to BGS 1:50,000 scale mapping not outlining any Artificial Ground deposits if they are less than 2.5 m in thickness. However, historical ground investigation was noted to encounter Made Ground immediately to the southeast of the site. The material is predominantly tarmac, placed during pavement construction, expected to overly the reworked silty clay of the underlying Lowestoft Formation (formerly Till). Mounds of reworked deposits were also noted during a site walkover.

The Lowestoft Formation is shown on BGS 1:50,000 scale mapping to underlay the entire site. The unit is a glacial deposit which was formed during the Quaternary Period. The unit is a firm, mottled yellowish brown, slightly sandy silty clay with many pebbles of rounded chalk and some angular to subrounded flint with chalk and flint sand and could be up to 13 m thick. This material is also known as Boulder Clay on historical records and more recently as Diamicton.

Although not shown directly on BGS mapping, the Kesgrave Formation is likely to be encountered on site directly underlying the Lowestoft Formation. The unit is a fluvial deposit formed during the Pleistocene Epoch and consists of medium dense, greyish brown, fine to coarse grained sands, pebbly sands, and subordinate gravels. Pebbles in the gravel fraction largely comprise rounded to subangular flints. Due to being overlain by the glacially derived Lowestoft Formation, it is likely that the material may have been reworked by glacial meltwaters and as such some of the material regarded as Kesgrave Formation, may in fact be Glaciofluvial Deposits. The material could be up to 10 m in thickness.

BGS mapping indicates an area of Head Deposits approximately 1.2 km southeast of the site, suggesting that the material is unlikely to be encountered on site. However, historical ground investigation encountered a thin layer of Head Deposits (approximately 0.20 m to 0.50 m thick) overlying the Lowestoft Formation in the area immediately southeast of the site. The material is described as a firm greenish grey, friable, sandy silty clay with organic patches and odour.

BGS mapping indicates the entire site is underlain by the London Clay Formation. This unit is sedimentary bedrock formed approximately 47.8 to 59.2 million years ago in the Palaeogene Period in a local environment dominated by deep seas. Material typically comprises grey/olive/brown slightly

calcareous, silty clay, clayey silt with sandy beds at its base and top. London Clay generally weathers to a depth of 8-9 m, material weathers to an orange, brown colour due to oxidation of pyrite. Historical ground investigation indicates that the unit could be approximately 20 m in thickness.

Underling the London Clay Formation is the Lambeth Group. The unit is a sedimentary bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period in fluvial, estuarine, lagoonal or proximal marine environments. The material typically comprises vertically and laterally variable sequences mainly of clay (some silty or sandy); with some sands and gravels; minor limestones and lignite; and occasional sandstone and conglomerate. Historical ground investigation did not prove the thickness of the unit.

3 FIELDWORK

3.1 General

The exploratory hole and field test locations were set out from local featured by SOCOTEC and Marriott Civils and were agreed with MML. The positions were surveyed by SOCOTEC to National Grid and Ordnance Datum and the locations are shown on the Site Plan in Appendix A.

Inspection pits, for the purpose of service clearance, were carried out by Marriott Civils.

3.2 Exploratory Holes

The exploratory holes completed are listed in Table 1.

TABLE 1 SUMMARY OF EXPLORATORY HOLES

TYPE	QUANTITY	DEPTH RANGE (m)	REMARKS
Cable percussion boring	12	4.05 to 20.60	CP01 to CP11, RC02A
Dynamic sampling with rotary core follow-on	5	6.00 to 26.50	RC01, RC01A, RC02 to RC04. Holes originally specified as rotary core only
Dynamic sampling	20	2.30 to 5.45	DS01 to DS20
Trial pits	14	2.50 to 4.00	TP01 to TP14. Machine excavated

TYPE	QUANTITY	DEPTH RANGE (m)	REMARKS
Inspection pits	15	1.50	CPT01 to CPT15. Service clearance for cone penetration test locations

Exploratory holes RC01 to RC04 were specified to be carried out by rotary core drilling. In the absence of consultation with MML, SOCOTEC utilised dynamic sampling methods prior to commencing rotary coring in order to maximise sample recovery.

RC01A was carried out in order to maximise undisturbed core recovery after standard penetration tests (SPT) were undertaken within the top five metres of RC01.

RC02A was carried out by cable percussion drilling to a depth of 4.05 m in order to obtain undisturbed UT100 samples over the depth range that had been progressed by dynamic sampling in RC02. A cable percussion drilling rig was the only option available on site for obtaining undisturbed samples at the time of drilling RC02A.

Borehole CP06 was terminated at 11.45 m due to a loss of hole verticality. This meant that it was not possible to progress the casing in order to seal a water strike that was encountered at 10.30 m.

Dynamic sample hole DS01 was terminated at 2.30 m due to a buried obstruction that caused the hole to deviate. DS06 was terminated short of the scheduled depth due to wall instability that prevented progression of the hole and DS14 was terminated at 2.30 m due to the proximity of a suspected buried service.

Exploratory hole TP10 was terminated at 2.50 m due to water ingress.

The exploratory hole logs and split sample descriptions with accompanying photographs are presented in Appendix B. The logs include descriptions of the strata encountered together with details of the equipment and methods used, sampling and field-testing carried out, water depths and other field observations. Explanations of the terms and abbreviations used on the logs are given in the Key to Exploratory Hole Records in Appendix B, along with other explanatory information. The geological material descriptions are in accordance with BS 5930:2015+A1 (2020) following BS EN ISO 14688-1 (2018).

SPTs in the boreholes were carried out in accordance with BS EN ISO 22476-3+A1 (2011). The results are presented on the logs without any corrections to the measured blow-counts or derived N values. Energy ratio certificates for the relevant SPT hammers are included in Appendix B.

Geotechnical samples were transferred from site to the Wokingham office of SOCOTEC for temporary retention. Samples taken for geoenvironmental testing were transferred directly from site to the Eurofins Chemtest Limited environmental chemistry laboratory in Newmarket, Cambridgeshire.

Photographs of the inspection pits, trial pits, dynamic samples and rotary drilled cores are presented in Appendix G.

3.3 Field Testing

The field (in situ) testing carried out is listed in Table 2 and the results are presented in Appendix C.

TABLE 2 SUMMARY OF FIELD TESTS

TYPE	QUANTITY	REMARKS
Cone penetration test	15	Carried out within machine excavated inspection pits CPT01 to CPT15. Seismic tests carried out at CPT01 to CPT07 and CPT12. Not carried out at CPT08, 09, 11, 13 to 15 due to ground surface obstruction nor CPT14 due to immediate deviation/inclination of probe
Plate loading test	7	Carried out within trial pits TP01, TP04 to TP07, TP13 and TP14
Dynamic cone penetrometer	7	Carried out within trial pits TP01, TP04 to TP07, TP13 and TP14 using TRL Probe. CBR values calculated in accordance with DMRB CS 229

3.4 Groundwater and Ground Gas Monitoring

Ground gas and groundwater monitoring instrumentation was installed in selected boreholes as specified by MML. Details are shown on the logs and summarised in Appendix D.

A programme of post-fieldwork groundwater and ground gas monitoring was undertaken by SOCOTEC comprising a series of visits carried out at weekly followed by fortnightly intervals. The programme commenced on 02 August 2022 and concluded on 09 December 2022.

The records obtained during and after the main fieldwork period are included in Appendix D. It may be noted that the monitoring data for the weeks commencing 01 and 08 August 2022 is incomplete. This is because the visits were dedicated to the development of the installations and the subsequent recovery of groundwater samples.

Monitoring of exploratory holes DS03, DS05 and DS13 commenced on 20 September 2022 after the instrumentation was installed on 07 September 2022.

3.5 Groundwater Sampling

Sampling of groundwater from borehole installations was carried out by SOCOTEC as part of the post-fieldwork monitoring and sampling programme. The results of laboratory tests carried out on the groundwater samples are included in Appendix F.

4 LABORATORY TESTING

4.1 Geotechnical Testing

Geotechnical laboratory testing of selected samples was scheduled by MML. The testing was carried out by Pro Soils Laboratory (PSL) near Doncaster in accordance with test methods as stated within the test reports.

The scope of testing is listed in Table 3 and the results are presented in Appendix E.

TABLE 3 SUMMARY OF GEOTECHNICAL LABORATORY TESTS

TEST TYPE	QUANTITY	REMARKS
Classification/index tests		
Water content	222	
Atterberg limits	174	
Particle density	26	Missing tests on C126 and C136 (RC02) – samples not received at lab
Particle size distribution	44	
Strength tests		

TEST TYPE	QUANTITY	REMARKS
Unconsolidated undrained triaxial compression	50	
Consolidated undrained triaxial compression	17	
Compaction / earthworks tests		
Compaction (light) 2.5 kg	2	
California bearing ratio (CBR)	2	
Moisture condition value/water content relationship	2	
Consolidation tests		
One-dimensional (oedometer) consolidation	30	Missing C126 and C136 (RC02) – samples not received at lab
Geochemical tests		
pH and sulphate contents	50	
Organic matter content	13	Missing D8 (CP04) – sample not received at lab

.

4.2 Geoenvironmental Testing

Geoenvironmental laboratory testing was scheduled by MML on selected soil samples recovered during the fieldwork and water samples taken by SOCOTEC from the installations. The testing was carried out by Eurofins Chemtest Ltd (Chemtest), in accordance with test methods as stated within the test reports.

The results are presented in Appendix F. Subcontracted testing is appended to the associated Chemtest report.

5 REFERENCES

AGS : 2017 : Electronic Transfer of Geotechnical and Geoenvironmental Data (Edition 4.0.4 February 2017). Association of Geotechnical and Geoenvironmental Specialists.

BGS England and Wales Sheet 222 : 1990 : Great Dunmow. 1:50000 geological map solid and drift. British Geological Survey.

BGS GeoIndex Onshore : 2022. www.bgs.ac.uk. British Geological Survey.

BRE Special Digest 1 : 2005 : Concrete in aggressive ground. Building Research Establishment.

BS 10175:2011+A2:2017 : Investigation of potentially contaminated sites – Code of practice

BS 1377 : 1990 : Methods of test for soils for civil engineering purposes.

BS 5930:2015+A1 : 2020 : Code of practice for ground investigations.

BS EN 1997-2 : 2007 (Incorporating corrigendum June 2010) : Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing.

BS EN ISO 14688-1:2018 : Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description

BS EN ISO 14688-2:2018 : Geotechnical investigation and testing - Identification and classification of soil - Part 2 Principles for a classification

BS EN ISO 17892-1 : 2014 : Geotechnical investigation and testing – Laboratory Testing of soil – Determination of water content.

BS EN ISO 22475-1 : 2006 (reproduced 2007) : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution.

BS EN ISO 22476-1 : 2012 (Incorporating corrigendum January 2013) : Geotechnical investigation and testing — Field testing - Part 1: Electrical cone and piezocone penetration test.

BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test.

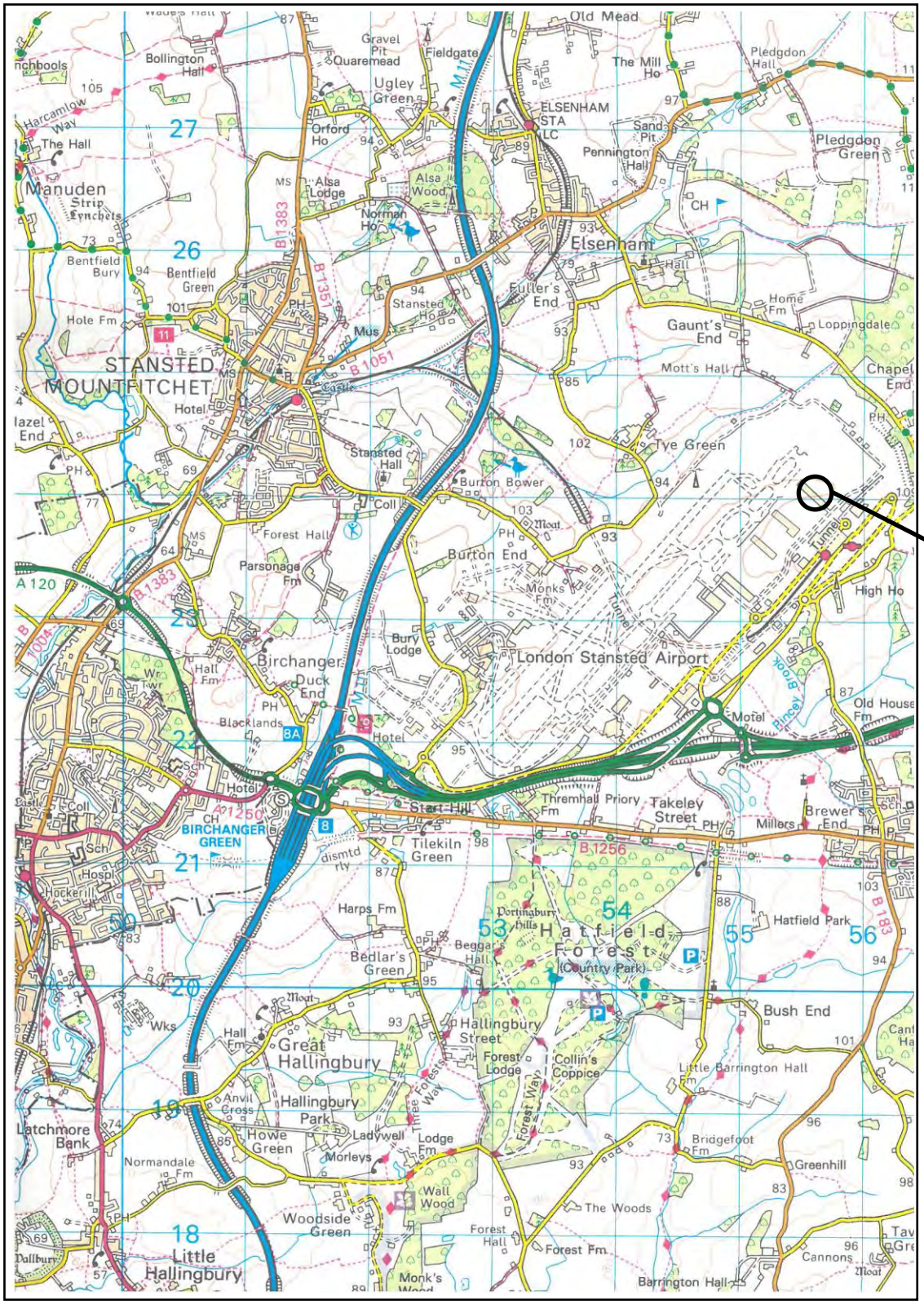
CS 229 : 2020 : Data for pavement assessment. Design Manual for Roads and Bridges. Highways England

UK Specification for Ground Investigation. Third edition : 2022 : ICE Publishing. Thomas Telford Ltd

APPENDIX A
FIGURES AND DRAWINGS

Site Location Plan

SOCOTEC



Notes: Scale 1:50 000	**Project** Stansted Terminal 2 (ST2) – Ground Investigation **Project No.** D2027-22 **Carried out for** Marriott Civils	**Figure** **A1**

N

W E

S

Notes:
Site Plan created using Professional incorporating Bing Maps included under licence with Bentley Ltd.

Scale:
1:2500

Surveyed By:
SOCOTEC UK

Surveyed Date:

Key:

- Cable Percussion
- Rotary Cored
- Inspection Pit
- Trial Pit
- Dynamic Windowless Sampling
- Dynamic Cone Penetrometer

SITE PLAN

SOCOTEC

Project ID:
D2027-22

Project Title:
Stansted Terminal 2 (ST2) Ground Investigation

Client:
Marriott Civils

Figure:
A2

APPENDIX B
EXPLORATORY HOLE RECORDS

Key to Exploratory Hole Records

SOCOTEC

SAMPLES

Undisturbed

U	Driven tube sample	nominally 100 mm diameter and 100% recovery unless otherwise stated
UT	Driven thin wall tube sample	
TW	Pushed thin wall tube sample	
P	Pushed piston sample	
CBR	CBR mould sample	
BLK	Block sample	
C	Core sample (from rotary core) taken for laboratory testing.	

Disturbed

D	Small sample (including samples recovered from SPT)
B	Bulk sample
LB	Large Bulk sample (comprising more than one container as required)

Other

W	Water sample	
G	Gas sample	
ES	Soil sample	Environmental chemistry samples (in more than one container where appropriate)
EW	Water sample	

Comments to samples

Sequential sample reference numbers are assigned to every sample taken during hole construction.

NR - No Recovery. Used where tube sampling has been attempted but no sample obtained (for whatever reason).

Samples not shown on exploratory hole logs:

- subsamples / specimens taken for on-site testing, eg point load testing
- samples taken from borehole installations (ie water or gas) after hole construction

DYNAMIC SAMPLING

Dynamic sampling includes 'window' and 'windowless' sampling methods, with and without a sample liner respectively

DYS	Dynamic sampling range showing tube / liner recovery (rec.) and diameter. Material retained as separate samples.
L	Retained complete liner sample (with sample reference number)

IN SITU/FIELD 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+A1:2011. The open shoe configuration is used without a sample liner unless shown otherwise. Samples recovered by SPT open shoe are shown as type D. The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self-weight in mm (SW) is noted. Where the full 300 mm 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 the limiting value (usually 50) the total blow count beyond the seating drive is given (without the N = prefix). See Note 7 also.
IV	*in situ*/field 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	Permeability tests : KFH = falling head, KRH = rising head, KPI = packer inflow (water pressure test). Results presented on separate report sheets.
PID	VOC concentration using hand-held photo-ionisation detector, ppmv

DRILLING RECORDS

Classification of discontinuity state - as defined in BS 5930:2015+A1:2020

TCR	Total Core Recovery, %
SCR	Solid Core Recovery, %
RQD	Rock Quality Designation, %
If	Fracture spacing, mm - presented as minimum, mode (or 'typical' value) and maximum spacing.
FI	Fracture Index - presented as number of fractures per metre. (Used as alternative to Fracture Spacing)
NI	Non-intact - used to indicate where the core is fragmented (ie non-Solid Core).
NA	Not-applicable - used where a measurement is inappropriate (eg for non-rock materials, zones of no recovery)
NIDD	Non-intact Drilling Induced – used to indicate where rock believed to be non-fractured in the ground has been recovered as Non-intact due to the drilling process. (Used only where specified)
NDP	No Discontinuities Present – used to indicate where core is non-fractured. (Used only where specified as alternative representation to showing a single If value for the depth range of non-fractured core.)
CRF	Core Recovered in the Following run (length in m) – used to indicate length adjustment to TCR (and SCR, RQD and If accordingly) where slipped/dropped core from a core run has been recovered in the subsequent run.
AZCL	Assessed Zone of Core Loss – used to indicate estimated depth range corresponding to core loss (for TCR<100 %). Assumed to be at the start of the core run where no judgement is possible. Not shown for core loss less than 5 %.

Flush returns – presented as estimated percentage in the Records column, with colour where relevant.

Notes:
See report text for full references of standards.
Updated June 2021 v1.3 col

Key

Key to Exploratory Hole Records

GROUNDWATER

▼ Groundwater entry

▽ Depth to groundwater after observation period

INSTALLATIONS Any installations are shown on the Exploratory Hole Record in the rightmost Backfill column with appropriate graphic.

Standpipe/ piezometer

SP	Standpipe
SPIE	Standpipe piezometer
PPIE	Pneumatic piezometer
EPIE	Electronic piezometer

Plain Pipe 

Slotted Pipe 

Piezometer Tip 

Inclinometer or Slip Indicator

ICE	Biaxial inclinometer
ICM	Inclinometer tubing for use with probe
SLIP	Slip indicator

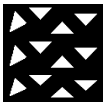
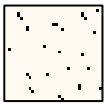
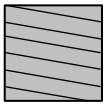
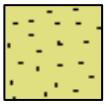
Settlement Points

ESET	Electronic settlement cell/gauge
ETM	Magnetic extensometer settlement point

Pressure Cells

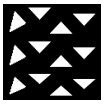
EPCE	Electronic embedment pressure cell
PPCE	Electronic push-in pressure cell

INSTALLATION / BACKFILL LEGENDS A legend describing the installation is shown in the rightmost column. Legend symbols used to describe the backfill materials are indicated below.

Macadam 
Concrete 
Grout 
Bentonite 
Sand 
Gravel 
Arisings 

STRATUM LEGENDS The legend symbols used for graphical representation of soils, rocks and other materials on the borehole logs are shown below. For soils with significant proportions of secondary soil types, a combination of two or more symbols is used.

Note that the Made Ground / Fill stratum legend does not differentiate between engineered and non-engineered anthropogenic materials.

Macadam 
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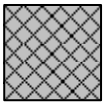
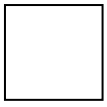
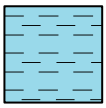
Topsoil 
Made Ground / Fill 
Peat 
Void or No Information 

Clay 
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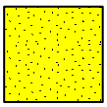
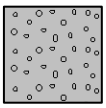
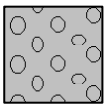
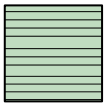
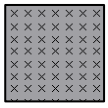
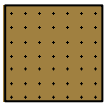
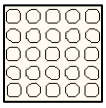
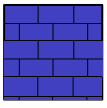
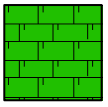
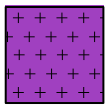
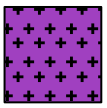
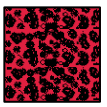
Sand 
Gravel 
Cobbles 
Boulders 
Coal 

Mudstone 
Siltstone 
Sandstone 
Conglomerate 
Breccia 
Limestone 
Chalk 

Igneous (Fine) 
Igneous (Med) 
Igneous (Coarse) 
Metamorphic (Fine) 
Metamorphic (Med) 
Metamorphic (Coarse) 
Tuff 

Notes:
See report text for full references of standards.
Updated June 2021 v1.3 col

Key to Exploratory Hole Records

NOTES

1 **Geological materials** are described in accordance with BS 5930:2015+A1:2020, which is compliant with BS EN ISO 14688-1:2018 and 14689-1:2018 for soils and rocks respectively.

2 The **consistency** determined during description for fine soils (clay and silt) is reported for strata where undisturbed samples are available. Where the logger considers that the samples may not be representative of the in situ condition, for whatever reason, the reported consistency may be omitted, or qualified using the terms *Probably* (where the logger is reasonably confident of the assessment, or *Possibly* where there is less certainty.

3 The presence of **very coarse particles** (cobbles and boulders) is included in the stratum descriptions on logs using the proportional terminology of BS 5930 where possible. However, due to their relatively large size in relation to the diameter of boreholes, and volumes of samples recovered, these records may not be fully representative of their size and frequency in the ground. Where sample mass precludes a reliable estimate of the proportion of very coarse particles, their presence may be described using undefined qualitative terms, eg occasional, frequent, etc, or by noting the number of cobbles/boulders observed.

4 The **declination of bedding and joints** is given with respect to the normal to the core axis, ie perpendicular to the direction of drilling. In a vertical borehole this will therefore correspond to the dip.

5 The assessment of **SCR, RQD and Fracture Spacing** excludes all non-natural fractures (ie drilling induced) where these can be positively identified.

6 Observations of discernible **groundwater entries** during the advancement of the exploratory hole are given at the foot of the log and in the Legend column. The absence of a recorded groundwater entry should not, however, be interpreted as a groundwater level below the base of the borehole. Under certain conditions groundwater entry may not be observed, for instance, drilling with water flush or overwater, or boring at a rate faster than water can accumulate in the borehole. Similarly, where water entry observations do exist, groundwater may also be present at higher elevations in the ground than where recorded in the borehole. In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.

7 The borehole logs present the results of **Standard Penetration Tests** recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.

8 | Date | Time |
|---|---|
| Casing | Water |

Overnight pauses in hole progress are shown by a horizontal line together with records of casing depth and water level at the start and end of shift, together with the corresponding date and time. Casing depths and water levels are also shown at the time of tube sampling and Standard Penetration Tests.

REFERENCES

1 BS EN ISO 14688-1:2018 : Geotechnical investigation and testing - Identification and classification of soil. Part 1 Identification and description. British Standards Institution

2 BS EN ISO 14689 : 2018 : Geotechnical investigation and testing - Identification and classification of rock. British Standards Institution

3 BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing. Part 3 Standard penetration test. British Standards Institution

4 BS 5930:2015+A1:2020 : Code of practice for ground investigations. British Standards Institution

Notes:
See report text for full references of standards.
Updated June 2021 v1.3 col

Key

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING (UK) LTD
AINLEYS INDUSTRIAL ESTATE
ELLAND
WEST YORKSHIRE
HX5 9JP

SPT Hammer Ref:	BHDS06
Test Date:	16/12/2021
Report Date:	16/12/2021
File Name:	BHDS06.spt
Test Operator:	JL

Instrumented Rod Data

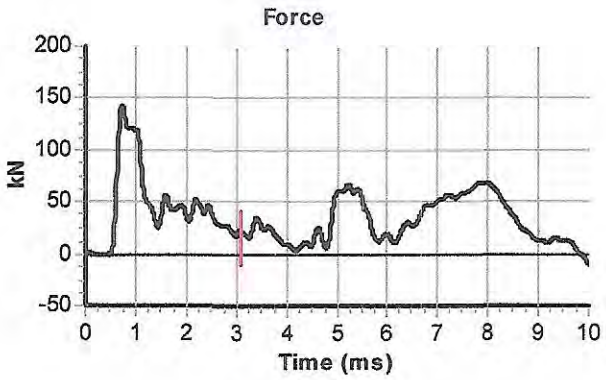
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	200
Accelerometer No.1:	7080
Accelerometer No.2:	11609

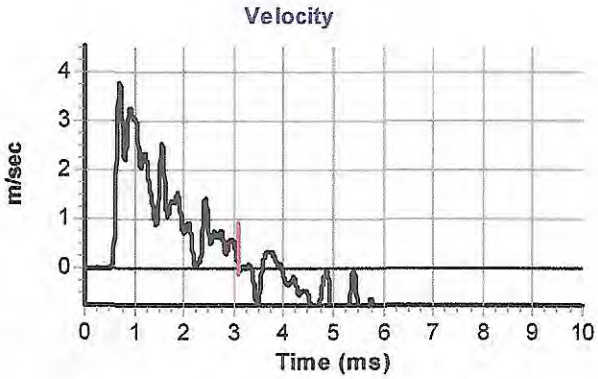
SPT Hammer Information

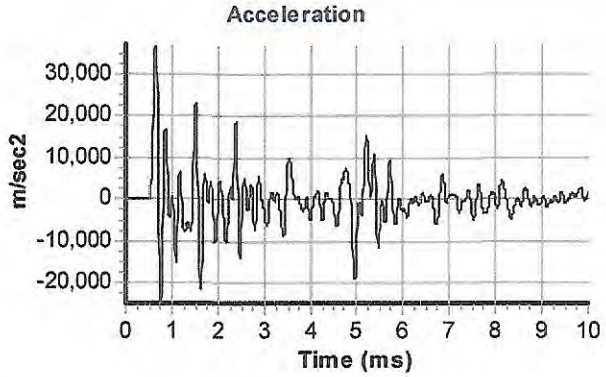
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	10.0

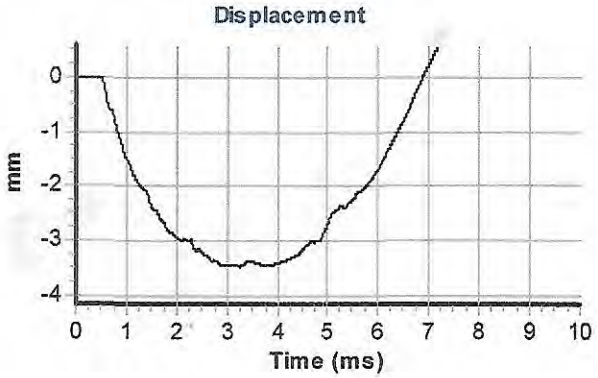
Comments / Location

B H DRILLING SERVICES LTD - 78322









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	291

Energy Ratio E_r (%): **61**

[redacted]

Signed: J.LOCK

Title: FITTER

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwoods Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref:	DT0658
Test Date:	13/05/2022
Report Date:	13/05/2022
File Name:	0658.spt
Test Operator:	NPB

Instrumented Rod Data

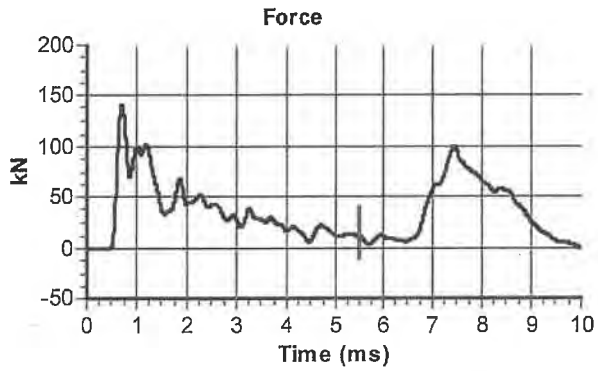
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.7
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	64786
Accelerometer No.2:	64789

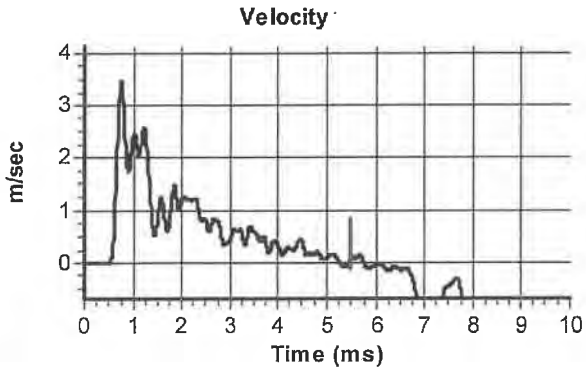
SPT Hammer Information

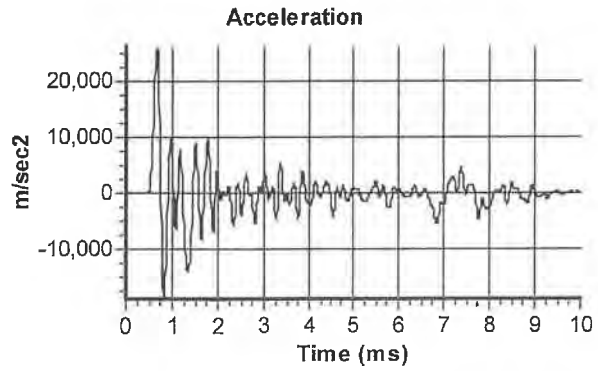
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	14.5

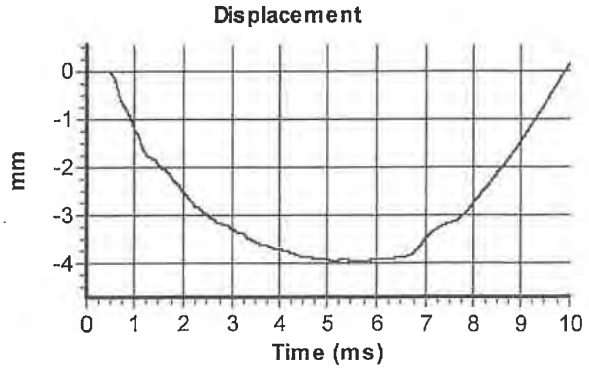
Comments / Location

CHARLWOODS









Calculations

Area of Rod A (mm2):	996
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	270

Energy Ratio E_r (%): **57**

[redacted]

Signed: N P Burrows

Title: Field Operations Manager

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dando Drilling International Ltd
Unit G Ford Airfield Industrial Estate
Ford,
Nr Arundel
West Sussex
BN18 0HY

SPT Hammer Ref:	DT0769
Test Date:	22/03/2022
Report Date:	22/03/2022
File Name:	DT0769.spt
Test Operator:	NJS

UKAS TESTING

Instrumented Rod Data

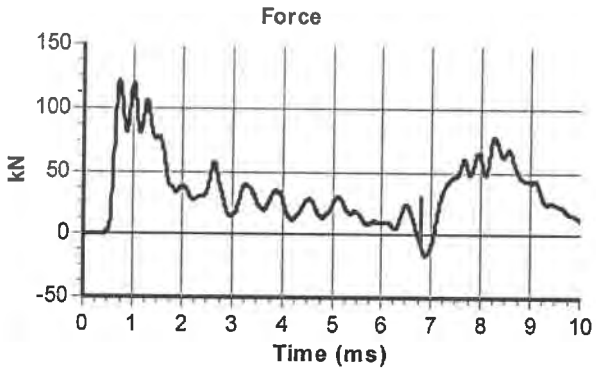
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.6
Rod Length l_r (m):	1.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	11855
Accelerometer No.2:	11406

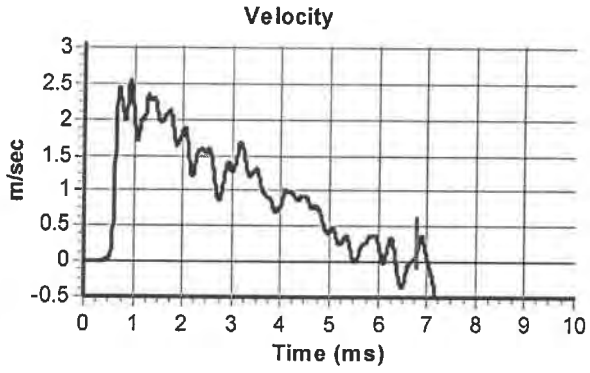
SPT Hammer Information

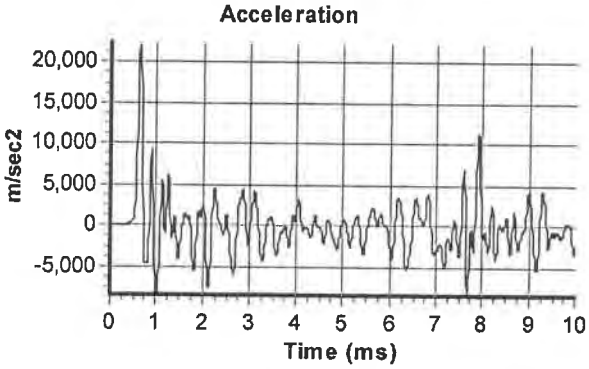
Hammer Mass m (kg):	63.5
Falling Height h (mm):	750
SPT String Length L (m):	16.0

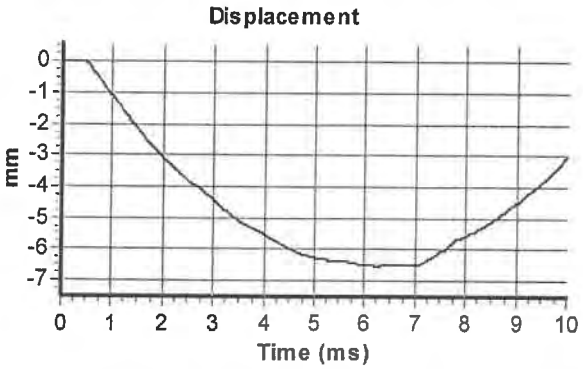
Comments / Location

ENDEAVOUR DRILLING









Calculations

Area of Rod A (mm2):	983
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	341

Energy Ratio E_r (%): **72**

Signed: N Jacobs-smith

Title: Fitter

Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic Sampling
Unit 8
Victory Park
Victory Road
Derby
DE248ZF

Hammer Ref:	SM39
Test Date:	09/02/2022
Report Date:	10/02/2022
File Name:	SM39.spt
Test Operator:	B HUNTER

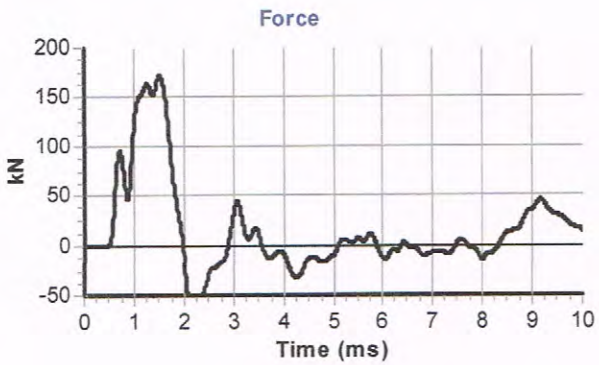
Instrumented Rod Data

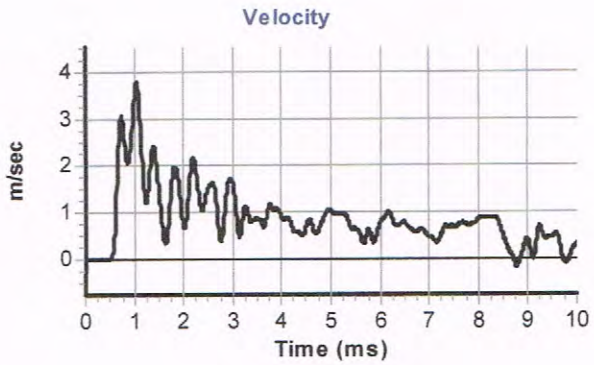
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

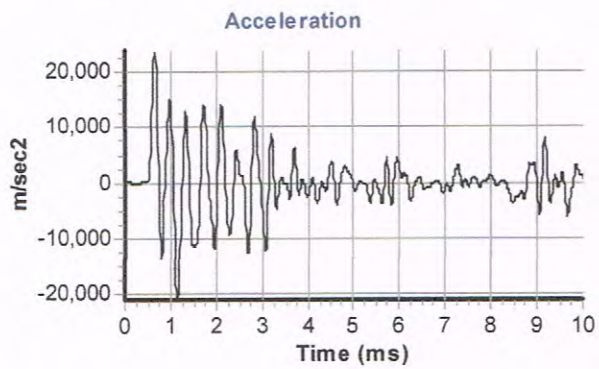
Hammer Information

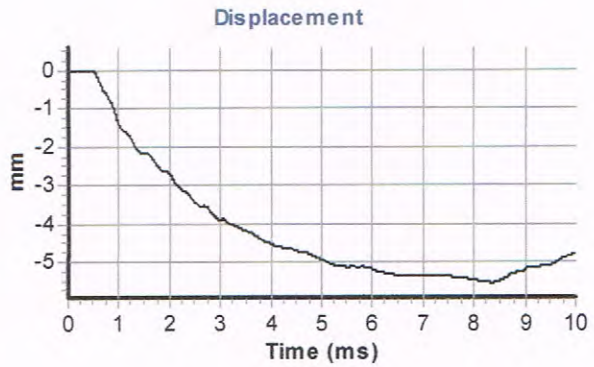
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
String Length L (m):	10.0

Comments / Location









Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	279

Energy Ratio E_r (%): **59**

[redacted]

Signed: B.Hunter

Title: Operations Manager

The recommended calibration interval is 12 months

Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Dynamic Sampling
Unit 8
Victory Park
Victory Road
Derby
DE248ZF

Hammer Ref:	TH05
Test Date:	09/02/2022
Report Date:	10/02/2022
File Name:	TH05.spt
Test Operator:	B HUNTER

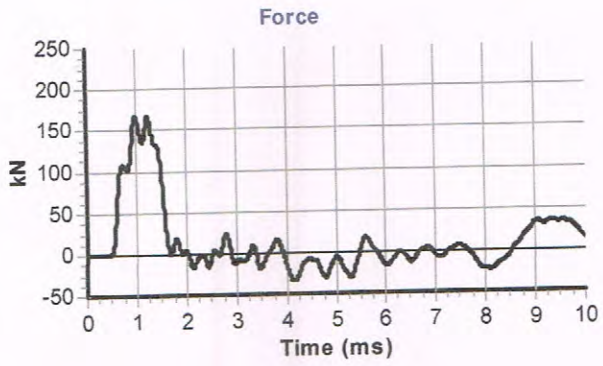
Instrumented Rod Data

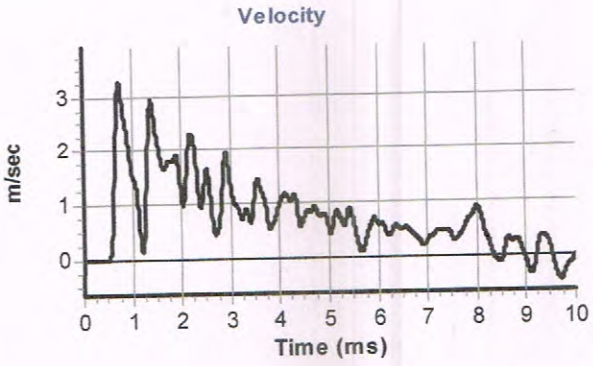
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.0
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	62901
Accelerometer No.2:	62902

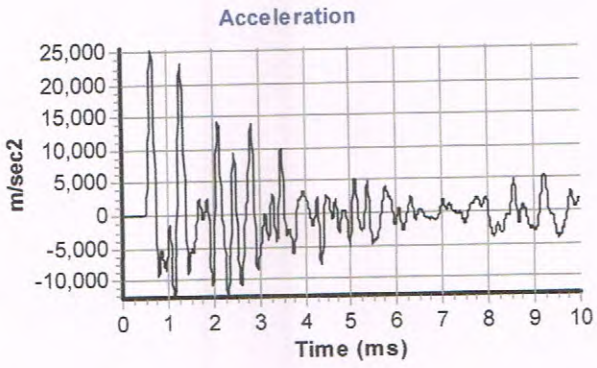
Hammer Information

Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
String Length L (m):	10.0

Comments / Location







Calculations

Area of Rod A (mm2):	905
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	268

Energy Ratio E_r (%): **57**

[redacted]

Signed: B.Hunter

Title: Operations Manager

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref:	TH65
Test Date:	23/06/2022
Report Date:	23/06/2022
File Name:	TH65.spt
Test Operator:	CR

Instrumented Rod Data

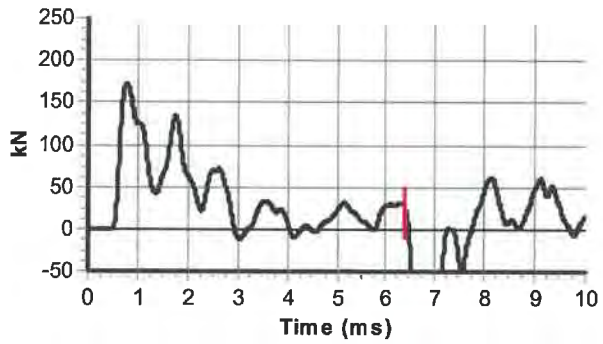
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.7
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	72570
Accelerometer No.2:	72571

SPT Hammer Information

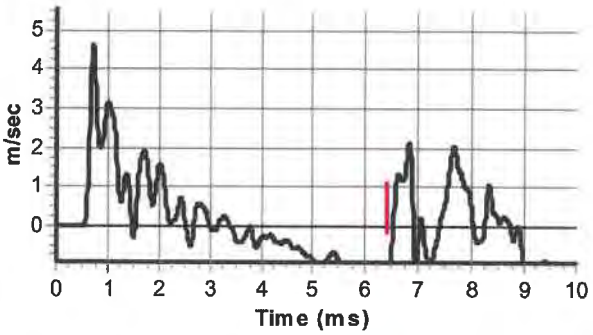
Hammer Mass m (kg):	63.5
Falling Height h (mm):	760
SPT String Length L (m):	15.0

Comments / Location

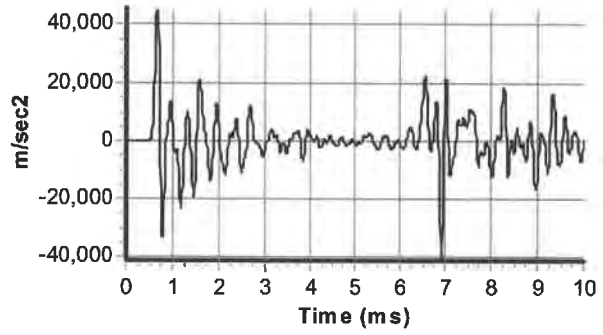
Force



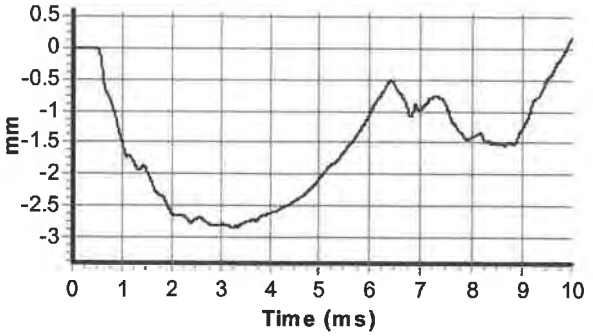
Velocity



Acceleration



Displacement



Calculations

Area of Rod A (mm2):	996
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	322

Energy Ratio E_r (%): **68**

Signed:

Title:

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50 1.50 - 20.00	16 Jun 22 - 16 Jun 22 21 Jun 22 - 23 Jun 22	Hand dug inspection pit. Cable percussion	Hand tools Dando 3000	Labourers KP	CD VJ	16 Jun 22 23 Jun 22	Depth 20.00	Dia. (mm) 200	Depth 20.00	Dia. (mm) 200	Depth	Remarks		
Approved															
DB															

Ground Level	104.79 mOD
Coordinates	E 555680.42
National Grid	N 224333.63
System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main / Detail	Chisel.	Water Entry	Backfill
16 Jun 22 / 0.00	0800 / Dry	0.10	D 2		0.10	PID	0.1 ppmv (Test 1)						(0.15)			(MADE GROUND)			Flush Cover
		0.10	ES 1		0.20	PID	0.0 ppmv (Test 2)						0.15	+104.64		Light brownish grey silty gravelly fine to coarse SAND with rare rootlets. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)			0.30
		0.20	ES 3													(MADE GROUND)			
		0.30 - 0.60	B 4													Firm to stiff light brown mottled light grey slightly sandy gravelly CLAY with rare pockets (up to 20x20x20mm) of orangish brown silty clay. Sand is medium to coarse. Gravel is subangular to subrounded, fine to coarse of flint and chalk.			
		0.50	D 5													(Reworked LOWESTOFT FORMATION)			
		0.80 - 1.20	B 8		0.80	PID	0.0 ppmv (Test 3)						(1.35)						
		0.80	ES 6																
		1.00	D 7																
16 Jun 22 / 0.00	1800 / Dry	1.40	ES 9		1.40	PID	0.0 ppmv (Test 4)												
21 Jun 22 / 0.00	0800	1.50	D 10		1.50 - 1.95	SPT S	N=19 (2,3/4,5,5,5) ID TH65 Er 68%	1.50	Dry				1.50	+103.29		Stiff mottled brown and grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to rounded, fine to coarse of chalk. (Possible reworked LOWESTOFT FORMATION)			
		1.50 - 2.00	B 11																
		2.00	D 12																
		2.50 - 2.95	UT 13	68 blows 96% rec				2.50	Dry				(2.00)						
		2.50 - 3.00	B 15																
		3.00	D 14																
		3.50	D 16		3.50 - 3.95	SPT S	N=17 (2,3/3,4,5,5) ID TH65 Er 68%	3.50	Dry				3.50	+101.29		Stiff mottled dark grey and brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to rounded, fine to coarse of chalk. (LOWESTOFT FORMATION)			
		3.50 - 4.00	B 18																
		4.00	ES 17		4.00	PID	0.0 ppmv (Test 5)						(1.00)						
		4.50 - 4.95	UT 19	80 blows 100% rec				4.50	Dry				4.50	+100.29		Stiff dark grey slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)			
		4.50 - 5.00	B 21																
		5.00	D 20																
		5.50	D 22		5.50 - 5.95	SPT S	N=20 (3,4/4,5,5,6) ID TH65 Er 68%	5.50	Dry										
		5.50 - 6.00	B 23																
		6.00	D 24		6.00	PID	0.0 ppmv (Test 6)												
		6.00	ES 25																
		6.50 - 6.95	UT 26	91 blows 100% rec				6.50	Dry										
		6.50 - 7.00	B 28																
21 Jun 22 / 6.50	1800																		
22 Jun 22 / 6.50	0800	7.00	D 27																
		7.50	D 29		7.50 - 7.95	SPT S	N=14 (2,3/3,3,4,4) ID TH05 Er 57%	7.50	Dry				(6.00)						
		7.50 - 8.00	B 30																
		8.00	D 31																
		8.50 - 8.95	UT 32	95 blows 93% rec				8.50	Dry										
		8.50 - 9.00	B 34																
		9.00	D 33																
		9.50	D 35		9.50 - 9.95	SPT S	N=18 (3,3/3,5,5,5) ID TH05 Er 57%	9.50	Dry										
		9.50	B 36																

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:29

AGS

Borehole
CP01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.79 mOD
DB	0.00 - 1.50 1.50 - 20.00	16 Jun 22 - 16 Jun 22 21 Jun 22 - 23 Jun 22	Hand dug inspection pit. Cable percussion	Hand tools Dando 3000	Labourers KP	CD VJ	16 Jun 22 23 Jun 22	Depth 20.00	Dia. (mm) 200	Depth 20.00	Dia. (mm) 200	Depth	Remarks	Coordinates	E 555680.42
Approved														National Grid	N 224333.63
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
																Stiff dark grey slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)				
		10.50 - 10.95 10.50 - 11.00	UT 37 B 38	85 blows 44% rec				10.50	7.00				10.50 (2.00)	+94.29		Medium dense light brownish white slightly sandy clayey angular to rounded fine to coarse GRAVEL of flint and chalk. Sand is fine to medium. (LOWESTOFT FORMATION)				
		11.00	ES 39		11.00	PID	0.0 ppmv (Test 7)												1	11.00
		11.50 - 12.00	B 41		11.50 - 11.95	SPT S	N=16 (2,2/2,2,6,6) ID TH05 Er 57%	11.50	7.40											
		12.50 12.50 - 13.00	D 42 B 43		12.50 - 12.95	SPT S	N=20 (3,4/4,5,5,6) ID TH05 Er 57%	12.50	7.60				12.50	+92.29		Stiff grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)			1	12.50 SP
		13.00 13.00	D 44 ES 46		13.00	PID	0.0 ppmv (Test 8)													
22 Jun 22 13.50	1800																			
23 Jun 22 13.50	0800	13.50 - 13.95 13.50 - 14.00	UT 45 B 46	56 blows 100% rec				13.50	12.00											
		14.00 - 14.50	B 48																	
		14.50 - 14.95 14.50 - 15.00	D 47 B 49		14.50 - 14.95	SPT S	N=30 (4,4/7,6,7,10) ID TH05 Er 57%	14.50	Dry											
		15.50 - 15.95	UT NR	78 blows No Recovery				15.50	Dry											
		16.50 16.50 - 17.00	D 50 B 51		16.50 - 16.95	SPT S	N=29 (5,5/6,8,7,8) ID TH05 Er 57%	16.50	Dry				(7.50)							
		17.00	D 52																	
		17.50 - 17.95	UT 53	98 blows 56% rec				17.50	Dry											
		18.00	D 54																	
		18.50 - 18.95 18.50 - 19.00	D 55 B 56		18.50 - 18.95	SPT S	N=38 (7,7/8,9,9,12) ID TH05 Er 57%	18.50	Dry											
		19.50 - 19.95	UT 57	89 blows 56% rec				19.50	Dry											
23 Jun 22 20.00	1800												20.00	+84.79		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	12.50	Rose to 11.00 m after 20 minutes.	14.00

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:29

AGS

Borehole CP01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.63 mOD
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	23 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555691.60
	1.50 - 15.05	28 Jun 22 - 29 Jun 22	Cable percussion	Dando 175	JT/DH	KG/BA	29 Jun 22	15.00	200	12.00	200			National Grid	N 224269.03
Approved														System	
DB															

Date Casing	Time Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
23 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)						(0.25)			(TOPSOIL)				
0.00	Dry	0.10 - 0.30	B 3										0.25	+104.38		Light grey slightly gravelly fine to medium SAND with occasional rootlets. Gravel is angular to subrounded, fine to coarse of flint and chalk.				
		0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)						(0.25)							
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)						0.50	+104.13		Firm to stiff mottled dark brown and grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of flint, brick and macadam. (Reworked LOWESTOFT FORMATION)				
		0.50	D 5										(0.50)							
		0.50	ES 6																	
		1.00 - 1.20	B 8		1.00	PID	0.0 ppmv (Test 4)						1.00	+103.63		Light grey CONCRETE with rebar and medium cobble content and fine to medium sand. Cobbles are angular of brick. (Reworked LOWESTOFT FORMATION)				
		1.00	ES 7										(0.50)							
23 Jun 22	1800																			
0.00	Dry	1.50 - 1.95	UT 12	33 blows 73% rec	1.50	PID	0.0 ppmv (Test 5)						1.50	+103.13		Stiff dark greenish brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
28 Jun 22	0800	1.50	D 10					1.50								Stiff grey mottled brown gravelly CLAY. Gravel is rounded to subrounded, fine to medium of chalk and flint. (Reworked LOWESTOFT FORMATION)				
1.50	Dry	1.50 - 2.00	B 14																	
		1.50	ES 11																	
		1.50	ES 9		2.00	PID	0.0 ppmv (Test 6)						(1.20)							
		1.95 - 2.05	D 13																	
		2.00	ES 15																	
		2.50 - 2.95	D 16		2.50 - 2.95	SPT S	N=26 (2,3/4,5,7,10)	2.50	Dry											
		2.50	D 17				ID SM39 Er 59%						2.70	+101.93		Stiff light grey mottled brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is rounded to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		3.00	D 19																	
		3.00 - 3.45	B 18																	
		3.50 - 3.95	UT 20	80 blows 100% rec	3.50	PID	0.0 ppmv (Test 7)													
		3.50	D 21					2.50												
		3.50	ES 23										(2.30)							
		3.95 - 4.05	D 22																	
		4.00	D 25																	
		4.00 - 4.50	B 24																	
		4.50 - 4.95	D 27		4.50 - 4.95	SPT S	N=25 (2,4/5,6,7,7)	2.50	Dry											
		4.50	D 26				ID SM39 Er 59%													
		5.00	D 29										5.00	+99.63		Stiff grey slightly gravelly CLAY. Gravel is rounded to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		5.00 - 5.50	B 28																	
		5.50 - 5.95	UT 31	60 blows 100% rec				2.50												
		5.50	D 30																	
		5.95 - 6.05	D 32																	
		6.00	D 34																	
		6.00 - 6.50	B 33																	
		6.50 - 6.95	D 36		6.50 - 6.95	SPT S	N=28 (3,4/6,6,8,8)	3.00	Dry											
		6.50	D 35				ID SM39 Er 59%													
		7.00	D 38																	
		7.00 - 7.50	B 37																	
		7.50 - 7.95	UT 40	76 blows 100% rec				3.00												
		7.50	D 39										(5.20)							
		7.95 - 8.05	D 41																	
		8.00	D 43																	
		8.00 - 8.50	B 42																	
		8.50 - 8.95	D 45		8.50 - 8.95	SPT S	N=36 (2,3/6,8,11,11)	3.00	Dry										1	
		8.50	D 44				ID SM39 Er 59%													
		9.00	D 47																	
		9.00 - 9.50	B 46																	
		9.50 - 9.95	UT 49	38 blows 100% rec				3.00												
		9.50	D 48																	
28 Jun 22	1800																			
10.00	Dry	9.95 - 10.05	D 50																	

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	10.00	Rose to 8.63 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:30

AGS

Borehole CP02

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks	Ground Level	104.63 mOD
DB	0.00 - 1.50 1.50 - 15.05	23 Jun 22 - 23 Jun 22 28 Jun 22 - 29 Jun 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 175	Labourers JT/DH	VJ KG/BA	23 Jun 22 29 Jun 22	15.00	200	12.00	200			Coordinates	E 555691.60
Approved														National Grid	N 224269.03
DB														System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
29 Jun 22	0800	10.20	D 51										10.20	+94.43		Stiff grey slightly gravelly CLAY. Gravel is rounded to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
10.00	Dry	10.20 - 10.50	B 52																	
		10.50 - 10.95	D 53		10.50 - 10.95	SPT C	N=23 (3,4/5,5,6,7) ID SM39 Er 59%	10.50	9.20											
		10.50 - 10.95	B 54													Medium dense grey and white slightly sandy silty rounded to subrounded fine to medium GRAVEL of chalk and flint. Sand is fine to coarse. (LOWESTOFT FORMATION)				
		11.00	D 55										(1.45)							
		11.50	D 56		11.50 - 11.95	SPT C	N=11 (3,3/2,2,3,4) ID SM39 Er 59%	11.50	10.65											
		11.65 - 11.95	B 57										11.65	+92.98		Stiff greyish white gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint with rare black specks. (LOWESTOFT FORMATION)			
		12.00	D 58																	
		12.00 - 12.45	B 59																	
		12.50 - 12.95	UT 60	65 blows 100% rec				12.00												
		12.95 - 13.05	D 61																	
		13.10	D 62																	
		13.10 - 13.45	B 63																	
		13.50	D 64		13.50 - 13.95	SPT S	N=33 (2,3/6,7,10,10) ID SM39 Er 59%	12.00	Dry				(3.40)							
		14.00	D 65																	
		14.00 - 14.45	B 66																	
		14.50 - 14.95	UT 67	32 blows 100% rec				12.00												
29 Jun 22	1800																			
12.00	Dry												15.05	+89.58		END OF EXPLORATORY HOLE				15.05

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:30

AGS

Borehole **CP02**

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	24 Jun 22 - 24 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	24 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	106.13 mOD
Approved	1.50 - 20.00	29 Jun 22 - 08 Jul 22	Cable percussion	Dando 175	JT/DH	BP	08 Jul 22	20.00	200	16.00	200			Coordinates	E 555765.40
DB														National Grid	N 224255.70
														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													(0.45)			(MADE GROUND) Grey angular to subangular medium to coarse GRAVEL of concrete and brick with high cobble content. Cobbles are of concrete and brick.				Flush Cover
24 Jun 22 0.00	0800 Dry	0.10 0.20 0.20 - 0.60	ES 1 D 2 B 6		0.10	PID	0.0 ppmv (Test 1) 0.0 ppmv (Test 2)						0.45	+105.68		(MADE GROUND) Dark grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, medium to coarse of chalk, flint and brick with pockets of soft dark greenish grey clay.				
		0.30 0.50 0.60 - 1.30 0.60	ES 3 ES 4 LB 101 D 5		0.50	PID	0.0 ppmv (Test 3)													
		1.00 1.20 - 1.50	ES 7 B 9		1.00	PID	0.0 ppmv (Test 4)						(1.60)							
24 Jun 22 0.00	1800 Dry	1.40	D 11																	
29 Jun 22 0.00	0800 Dry	1.50 1.60 - 2.05	ES 10 UT 13	11 blows 100% rec	1.50	PID	0.0 ppmv (Test 5)	1.50	Dry								1.60-2.05 Lab split and describe (sample UT13): very stiff brown sandy gravelly CLAY. Gravel is fine to coarse, subrounded, mostly chalk.			
		2.00 - 2.45 2.00 2.05 - 2.15	B 15 ES 12 D 14		2.00	PID	0.0 ppmv (Test 6)						2.05	+104.08		Firm brown mottled light grey gravelly CLAY. Gravel is subangular to rounded, fine to medium of chalk and flint. (Possible reworked LOWESTOFT FORMATION)				
29 Jun 22 2.50	1800 Dry																			
30 Jun 22 2.50	0800 Dry	2.50 - 2.95 2.50 2.50	D 18 D 16 ES 17		2.50 - 2.95 2.50	SPT S PID	N=9 (1,2/2,2,2,3) ID SM39 Er 59% 0.0 ppmv (Test 7)	2.50	Dry												
		3.00 3.00 - 3.45	D 20 B 19										(2.05)							
		3.50 - 3.95 3.50	UT 22 D 21	60 blows 100% rec				3.95	Dry											
		3.95 - 4.05 4.00 4.00 - 4.45	D 23 D 25 B 24										4.10	+102.03		Stiff grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		4.50 - 4.95 4.50 4.50	D 28 D 26 ES 27		4.50 - 4.95 4.50	SPT S PID	N=13 (1,2/3,3,3,4) ID SM39 Er 59% 0.0 ppmv (Test 8)	4.00	Dry												
		5.00 5.00 - 5.45	D 30 B 29														5.00-5.50 Pockets (up to 40mm) of firm yellowish brown sandy clay.			
		5.50 - 5.95 5.50	UT 32 D 31	50 blows 100% rec				4.00	Dry				(2.90)				5.50-7.00 Frequent orangish brown staining.			
		5.95 - 6.05 6.00 6.00 - 6.45	D 33 D 35 B 34																	
		6.50 - 6.95 6.50	D 37 D 36		6.50 - 6.95	SPT S	N=22 (2,3/4,6,6,6) ID SM39 Er 59%	4.00	Dry											
		7.00 7.00 - 7.45	D 39 B 38										7.00	+99.13		Stiff dark grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		7.50 - 7.95 7.50	UT 41 D 40	60 blows 96% rec				4.00	Dry											
		7.95 - 8.05 8.00 8.00 - 8.45	D 42 D 44 B 43																	
		8.50 - 8.95 8.50	D 46 D 45		8.50 - 8.95	SPT S	N=27 (5,5/6,6,7,8) ID SM39 Er 59%	4.00	Dry								8.40 Occasional elongate fossils and orangish brown staining.			
		9.00 9.00 - 9.45	D 48 B 47																1	
		9.50 - 9.95 9.50	UT 50 D 49	70 blows 93% rec				4.00	Dry				(5.50)							
		9.95 - 10.05	D 51													Hole continues on next sheet				

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:31

AGS

Borehole

CP03

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks		
DB	0.00 - 1.50	24 Jun 22 - 24 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	24 Jun 22	20.00	200	16.00	200			Ground Level	106.13 mOD
Approved	1.50 - 20.00	29 Jun 22 - 08 Jul 22	Cable percussion	Dando 175	JT/DH	BP	08 Jul 22							Coordinates	E 555765.40
DB														National Grid	N 224255.70
														System	

Date Casing	Time Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
		10.00	D 53													Stiff dark grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		10.00 - 10.45	B 52																	
		10.50 - 10.95	D 55																	
		10.50	D 54		10.60 - 11.05	SPT S	N=30 (2,4/5,8,8,9) ID SM39 Er 59%	4.00	Dry											
		11.00	D 57																	
		11.00 - 11.45	B 56																	
		11.50 - 11.95	UT 59	65 blows 100% rec				4.00	Dry											
		11.50	D 58																	
		11.95 - 12.05	D 60																	
		12.00	D 62																	
		12.00 - 12.45	B 61																	
		12.00 - 15.00	W 090822																	
		12.50 - 12.95	D 64		12.50 - 12.95	SPT S	N=41 (2,5/7,11,11,12) ID SM39 Er 59%	4.00	Dry				12.50	+93.63						
		12.50	D 63													Stiff dark grey very gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		13.00	D 66										(0.90)							
		13.00 - 13.45	B 65																	
		13.50	D 67		13.50	PID	0.0 ppmv (Test 9)						13.40	+92.73					1	13.50
		13.70	D 69													Medium dense dark grey slightly clayey angular to subangular fine to coarse GRAVEL of chalk and flint. (LOWESTOFT FORMATION)	13.70 Occasional shell fragments.			
30 Jun 22	1800	13.70 - 14.00	B 70																	
14.00	10.60	13.70	ES 68																	
01 Jul 22	0800	14.00 - 14.45	D 71		14.00 - 14.45	SPT S	N=28 (3,4/5,7,8,8) ID SM39 Er 59%	14.00	9.25											
14.00	9.25	14.00 - 14.45	B 72										(1.90)							
		14.50	D 73																	
		15.00 - 15.45	D 74		15.00 - 15.45	SPT S	N=12 (1,4/2,3,3,4) ID SM39 Er 59%	15.00	10.40											15.00 SP
		15.00 - 15.45	B 75																	
		15.50	D 76										15.30	+90.83						
		15.60 - 15.95	B 78		15.60	PID	0.0 ppmv (Test 10)									Stiff grey gravelly CLAY. Gravel is subangular to subrounded, fine to medium of chalk and flint with occasional pockets (up to 20x10mm) of brown sand. (LOWESTOFT FORMATION)				
		15.60	ES 77																	
		16.00 - 16.45	UT 79	55 blows 100% rec				16.00	Dry											
		16.45 - 16.55	D 80																	
		16.50 - 16.95	B 81																	
		17.00 - 17.45	D 83		17.00 - 17.45	SPT S	N=34 (3,5/6,9,9,10) ID SM39 Er 59%	16.00	Dry											
		17.00	D 82																	
		17.50	D 84																	
		17.50 - 17.95	B 85										(4.70)							
		18.00 - 18.45	UT 86	80 blows 93% rec				16.00	Dry											
		18.45 - 18.95	D 87																	
		18.50 - 18.95	B 88																	
		19.00 - 19.45	D 90		19.00 - 19.39	SPT S	50 (4,6/13,15,15,7 for 15mm) ID SM39 Er 59%	16.00	Dry											
		19.00	D 89																	
		19.50	D 91																	
		19.50	B 92																	
01 Jul 22	1800																			
16.00	Dry												20.00	+86.13		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	13.40	Rose to 9.30 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:31

AGS

Borehole CP03

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks		
DB	0.00 - 1.50 1.50 - 15.00	28 Jun 22 - 28 Jun 22 05 Jul 22 - 06 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 3000	Labourers JT/DH	BP VJ	28 Jun 22 06 Jul 22	15.00	200	14.00	200			Ground Level	104.88 mOD
Approved														Coordinates	E 555787.68
DB														National Grid	N 224194.78
														System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
																(MADE GROUND) Brown slightly clayey SAND and GRAVEL with low cobble content. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of concrete, flint, brick and chalk. Cobbles are of concrete (300x200x200mm).				Flush Cover
28 Jun 22 / 0.00	0800 / Dry	0.10 - 0.40 0.10 0.20 0.30 0.50 0.70 0.70 - 1.00	B 4 ES 1 D 2 ES 3 ES 5 D 6 B 7		0.10 0.30 0.50	PID PID PID	0.0 ppmv (Test 1) 0.0 ppmv (Test 2) 0.0 ppmv (Test 3)						(0.45) 0.45	+104.43		(MADE GROUND) Firm light brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of chalk, flint, brick and concrete.				
													(0.85) 1.30	+103.58						
28 Jun 22 / 0.00	1800 / Dry	1.30 1.30 - 1.50	D 8 B 9		1.50	PID	0.0 ppmv (Test 4)						(0.20) 1.50	+103.38		(MADE GROUND) Soft light brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of flint, chalk and concrete. Pockets (up to 50x50mm) of slightly organic soft grey clay. (Reworked LOWESTOFT FORMATION)				
05 Jul 22 / 0.00	0800 / Dry	1.50 1.70 - 2.00	ES 10 B 11																	
		2.00 - 2.45 2.00 2.00	UT 14 D 12 ES 13	30 blows 100% rec	2.00	PID	0.0 ppmv (Test 5)	2.00	Dry				(0.95) 2.45	+102.43		(MADE GROUND) Soft mottled grey and brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse to flint, chalk, brick and concrete.				
		2.45 - 2.55 2.50 - 2.95	D 15 B 16																	
		3.00 3.00 - 3.45 3.00	D 17 D 18 ES 19		3.00 - 3.45 3.00	SPT S PID	N=20 (2,3/4,4,5,7) ID SM39 Er 59% 0.0 ppmv (Test 6)	3.00	Dry				(0.70) 3.15	+101.73		(MADE GROUND) Soft dark greenish grey and brown slightly sandy slightly gravelly CLAY with pockets (60x60x80mm) of decaying black plant matter. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of brick, flint and chalk.				
		3.50 3.50 - 3.95 3.65	D 20 B 21 ES 22		3.65	PID	0.0 ppmv (Test 7)									Soft to firm mottled light grey and orangish brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of chalk. (LOWESTOFT FORMATION)				
		4.00 - 4.45 4.00	UT 24 D 23	32 blows 94% rec				4.00	Dry				(1.85)							
		4.45 - 4.55 4.50 - 4.95	D 25 B 26																	
		5.00 - 5.45 5.00	D 28 D 27		5.00 - 5.45	SPT S	N=15 (2,2/3,3,4,5) ID SM39 Er 59%	5.00	Dry				5.00	+99.88		Firm to stiff greenish brown mottled orange slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		5.50 5.50 - 5.95 5.65	D 30 B 29 ES 31		5.65	PID	0.0 ppmv (Test 8)													
		6.00 - 6.45	UT 32	50 blows 10% rec				6.00	Dry											
		6.45 - 6.55 6.50 - 6.95	D 33 B 34																	
		7.00 7.00 - 7.45	D 35 D 36		7.00 - 7.45	SPT S	N=22 (2,3/4,5,6,7) ID SM39 Er 59%	7.00	Dry				(4.15)							
		7.50 7.50 - 7.95	D 37 B 38																	
		8.00 - 8.45	UT 39	64 blows 100% rec				8.00	Dry											
		8.45 - 8.55 8.50 8.50 - 8.95	D 40 D 42 B 41																	
		9.00 - 9.45	D 43		9.00 - 9.45	SPT S	N=29 (2,3/6,7,8,8) ID SM39 Er 59%	8.00	Dry				9.15	+95.73		Firm dark brownish grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
05 Jul 22 / 8.00	1800 / Dry																			
06 Jul 22 / 8.00	0800 / Dry	9.50 9.50 - 9.95	D 44 B 45																	
																Hole continues on next sheet				

1

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:31

AGS

Borehole CP04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.88 mOD
DB	0.00 - 1.50 1.50 - 15.00	28 Jun 22 - 28 Jun 22 05 Jul 22 - 06 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 3000	Labourers JT/DH	BP VJ	28 Jun 22 06 Jul 22	Depth 15.00	Dia. (mm) 200	Depth 14.00	Dia. (mm) 200	Depth	Remarks	Coordinates	E 555787.68
Approved														National Grid	N 224194.78
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
		10.00 - 10.45	UT 46	45 blows 100% rec				10.00	Dry							Firm dark brownish grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		10.45 - 10.55	D 47																	
		10.50 - 10.95	D 49																	
		10.50	D 48										(3.05)							
		11.00 - 11.45	D 50		11.00 - 11.45	SPT S	N=23 (2,3/4,6,6,7) ID SM39 Er 59%	11.00	Dry											
		11.50	D 51																	
		11.50 - 11.95	B 52																	
		12.00 - 12.45	UT NR	35 blows No Recovery				12.00	Dry											12.00
		12.20	W 55										12.20	+92.68		Very dense light grey sandy angular to subrounded, fine to coarse GRAVEL of chalk and flint. Sand is fine to coarse. (LOWESTOFT FORMATION)			1
		12.45 - 12.55	D 54																	
		12.50	D 56																	
		12.50 - 12.95	B 57										(1.30)							
		13.00 - 13.45	D 58		13.00 - 13.44	SPT S	50 (2,6/11,13,13,13 for 60mm) ID SM39 Er 59% 0.0 ppmv (Test 9)	13.00	9.40											
		13.00 - 13.45	B 59		13.00	PID														
		13.00	ES 60																	
		13.50	D 61										13.50	+91.38		Soft to firm dark brownish grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)			13.50 SP
		13.50 - 13.95	B 62																	
		14.00 - 14.45	UT 63	57 blows 94% rec				14.00	Dry											
		14.45 - 14.55	D 64										(1.50)							
		14.60 - 15.00	B 65																	
06 Jul 22 14.00	1800 Dry												15.00	+89.88		END OF EXPLORATORY HOLE				15.00

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	12.20	Rose to 8.20 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:31

AGS

Borehole

CP04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks
DB	0.00 - 1.50 1.50 - 20.00	29 Jun 22 - 29 Jun 22 30 Jun 22 - 05 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 3000	Labourers KP/MM	BP KG/VJ/BP	29 Jun 22 05 Jul 22	20.00	200	20.00	200		
Approved													
DB													

Ground Level	105.17 mOD
Coordinates	E 555821.59
National Grid	N 224211.84
System	

Date	Time	Casing	Water	Depth	Type & No.	Records	Depth	Type	Records	Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Strata Description Detail	Chisel.	Water Entry	Backfill
29 Jun 22	0800	0.00	Dry	0.10 - 0.30 0.10 0.20 0.30 0.30 - 0.70 0.50 0.60 1.00 1.10 1.20 - 1.50	B 4 ES 1 D 2 ES 3 B 7 ES 5 D 6 ES 8 D 9 B 10		0.10 0.30 0.50 1.00	PID PID PID PID	0.0 ppmv (Test 1) 0.0 ppmv (Test 2) 0.0 ppmv (Test 3) 0.0 ppmv (Test 4)						(0.15)			(MADE GROUND) Dark reddish brown SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint.				
															0.15	+105.02						
															(0.20)	+104.82						
															0.35			(MADE GROUND) Firm dark brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and type 1 aggregate.				
															(0.35)							
															0.70	+104.47						
															(0.80)			(MADE GROUND) Dark grey sandy subangular to rounded medium to coarse GRAVEL of type 1 and flint. Sand is medium to coarse.				
29 Jun 22	1800	0.00	Dry	1.50	D 11		1.50 - 1.95 1.50	SPT S PID	N=50 (3,3/5,10,15,20) ID TH05 Er 57% 0.0 ppmv (Test 5)	1.50	Dry				1.50	+103.67		(MADE GROUND) Dark grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint.				
30 Jun 22	0000	0.00	Dry	1.50 - 2.00 1.50	B 12 ES 11										(1.00)			(MADE GROUND) Firm dark brown slightly sandy slightly gravelly CLAY with occasional rootlets. Sand is fine to medium. Gravel is angular to subrounded, fine to medium of flint, chalk and brick.				
				2.50 2.50 - 3.00	D 13 B 14		2.50 - 2.67	SPT S	50 (25/50 for 20mm) ID TH05 Er 57%	2.50	Dry				2.50	+102.67						
															(0.50)			(MADE GROUND) Possible MACADAM in situ. Recovered as dark brownish black slightly clayey sandy angular to subrounded fine to coarse GRAVEL of macadam, flint, chalk and brick. Sand is fine to coarse.				
				3.00	ES 17		3.00	PID	0.0 ppmv (Test 6)						3.00	+102.17		(MADE GROUND) Firm dark grey mottled light brown slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint. (Possible reworked LOWESTOFT FORMATION)				
				3.50 - 3.95 3.50 - 4.00	UT 15 B 18	84 blows 100% rec				3.50	Dry											
				4.00	D 16										(2.50)							
				4.50 4.50 - 5.00 4.50	D 19 B 21 ES 20		4.50 - 4.95 4.50	SPT S PID	N=13 (3,2/2,4,3,4) ID TH05 Er 57% 0.0 ppmv (Test 7)	4.50	Dry											
30 Jun 22	1800	5.50	Dry	5.50 - 5.95 5.50 - 6.00 5.50 - 6.00	UT 22 B 24 B 26	89 blows 100% rec				5.50	Dry				5.50	+99.67		Firm grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint with occasional pockets (up to 10x10x10mm) of firm yellowish brown sandy clay. (LOWESTOFT FORMATION)				
04 Jul 22	0800	5.50	Dry																			
				6.00	D 23																	
				6.50 6.50 - 7.00	D 25 B 27		6.50 - 6.95	SPT S	N=16 (2,3/3,3,4,6) ID TH05 Er 57%	5.50	Dry											
															(2.50)							
				7.50 - 7.95 7.50 - 8.00	UT NR B 28	95 blows No Recovery				7.50	Dry											
				8.00 8.00 - 8.50	D 29 B 30		8.00 - 8.45	SPT S	N=18 (3,4/4,3,5,6) ID TH05 Er 57%	8.00	Dry				8.00	+97.17		Firm grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk with orangish brown staining and rare pockets of sandy clay. (LOWESTOFT FORMATION)				
				9.00 - 9.45 9.00 - 9.50	UT 31 B 33	98 blows 100% rec				9.00	Dry											
				9.50	D 32										(3.00)							

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool
2.50 - 3.00	120	Chisel

Groundwater Entries

No.	Depth	Remarks	Sealed
	1.70	Rose to 1.40 m after 20 minutes. Slow seepage	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:31

AGS

Borehole

CP05

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50 1.50 - 20.00	29 Jun 22 - 29 Jun 22 30 Jun 22 - 05 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 3000	Labourers KP/MM	BP KG/VJ/BP	29 Jun 22 05 Jul 22	Depth 20.00	Dia. (mm) 200	Depth 20.00	Dia. (mm) 200	Depth	Remarks		
Approved															
DB															

Ground Level	105.17 mOD	
Coordinates	E 555821.59	
National Grid	N 224211.84	
System		

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
		10.00	D 34													Firm grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk with orangish brown staining and rare pockets of sandy clay. (LOWESTOFT FORMATION)				
		10.50 10.50 - 11.00	D 35 B 36		10.50 - 10.95	SPT S	N=19 (4,4/4,4,6,5) ID TH05 Er 57%	10.50	Dry											
		11.00 - 11.45	UT NR	98 blows No Recovery				11.00	Dry				11.00	+94.17		Firm to stiff dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
04 Jul 22 11.50	1700 Dry																			
05 Jul 22 11.50	0800 Dry	11.50 11.50 - 12.00	D 37 B 38		11.50 - 11.95	SPT S	N=25 (5,6/6,6,7,6) ID TH05 Er 57%	11.50	Dry											
													(2.10)							
		12.50 - 12.95 12.50 - 13.00	UT 39 B 41	96 blows 100% rec				12.50	Dry											
		13.00	D 40										13.10	+92.07		Light grey clayey subangular to rounded, fine to coarse GRAVEL of chalk and flint. (LOWESTOFT FORMATION)				
		13.50 13.50 - 14.00	D 42 B 43		13.50 - 13.95	SPT S	N=24 (4,5/6,6,6,6) ID TH05 Er 57%	13.50	Dry				(0.70)							
													13.80	+91.37		Stiff dark brownish grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		14.50 - 14.95 14.50 - 15.00	UT 44 B 46	97 blows 100% rec				14.50	Dry											
		15.00	D 45																	
		15.50 15.50 - 16.00	D 47 B 48		15.50 - 15.95	SPT S	N=42 (4,7/8,11,11,12) ID TH05 Er 57%	15.50	Dry											
		16.50 - 16.95 16.50 - 17.00	UT 49 B 51	84 blows 67% rec				16.50	Dry											
		17.00	D 50										(6.20)							
		17.50 17.50 - 18.00	D 52 B 53		17.50 - 17.95	SPT S	N=47 (3,6/10,12,12,13) ID TH05 Er 57%	17.50	Dry											
		18.50 - 18.95 18.50 - 19.00	UT 54 B 56	86 blows 78% rec				18.50	Dry											
		19.00	D 55																	
		19.50	D 57		19.50 - 19.95	SPT S	N=48 (5,6/10,12,13,13) ID TH05 Er 57%	19.50	Dry											
05 Jul 22 20.00	1700 Dry												20.00	+85.17		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
	13.10	Rose to 10.50 m after 20 minutes. Seepage	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:31

AGS

Borehole

CP05

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks
DB	0.00 - 1.50	28 Jun 22 - 28 Jun 22	Machine excavated inspection pit	JCB 3CX	Labourers	BP	28 Jun 22	11.45	200	7.00	200		
Approved	1.50 - 3.50	14 Jul 22 - 14 Jul 22	Cable percussion	Dando 175	KP/MM	BP	14 Jul 22						
DB	3.50 - 11.45	19 Jul 22 - 21 Jul 22	Cable percussion	Dando 175	JT/DH	BP/AD	21 Jul 22						

Ground Level	105.12 mOD
Coordinates	E 555835.68
National Grid	N 224243.04
System	

Date Casing	Time Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
													0.10 (0.10)	+105.02		(TOPSOIL) Dark brown slightly gravelly slightly silty fine to coarse SAND. Gravel is angular to subangular, fine to medium of brick and concrete.				Flush Cover
28 Jun 22	0800	0.00 - 0.10	B 3		0.10	PID	0.0 ppmv (Test 1)						0.70 (0.60)	+104.42		(MADE GROUND) Greyish brown slightly silty very gravelly fine to coarse SAND. Gravel is angular, fine to coarse of brick and concrete with frequent rootlets.				
0.00	Dry	0.10	D 2										1.10 (0.40)	+104.02		(MADE GROUND) Soft greyish brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of flint, chalk and brick with occasional rootlets and clinker.				
		0.10	ES 1		0.30	PID	0.0 ppmv (Test 2)						1.50 (0.40)	+103.62		(MADE GROUND) Firm greyish brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is subangular to subrounded, fine to coarse of flint and chalk with pockets of dark grey organic clay.				
		0.20	D 4										1.80 (0.30)	+103.32		(MADE GROUND) Greyish brown clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete, flint and chalk.				
		0.30	ES 5										2.60 (0.80)	+102.52		(MADE GROUND) Soft dark brown and dark grey gravelly sandy CLAY. Sand is medium to coarse. Gravel is angular, fine to coarse of brick, concrete and flint.	2.50-2.95 Lab split and describe (sample UT16): firm to stiff becoming soft to firm brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is subrounded of chalk.			
		0.40 - 0.70	B 6																	
		0.80	D 7																	
		1.00 - 1.10	B 9		1.00	PID	0.0 ppmv (Test 3)													
		1.00	ES 8																	
28 Jun 22	1800	1.30	D 10																	
0.00	Dry	1.30 - 1.50	B 11		1.50 - 1.95	SPT S	N=11 (2,2/2,3,3,3)	1.50	Dry											
14 Jul 22	1354	1.50 - 1.95	D 13		1.50	PID	ID SM39 Er 59%													
1.50	Dry	1.50 - 2.00	B 14				0.0 ppmv (Test 4)													
		1.50	ES 12																	
		2.00	ES 15		2.00	PID	0.0 ppmv (Test 5)													
		2.50 - 2.95	UT 16	75 blows 78% rec				2.50	Dry											
		2.50 - 3.00	B 19																	
		3.00	D 17		3.00	PID	0.0 ppmv (Test 6)													
		3.00	ES 18																	
14 Jul 22	1700																			
3.00	Dry	3.50 - 3.95	D 20		3.50 - 3.95	SPT S	N=11 (2,3/3,3,3,2)	3.00	Dry											
19 Jul 22	0800						ID SM39 Er 59%													
3.00	Dry																			
		4.00	D 22		4.00	PID	0.0 ppmv (Test 7)													
		4.00 - 4.50	B 23																	
		4.00	ES 21																	
		4.50 - 4.95	D 24		4.50 - 4.95	SPT S	N=17 (1,3/3,4,5,5)	3.00	Dry											
							ID BHDS06 Er 61%						4.80 (1.25)	+100.32		Stiff grey gravelly CLAY. Gravel is rounded to subrounded, fine to medium of chalk and flint. Occasional pockets of firm brown clay. (LOWESTOFT FORMATION)				
		5.00	D 25																	
		5.00 - 5.45	B 26																	
		5.50 - 5.95	UT 27	80 blows 100% rec				4.00	Dry											
19 Jul 22	1800																			
4.00	Dry	5.95 - 6.05	D 28																	
21 Jul 22	0800	6.10	D 29										6.05 (1.15)	+99.07		Stiff grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
4.00	Dry	6.10 - 6.45	B 30																	
		6.50 - 6.95	D 31		6.50 - 6.95	SPT S	N=24 (2,4/5,6,6,7)	6.00	Dry											
		6.50 - 6.95	B 32				ID BHDS06 Er 61%													
		7.10	D 33																	
		7.10 - 7.45	B 34																	
		7.50 - 7.95	UT 35	80 blows 89% rec				7.00	Dry											
		7.95 - 8.05	D 36																	
		8.10	D 37																	
		8.10 - 8.50	B 38																	
		8.50 - 8.95	D 39		8.50 - 8.95	SPT S	N=15 (2,3/3,3,4,5)	7.00	Dry											
		8.50 - 8.95	B 40				ID BHDS06 Er 61%													
		9.10	D 41																	
		9.10 - 9.45	B 42																	
		9.50 - 9.95	UT 43	90 blows 89% rec				7.00	Dry											

Hole continues on next sheet

1 ▽

9.00

General Remarks

Termination Reason: Unable to case off waterstrike and carry out SPTs due to loss of verticality.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:32

AGS

Borehole

CP06

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks
DB	0.00 - 1.50	28 Jun 22 - 28 Jun 22	Machine excavated inspection pit	JCB 3CX	Labourers	BP	28 Jun 22	11.45	200	7.00	200		
Approved	1.50 - 3.50	14 Jul 22 - 14 Jul 22	Cable percussion	Dando 175	KP/MM	BP	14 Jul 22						
DB	3.50 - 11.45	19 Jul 22 - 21 Jul 22	Cable percussion	Dando 175	JT/DH	BP/AD	21 Jul 22						

Ground Level	105.12 mOD
Coordinates	E 555835.68
National Grid	N 224243.04
System	

Date	Time	Casing	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
				10.00	D 44													Stiff grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)			1	
				10.00 - 10.45	B 45																	
				10.50 - 10.95	D 46		10.50 - 10.95	SPT S	N=27 (3,4/5,6,8,8)	7.00	Dry											
				10.50 - 10.95	B 47				ID BHDS06 Er 61%													
				11.00 - 11.45	UT 48	64% rec				7.00	Dry											11.00 SP
21 Jul 22	1800																					
7.00	Dry														11.45	+93.67		END OF EXPLORATORY HOLE				11.45

General Remarks

Termination Reason: Unable to case off waterstrike and carry out SPTs due to loss of verticality.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	10.30	Rose to 8.60 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:32

AGS

Borehole

CP06

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.28 mOD
DB	0.00 - 1.50	01 Jul 22 - 01 Jul 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	01 Jul 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555837.42
	1.50 - 20.05	22 Jul 22 - 26 Jul 22	Cable percussion	Dando 175	JT/DH	AD	26 Jul 22	20.05	200	8.00	200			National Grid	N 224064.82
Approved														System	
DB															

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
01 Jul 22 / 0.00	0800 / Dry												(0.60)			Extremely strong light grey CONCRETE.				Flush Cover
		0.60	D 1		0.60	PID	0.0 ppmv (Test 1)						0.60	+103.68		(MADE GROUND)				
		0.60	ES 2										(0.40)			Brownish grey slightly gravelly silty fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of flint and concrete.				
		1.00	D 3		1.00	PID	0.0 ppmv (Test 2)						1.00	+103.28		(MADE GROUND)				
		1.00	ES 4										(0.50)			Soft mottled grey and brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of chalk, flint, concrete and brick.				
01 Jul 22 / 0.00	1800 / Dry	1.10 - 1.30	B 5													(Reworked LOWESTOFT FORMATION)				
		1.50 - 1.95	UT 101	50 blows 100% rec	1.50	PID	0.0 ppmv (Test 3)						1.50	+102.78		(MADE GROUND)				
22 Jul 22 / 0.00	0800 / Dry	1.50	D 7					1.50	Dry							Firm grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of chalk, flint, sandstone and brick. Cobbles are subangular of brick (up to 110x100x110mm).				
		1.50	ES 6																	
		1.95	D 102		2.00	PID	0.0 ppmv (Test 4)						(1.00)							
		2.00	ES 103																	
		2.10	D 104																	
		2.10 - 2.45	B 105																	
		2.50	D 106		2.50 - 2.95	SPT S	N=19 (3,4/4,4,5,6)	2.00	Dry				2.50	+101.78		Firm orangish brown mottled grey slightly gravelly silty CLAY. Gravel is subangular to rounded, fine to coarse of chalk, flint and mudstone. (LOWESTOFT FORMATION)				
		2.50 - 2.95	B 107				ID BHDS06 Er 61%													
		3.00	ES 108		3.00	PID	0.0 ppmv (Test 5)													
		3.10	D 109																	
		3.10 - 3.45	B 110																	
		3.50	UT 111	70 blows 89% rec				3.00	Dry				(1.80)							
		3.95 - 4.05	D 112																	
		4.10	D 113																	
		4.10 - 4.45	B 114																	
		4.50	D 115		4.50 - 4.95	SPT S	N=28 (3,4/6,6,8,8)	4.00	Dry				4.30	+99.98		Stiff grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of chalk, flint, mudstone and sandstone. Cobbles are subangular of chalk. (LOWESTOFT FORMATION)				5.00
							ID BHDS06 Er 61%													
		5.10	D 116																	
		5.10 - 5.45	B 117																	
		5.50 - 5.95	UT 118	60 blows 100% rec				5.00	Dry											
		5.95	D 119																	
		6.10	D 120																	
		6.10 - 6.45	B 121																	
		6.50	D 122		6.50 - 6.95	SPT S	N=23 (3,4/4,5,6,8)	6.00	Dry											
							ID BHDS06 Er 61%													
		7.10	D 123																	
		7.10 - 7.45	B 124																	
		7.50 - 7.95	UT 125	70 blows 83% rec				7.00	Dry											
		7.95	D 126																	
		8.10	D 127																	
		8.10 - 8.45	B 128																	
		8.50	D 129		8.50 - 8.95	SPT S	N=23 (3,4/5,5,6,7)	8.00	Dry											
		8.50 - 8.95	B 130				ID BHDS06 Er 61%													
		9.10	D 131																	
		9.10 - 9.45	B 132																	
		9.50 - 9.95	UT 133	95 blows 94% rec				8.00	Dry											
		9.95 - 10.05	D 134																	

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:32

AGS

Borehole CP07

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.28 mOD
DB	0.00 - 1.50 1.50 - 20.05	01 Jul 22 - 01 Jul 22 22 Jul 22 - 26 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 175	Labourers JT/DH	VJ AD	01 Jul 22 26 Jul 22	Depth 20.05	Dia. (mm) 200	Depth 8.00	Dia. (mm) 200	Depth	Remarks	Coordinates	E 555837.42
Approved														National Grid	N 224064.82
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring: Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
		10.10 10.10 - 10.45	D 135 B 136										(11.80)			Stiff grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of chalk, flint, mudstone and sandstone. Cobbles are subangular of chalk. (LOWESTOFT FORMATION)				
		10.50	D 137		10.50 - 10.95	SPT S	N=34 (2,4/7,9,9,9) ID BHDS06 Er 61%	8.00	Dry											
		11.10 11.10 - 11.45	D 138 B 139																	
		11.50 - 11.95 11.50	UT 140 D 141	100% rec				8.00	Dry											
22 Jul 22 8.00	1800 Dry																			
		12.10 12.10 - 12.45	D 142 B 143																	
26 Jul 22 8.00	0800 Dry																			
		12.50	D 144		12.50 - 12.95	SPT S	N=36 (4,5/6,8,10,12) ID BHDS06 Er 61%	8.00	Dry											
		13.10 13.10 - 13.45	D 145 B 146																	
		13.50 - 13.95	UT 147	90 blows 100% rec				8.00	Dry											
		13.95 - 14.05 14.10 14.10 - 14.45	D 148 D 149 B 150																	
		14.50 - 14.95	D 151		14.50 - 14.95	SPT S	N=26 (3,4/5,5,7,9) ID BHDS06 Er 61%	8.00	Dry											
		15.10 15.10 - 15.45	D 152 B 153																	
		15.50 15.50 - 15.95	UT NR B 154	100 blows No Recovery				8.00	Dry											
		15.95 16.10 16.10 - 16.45	D 155 D 156 B 157										16.10	+88.18		Stiff locally very stiff dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of chalk, flint, sandstone, mudstone and ironstone. (LOWESTOFT FORMATION)				
		16.50 - 16.95	D 158		16.50 - 16.95	SPT S	N=43 (4,7/7,12,12,12) ID BHDS06 Er 61%	8.00	Dry											
		17.10 17.10 - 17.45	D 159 B 160																	
		17.50 - 17.95	UT 161	71% rec				8.00	Dry											
		17.95 18.10 18.10 - 18.45	D 162 D 163 B 164										(3.95)							
		18.50	D 165		18.50 - 18.86	SPT S	50 (7,10/12,17,21 for 55mm) ID BHDS06 Er 61%	8.00	Dry											
		19.10 19.10 - 19.45	D 166 B 167																	
		19.50 - 19.95	UT 168	100 blows 67% rec				8.00	Dry											
26 Jul 22 8.00	1800 Dry	19.95 - 20.05	D 169																	SP

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:32

AGS

Borehole CP07

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.28 mOD
DB	0.00 - 1.50 1.50 - 20.05	01 Jul 22 - 01 Jul 22 22 Jul 22 - 26 Jul 22	Machine dug inspection pit Cable percussion	JCB 3CX Dando 175	Labourers JT/DH	VJ AD	01 Jul 22 26 Jul 22	Depth 20.05	Dia. (mm) 200	Depth 8.00	Dia. (mm) 200	Depth	Remarks	Coordinates	E 555837.42
Approved														National Grid	N 224064.82
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring: Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													20.05	+84.23		Stiff locally very stiff dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of chalk, flint, sandstone, mudstone and ironstone. (LOWESTOFT FORMATION)				20.05
																END OF EXPLORATORY HOLE				

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:32

AGS

Borehole CP07

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	27 Jun 22 - 27 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	27 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	105.15 mOD
Approved	1.50 - 20.00	27 Jun 22 - 29 Jun 22	Cable percussion	Dando 3000	KP/MM	VJ	29 Jun 22	20.00	200	18.50	200			Coordinates	E 555940.65
DB														National Grid	N 224051.93
														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													(0.30)			(TOPSOIL) Light grey gravelly fine to coarse SAND. Gravel is angular to rounded, fine to coarse of flint.				
27 Jun 22 0.00	0800 Dry	0.10 0.10 - 0.30 0.20 0.30 0.50 0.50	D 1 B 3 ES 2 ES 4 D 6 ES 5		0.20 0.30 0.50	PID PID PID	0.0 ppmv (Test 1) 0.0 ppmv (Test 2) 0.0 ppmv (Test 3)						0.30	+104.85		(MADE GROUND) Firm light grey mottled brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
		1.00 1.10 - 1.30	ES 7 B 8		1.00	PID	0.0 ppmv (Test 4)						(0.70) 1.00	+104.15		(MADE GROUND) Stiff mottled grey brown and reddish brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to rounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
		1.50 1.50 1.50 - 2.00 1.50 2.00	D 11 D 10 B 12 ES 9 D 13		1.50 - 1.95 1.50	SPT S PID	N=15 (2,2/3,3,4,5) ID TH05 Er 57% 0.0 ppmv (Test 5)	1.50	Dry				(0.50) 1.50	+103.65		(MADE GROUND) Firm to stiff mottled grey and brown slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk, flint and concrete. (Reworked LOWESTOFT FORMATION)				
		2.50 - 2.95 2.50 - 3.00	UT 14 B 16	67% rec				2.50					(1.00) 2.50	+102.65		Firm to stiff mottled grey and brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)	2.50-2.95 Lab split and describe (sample UT14): firm becoming stiff grey mottled brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium of chalk.			
27 Jun 22 0.00	1800 Dry	3.00	D 15		3.00	PID	0.0 ppmv (Test 6)													
28 Jun 22 0.00	0800 Dry	3.00	ES 17																	
		3.50 3.50 - 4.00	D 18 B 19		3.50 - 3.95	SPT S	N=12 (2,2/2,2,4,4) ID TH05 Er 57%	3.50	Dry											
		4.50 - 4.95 4.50 - 5.00	UT 20 B 22	90 blows 100% rec				4.50					(3.00)							
		5.00 5.00	D 21 ES 29		5.00	PID	0.0 ppmv (Test 7)													
		5.50 5.50 - 6.00	D 23 B 24		5.50 - 5.95	SPT S	N=15 (2,3/3,4,4,4) ID TH05 Er 57%	5.50	Dry				5.50	+99.65		Firm to stiff dark grey mottled greenish brown slightly gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		6.00 6.00 - 6.50	D 25 B 26																	
		6.50 - 6.95	UT NR	89 blows No Recovery				6.50												
		7.00 7.00 - 7.50	D 27 B 28																	
		8.00 - 8.45 8.00 - 8.50	UT NR B 30	95 blows No Recovery				8.00					(4.10)							
		8.50 8.50 - 9.00	D 31 B 32		8.50 - 8.95	SPT S	N=31 (3,4/6,7,8,10) ID TH05 Er 57%	8.50	Dry											
		9.00	D 33																	
		9.50 9.50 - 10.00	D 34 B 35		9.50 - 9.95	SPT S	N=35 (4,5/7,8,9,11) ID TH05 Er 57%	9.50	Dry				9.60	+95.55		Stiff dark grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)	9.50-9.60 Driller notes sandy gravel.			

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:33

AGS

Borehole CP08

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	27 Jun 22 - 27 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	27 Jun 22							Ground Level	105.15 mOD
Approved	1.50 - 20.00	27 Jun 22 - 29 Jun 22	Cable percussion	Dando 3000	KP/MM	VJ	29 Jun 22	20.00	200	18.50	200			Coordinates	E 555940.65
DB														National Grid	N 224051.93
														System	

Date / Time Casing / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
															Stiff dark grey slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
	10.50 - 10.95	UT 36	84 blows 100% rec				10.50												
	10.50 - 11.00	B 38																	
	11.00	D 37																	
	11.50	D 39		11.50 - 11.95	SPT S	N=29 (5,5/5,5,9,10)	11.50	Dry											
	11.50 - 12.00	B 40				ID TH05 Er 57%													
	12.00	D 41																	
	12.50 - 12.95	UT 42	98 blows 44% rec				12.50												
	12.50 - 13.00	B 44																	
	13.00	D 43																	
	13.50 - 13.95	D 45		13.50 - 13.95	SPT S	N=33 (4,4/9,8,8,8)	13.50	Dry											
	13.50 - 14.00	B 46				ID TH05 Er 57%													
	14.50 - 14.95	UT 47	89 blows 100% rec				14.50												
	14.50 - 15.00	B 49																	
28 Jun 22 1800 / 14.50 Dry												(10.40)							
29 Jun 22 0800 / 14.50 Dry	15.00	D 48																	
	15.50	D 50		15.50 - 15.95	SPT S	N=38 (5,5/8,9,10,11)	15.50	Dry											
	15.50 - 16.00	B 51				ID TH05 Er 57%													
	16.50 - 16.95	UT 52	89 blows 71% rec				16.50												
	16.50 - 17.00	B 54																	
	17.00	D 53																	
	17.00	D 55																	
	17.50	D 56		17.50 - 17.95	SPT S	N=46 (5,8/11,10,12,13)	17.50	Dry											
	17.50 - 18.00	B 57				ID TH05 Er 57%													
	18.50 - 18.95	UT 58	95 blows 67% rec				17.50												
	18.50 - 19.00	B 59																	
	19.50	D 60		19.50 - 19.95	SPT S	N=46 (5,8/11,10,12,13)	19.50	Dry											
29 Jun 22 1800 / 18.50 Dry						ID TH05 Er 57%						20.00	+85.15		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
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AGS

Borehole CP08

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.90 mOD
DB	0.00 - 1.50 1.50 - 20.00	24 Jun 22 - 24 Jun 22 06 Jul 22 - 08 Jul 22	Machine dug inspection pit Cable Percussion	JCB 3CX Dando 175	Labourers KP/MM	BP PR	24 Jun 22 08 Jul 22	Depth 20.00	Dia. (mm) 200	Depth 20.00	Dia. (mm) 200	Depth	Remarks	Coordinates	E 555918.71
Approved														National Grid	N 224118.96
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													0.10 (0.10)	+104.80		(MADE GROUND) Gravel angular medium to coarse Gravel of brick and concrete with high cobble content. Cobbles are of brick and concrete.	0.25-0.35 Bituminous material.			Flush Cover
24 Jun 22 0.00	0800 Dry	0.10 - 0.60 0.10 0.30	B 5 ES 1 ES 2		0.10 0.30	PID PID	0.0 ppmv (Test 1) 0.0 ppmv (Test 2)						0.70 (0.60)	+104.20		(MADE GROUND) Reinforced CONCRETE with 6mm rebar.				0.50
		0.50 0.60 0.80	ES 3 D 4 D 6		0.50	PID	0.0 ppmv (Test 3)						1.50 (0.80)	+103.40		Firm light brown mottled grey gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint with occasional rootlets and pockets of soft grey clay. (Possible reworked LOWESTOFT FORMATION)				
		0.90 - 1.00 1.00	B 7 ES 8		1.00	PID	0.0 ppmv (Test 4)													
24 Jun 22 0.00	1800 Dry	1.30 1.30 - 1.50	D 9 B 10																	
06 Jul 22 1.50	1200 Dry	1.50 - 1.95 1.50 - 2.00 1.50	D 12 B 13 ES 11		1.50 - 1.95 1.50	SPT S PID	N=10 (2,2/2,2,3,3) ID TH05 Er 57% 0.0 ppmv (Test 5)	1.50	Dry												
		2.00 2.00	D 14 ES 17		2.00	PID	0.0 ppmv (Test 6)													
		2.50 - 2.95 2.50 - 3.00	UT 15 B 18	85 blows 62% rec				2.50	Dry				2.90 (1.40)	+102.00		Firm to stiff dark greyish brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)	2.50-2.95 Lab split and describe (sample UT15): stiff brown slightly sandy gravelly CLAY. Gravel is fine to medium subrounded becoming fine to coarse subangular to subrounded. 1no. subrounded coarse gravel at 2.55m to 2.63m.			
		3.00 3.00	D 16 ES 19		3.00	PID	0.0 ppmv (Test 7)													
		3.50 3.50 - 4.00	D 20 B 21		3.50 - 3.95	SPT S	N=10 (4,4/3,3,2,2) ID TH05 Er 57%	3.50	Dry				4.20 (1.30)	+100.70		Stiff dark brownish grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and siltstone. (LOWESTOFT FORMATION)				4.50
		4.50 - 4.95 4.50 - 5.00	UT 22 B 25	78 blows 78% rec				4.50	Dry											
		5.00 5.00	D 23 ES 24		5.00	PID	0.0 ppmv (Test 8)													
		5.50 5.50 - 6.00	D 26 B 27		5.50 - 5.95	SPT S	N=15 (2,3/3,4,4,4) ID TH05 Er 57%	5.50	Dry											
		6.50 - 6.95 6.50 - 7.00	UT 28 B 30	86 blows 100% rec				6.50	Dry											
		7.00	D 29																	7.00 SP
06 Jul 22 7.50	1700 Dry	7.50	D 31		7.50 - 7.95	SPT S	N=26 (4,4/5,6,7,8) ID TH05 Er 57%	7.50	Dry				(6.30)							
07 Jul 22 7.50	0800 Dry	7.50 - 8.00	B 32																	
		8.50 - 8.95 8.50 - 9.00	UT 33 B 35	98 blows 78% rec				8.50	Dry											
		9.00	D 34																	
		9.50 9.50 - 10.00	D 36 B 37		9.50 - 9.95	SPT S	N=18 (3,3/4,4,5,5) ID TH05 Er 57%	9.50	Dry											

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:33

AGS

Borehole
CP09

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.90 mOD
DB	0.00 - 1.50 1.50 - 20.00	24 Jun 22 - 24 Jun 22 06 Jul 22 - 08 Jul 22	Machine dug inspection pit Cable Percussion	JCB 3CX Dando 175	Labourers KP/MM	BP PR	24 Jun 22 08 Jul 22	Depth 20.00	Dia. (mm) 200	Depth 20.00	Dia. (mm) 200	Depth 16.50 - 16.50	Remarks UT sample attempt refused.	Coordinates	E 555918.71
Approved DB														National Grid	N 224118.96
														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
																Stiff dark brownish grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and siltstone. (LOWESTOFT FORMATION)				
		10.50 - 10.95 10.50 - 11.00	UT NR B 38	98 blows No Recovery				10.50	Dry				10.50 (1.00)	+94.40		Stiff to very stiff dark brownish grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and siltstone. (LOWESTOFT FORMATION)				
		11.50 11.50 - 12.00	D 39 B 40		11.50 - 11.95	SPT S	N=34 (5,7/6,8,8,12) ID TH05 Er 57%	11.50	Dry											
		12.50 - 12.85 12.50 - 13.00	UT NR B 41	100 blows No Recovery				12.50	Dry											
		13.00	D 42																	
		13.50 13.50 - 14.00	D 43 B 44		13.50 - 13.95	SPT S	N=27 (3,5/6,6,7,8) ID TH05 Er 57%	13.50	Dry											
		14.50 - 14.60 14.50 - 15.00	UT NR B 45	100 blows No Recovery				14.50	Dry											
		15.50 15.50 - 16.00	D 46 B 47		15.50 - 15.83	SPT S	50 (6,7/10,21,19 for 30mm) ID TH05 Er 57%	15.50	Dry				(9.50)							
		16.50 - 16.65 16.50 - 17.00	UT NR B 48	100 blows No Recovery				16.50	Dry											
07 Jul 22 17.00	1700 Dry																			
08 Jul 22 17.00	0800 Dry	17.00 17.00 - 17.50	D 49 B 50		17.00 - 17.32	SPT S	50 (3,8/15,21,14 for 20mm) ID TH05 Er 57%	17.00	Dry											
		18.00 18.00 - 18.50	D 51 B 52		18.00 - 18.45	SPT S	N=36 (5,7/6,7,10,13) ID TH05 Er 57%	18.00	Dry											
		19.00 19.00 - 20.00	D 53 B 54		19.00 - 19.45	SPT S	N=34 (3,5/6,7,9,12) ID TH05 Er 57%	19.00	Dry											
08 Jul 22 20.00	1700 Dry												20.00	+84.90		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:33

AGS

Borehole CP09

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB/CP	0.00 - 0.51	29 Jun 22 - 29 Jun 22	Concrete coring	Concrete corer	Labourers	KG	29 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	104.88 mOD
	0.51 - 1.50	29 Jun 22 - 29 Jun 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	KG	29 Jun 22	20.00	200	20.00	200			Coordinates	E 555962.19
Approved	1.50 - 20.00	12 Jul 22 - 14 Jul 22	Cable percussion	Dando 175	KP/MM	BP	14 Jul 22							National Grid	N 224166.78
DB														System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
29 Jun 22 / 0.00	0800 / Dry												(0.51)			CONCRETE				Flush Cover
		0.51	D 4		0.51	PID	0.0 ppmv (Test 1)						0.51	+104.37		(MADE GROUND)				0.50
		0.51	ES 1										(0.27)			Brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to rounded, fine to medium of flint.				
		1.00	ES 2		1.00	PID	0.0 ppmv (Test 2)						0.78	+104.10		(MADE GROUND)				
29 Jun 22 / 0.00	1800 / Dry												(0.72)			Firm yellowish brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of flint and chalk.				
12 Jul 22 / 1.50	1213 / Dry	1.50 - 1.95	D 5		1.50 - 1.95	SPT S	N=8 (2,2/2,2,2,2)	1.50	Dry				1.50	+103.38		(MADE GROUND)				
		1.50 - 2.00	B 6		1.50	PID	ID SM39 Er 59%									Firm brownish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick, flint, chalk and concrete.				
		1.50	ES 3				0.2 ppmv (Test 3)						(0.50)							
		2.00	ES 7		2.00	PID	0.0 ppmv (Test 4)						2.00	+102.88		Very stiff light brown mottled grey gravelly CLAY. Gravel is angular to subangular, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.50 - 2.95	UT NR	67 blows No Recovery				2.50	Dry											
		2.50 - 3.00	B 8																	
		3.00	D 9		3.00	PID	0.0 ppmv (Test 5)						(2.00)				3.00-3.60 Stiff			
		3.00	ES 12																	
		3.50 - 3.95	D 10		3.50 - 3.95	SPT S	N=12 (2,2/2,3,3,4)	3.50	Damp								3.50 Becoming grey mottled greyish brown.		1	
		3.50 - 4.00	B 11				ID SM39 Er 59%													
		4.00	D 13										4.00	+100.88		Very stiff grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint with pockets of yellowish brown sand and occasional mudstone. (LOWESTOFT FORMATION)				
		4.50 - 4.95	UT 14	76 blows 89% rec				4.50	Dry				(1.00)							
		4.50 - 5.00	B 16																	
		5.00	D 15										5.00	+99.88		Loose brown, white and grey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)			1	
		5.50	D 17		5.50 - 5.95	SPT S	N=9 (2,2/2,2,3,2)	5.50	3.50				(1.00)				5.50-6.00 PSD result indicates very sandy gravel			
		5.50 - 6.00	B 18				ID SM39 Er 59%													
12 Jul 22 / 6.00	1700 / 3.50																			
13 Jul 22 / 6.00	0800 / 3.50												6.00	+98.88		Very stiff grey mottled greyish brown very gravelly CLAY. Gravel is angular to subangular, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)				
		6.50 - 6.95	UT 19	61 blows 71% rec				6.50	Damp											
		6.50 - 7.00	B 20														6.80 Pockets of yellowish brown sand and occasional fine subrounded claystone.			
		7.00	D 21																	
		7.50 - 7.95	D 22		7.50 - 7.95	SPT S	N=17 (2,3/4,4,4,5)	7.50	Damp											
		7.50 - 8.00	B 23				ID SM39 Er 59%						(3.50)							
		8.00	D 24																	
		8.50 - 8.95	UT 25	75 blows 100% rec				8.50	Damp								8.50-8.95 UUT test indicates medium strength. Cannot account for apparent discrepancy between lab derived strength and field assessment of consistency. 8.95-9.50 Becoming stiff.			
		8.50 - 9.00	B 27																	
		8.95 - 9.00	D 26																	
		9.50	D 28		9.50 - 9.95	SPT S	N=26 (3,8/5,5,8,8)	9.50	Dry				9.50	+95.38		Stiff grey sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and occasional angular to subangular fine to medium claystone. (LOWESTOFT FORMATION)			2	10.00
		9.50 - 10.00	B 29													Hole continues on next sheet				

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	5.00	Rose to 3.50 m after 20 minutes. Seepage	6.00
2	10.00	Rose to 9.50 m after 20 minutes. Medium inflow	11.00

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:34

AGS

Borehole CP10

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks
DB/CP	0.00 - 0.51	29 Jun 22 - 29 Jun 22	Concrete coring	Concrete corer	Labourers	KG	29 Jun 22						
	0.51 - 1.50	29 Jun 22 - 29 Jun 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	KG	29 Jun 22						
Approved	1.50 - 20.00	12 Jul 22 - 14 Jul 22	Cable percussion	Dando 175	KP/MM	BP	14 Jul 22	20.00	200	20.00	200		
DB													

Ground Level	104.88 mOD
Coordinates	E 555962.19
National Grid	N 224166.78
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
													(1.20)			Stiff grey sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and occasional angular to subangular fine to medium claystone. (LOWESTOFT FORMATION)				
		10.50 - 10.95	UT 30	25 blows 64% rec				10.50	5.60											
		10.50 - 11.00	B 32										10.70	+94.18		Light grey and grey clayey fine to coarse SAND. (LOWESTOFT FORMATION)				
													(0.30)							
		11.00	D 31										11.00	+93.88		Very stiff slightly sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk, mudstone and flint. Sand is fine to coarse. Pockets (up to 300x100mm) of very sandy clay. (LOWESTOFT FORMATION)	11.00-11.50 Sandy gravelly clay.			11.00 SP
		11.50 - 11.95	D 33		11.50 - 11.95	SPT S	N=25 (2,3/5,6,6,8)	11.50	Dry											
		11.50 - 12.00	B 34				ID SM39 Er 59%													
													(2.50)							
		12.50 - 12.95	UT 35	100 blows 100% rec				12.50	Damp											
		12.95 - 13.00	D 36																	
		13.00 - 13.50	B 37																	
		13.50 - 13.95	D 38		13.50 - 13.95	SPT S	N=23 (4,4/5,5,6,7)	13.50	Dry				13.50	+91.38		Very stiff dark grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk, mudstone and flint. (LOWESTOFT FORMATION)				
		13.50 - 14.00	B 39				ID SM39 Er 59%													
		14.50 - 14.95	UT 40	100 blows 100% rec				14.50	Dry				(2.00)				14.50-14.95 UUT test indicates medium strength. Cannot account for apparent discrepancy between lab derived strength and field assessment of consistency.			
		14.50 - 15.00	B 42																	
		14.95 - 15.00	D 41																	
		15.50 - 15.95	D 43		15.50 - 15.95	SPT S	N=25 (3,5/6,6,6,7)	15.50	Dry				15.50	+89.38		Very stiff grey gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		15.50 - 16.00	B 44				ID SM39 Er 59%													
		16.50 - 16.95	UT 45	98 blows 89% rec				16.50	Dry											
		16.50 - 17.00	B 47																	
		16.95 - 17.00	D 46																	
13 Jul 22	1700																			
17.50	Dry	17.50	D 48		17.50 - 17.95	SPT S	N=37 (3,4/7,8,9,13)	17.50	6.50											
14 Jul 22	0800	17.50 - 18.00	B 49				ID SM39 Er 59%													
17.50	Dry												(4.50)							
		18.50 - 18.95	UT 50	65 blows 89% rec				18.50	Dry								18.50-18.95 UUT test indicates medium strength. Cannot account for apparent discrepancy between lab derived strength and field assessment of consistency.			
		18.50 - 19.00	B 52																	
		18.95 - 19.00	D 51																	
		19.50 - 20.00	D 53		19.50 - 19.95	SPT S	N=44 (4,6/8,9,13,14)	19.50	Dry											
							ID SM39 Er 59%													
14 Jul 22	1300																			
20.00	Dry												20.00	+84.88		END OF EXPLORATORY HOLE				20.00

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:34

AGS

Borehole

CP10

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks: Depth	Depth Related Remarks: Remarks	Ground Level	104.64 mOD
DB	0.00 - 1.50	07 Jul 22 - 07 Jul 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	07 Jul 22	20.00	200	12.00	200			Coordinates	E 555979.55
Approved	1.50 - 20.60	07 Jul 22 - 08 Jul 22	Cable percussion	Dando 175	JT/DH	VJ/BP	08 Jul 22							National Grid	N 224206.56
DB														System	

Date / Time: Casing	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
07 Jul 22 0800													(0.60)			Extremely strong light grey CONCRETE.				Flush Cover
0.00 Dry													0.60	+104.04						
													(0.20)			(MADE GROUND) Dark brown gravelly fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse of brick, concrete and flint. Cobbles are angular of brick (100x100x70mm).				
													0.80	+103.84		(MADE GROUND) Soft grey mottled light brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of flint chalk and brick. (Reworked LOWESTOFT FORMATION)				
		1.70 - 2.00	B 7																	
		2.00 - 2.45	UT 10	30 blows 100% rec	2.00	PID	0.0 ppmv (Test 1)						(2.20)							
		2.00	D 8					2.00	Dry											
		2.00	ES 9																	
		2.45 - 2.55	D 11																	
		2.50	B 12																	
		3.00	D 13		3.00 - 3.45	SPT S	N=20 (2,3/4,4,5,7) ID SM39 Er 59%						3.00	+101.64		Stiff dark greenish brown mottled dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		3.00	D 14					3.00	Dry											
		3.50	D 15																	
		3.50 - 3.95	B 16																	
		4.00 - 4.45	UT 17	50 blows 93% rec				3.00	Dry				(2.00)							
		4.45 - 4.55	D 18																	
		4.50 - 4.95	B 19																	
		5.00 - 5.45	D 21		5.00 - 5.45	SPT S	N=11 (1,1/2,2,3,4) ID SM39 Er 59%						5.00	+99.64		Stiff dark brownish grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk. (LOWESTOFT FORMATION)				
		5.00	D 20					3.00	Dry											
		5.50 - 5.95	B 22																	
		6.00 - 6.45	UT 24	45 blows 100% rec				3.00	Dry											
		6.00	D 23																	
		6.45 - 6.55	D 25																	
		6.50 - 6.95	B 26																	
		7.00 - 7.45	D 28		7.00 - 7.45	SPT S	N=18 (1,3/3,4,4,7) ID SM39 Er 59%	3.00	Dry											
		7.00	D 27																	
		7.50 - 7.95	B 29																	
													(5.45)							
		8.00 - 8.45	UT 31	70 blows 100% rec				8.00	Dry											
		8.00	D 30																	
		8.45 - 8.55	D 32																	
		8.50 - 8.95	B 33																	
		9.00 - 9.45	D 35		9.00 - 9.45	SPT S	N=16 (2,3/4,4,4,4) ID SM39 Er 59%	9.00	Dry											
		9.00	D 34																	
		9.50 - 9.95	B 36																	

Hole continues on next sheet

General Remarks

Unable to receive samples between 0.00m and 1.50m due to small diameter of concrete core.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:33:34

AGS

Borehole CP11

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.64 mOD
DB	0.00 - 1.50	07 Jul 22 - 07 Jul 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	07 Jul 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555979.55
	1.50 - 20.60	07 Jul 22 - 08 Jul 22	Cable percussion	Dando 175	JT/DH	VJ/BP	08 Jul 22	20.00	200	12.00	200			National Grid	N 224206.56
Approved														System	
DB															

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
		10.00 - 10.45	UT 38	50 blows 100% rec				10.00	Dry							Stiff dark brownish grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk. (LOWESTOFT FORMATION)				
		10.00	D 37																	
		10.45 - 10.55	D 39										10.45	+94.19						
		10.50 - 10.95	B 40													Stiff to very stiff light brownish grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		11.00 - 11.45	D 42		11.00 - 11.45	SPT S	N=27 (2,4/4,6,7,10)	11.00	Dry											
		11.00	D 41				ID SM39 Er 59%													
		11.50 - 11.95	B 43																	
		12.00 - 12.45	UT 45	65 blows 100% rec				12.00	Dry											
		12.00	D 44																	
		12.45 - 12.55	D 46																	
		12.50 - 12.75	B 47																	
		13.00 - 13.45	D 49		13.00 - 13.45	SPT S	N=43 (2,4/7,10,13,13)	12.00	Dry											
		13.00	D 48				ID SM39 Er 59%													
		13.50 - 13.95	B 50										(5.55)							
		14.00 - 14.45	UT 52	30 blows 94% rec				12.00	Dry											
		14.00	D 51																	
		14.45 - 14.55	D 53																	
		14.50 - 14.95	B 54																	
		15.00 - 15.45	D 56		15.00 - 15.45	SPT S	N=28 (2,3/4,7,8,9)	12.00	Dry											
		15.00	D 55				ID SM39 Er 59%													
		15.55 - 15.95	B 57																	
07 Jul 22	1800																			
12.00	Dry																			
08 Jul 22	0800	16.00 - 16.45	UT 59	80 blows 100% rec				12.00	Dry				16.00	+88.64						16.00
12.00	Dry	16.00	D 58													Stiff dark grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint with frequent pockets (up to 30x30x20mm) of yellowish brown sand. (LOWESTOFT FORMATION)				
		16.45 - 16.50	D 60																	
		16.50 - 16.95	B 61																	
		17.00 - 17.45	D 63		17.00 - 17.45	SPT S	N=45 (4,8/11,11,11,12)	12.00	Dry											
		17.00	D 62				ID BHDS06 Er 61%													
		17.50 - 17.95	B 64										(3.30)							
		18.00 - 18.45	UT 66	70 blows 100% rec				12.00	Dry								18.00-18.30 Frequent flint gravel and 1no. flint cobble.			
		18.00	D 65																	
		18.50 - 18.95	B 67																	18.50 SP
		19.00 - 19.45	D 69		19.00 - 19.45	SPT S	N=37 (3,4/8,9,9,11)	12.00	Dry											
		19.00	D 68				ID BHDS06 Er 61%													
		19.50 - 19.95	B 70										19.30	+85.34						
													(0.90)							
																Hole continues on next sheet				

General Remarks

Unable to receive samples between 0.00m and 1.50m due to small diameter of concrete core.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	19.30	Rose to 16.35 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:34

AGS

Borehole

CP11

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks: Depth	Depth Related Remarks: Remarks
DB	0.00 - 1.50	07 Jul 22 - 07 Jul 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	07 Jul 22	20.00	200	12.00	200		
Approved	1.50 - 20.60	07 Jul 22 - 08 Jul 22	Cable percussion	Dando 175	JT/DH	VJ/BP	08 Jul 22						
DB													

Ground Level	104.64 mOD
Coordinates	E 555979.55
National Grid	N 224206.56
System	

Date / Time: Casing	Date / Time: Water	Samples: Depth	Samples: Type & No.	Samples: Records	Field Tests: Depth	Field Tests: Type	Field Tests: Records	Samp / Test: Casing	Samp / Test: Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Strata Description: Detail	Chisel.	Water Entry	Backfill
		20.00	D 71										20.20	+84.44		Dense dark greenish brown slightly clayey fine to coarse SAND. (LOWESTOFT FORMATION)				
08 Jul 22 12.00	1800 Dry	20.30 - 20.60	D 72 B 73										(0.40)			Stiff brownish grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
													20.60	+84.04		END OF EXPLORATORY HOLE				20.60

General Remarks

Unable to receive samples between 0.00m and 1.50m due to small diameter of concrete core.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:34

AGS

Borehole

CP11

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	105.24 mOD
DB	0.00 - 1.50	26 Jul 22 - 26 Jul 22	Machine dug inspection pit	JCB 3CX	JT/DH	AD	27 Jul 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555863.51
	1.50 - 4.05	26 Jul 22 - 26 Jul 22	Cable percussion	Dando 175	JT/DH	AD	27 Jul 22	4.05	200					National Grid	N 224183.78
Approved														System	
DB															

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring: Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
26 Jul 22 / 0.00	0800 / Dry												(1.80)			(MADE GROUND) Dark brown gravelly fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of concrete, flint, brick and macadam.				
													1.80	+103.44		(MADE GROUND) Firm brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, flint, concrete and chalk.				
		2.00 - 2.45	UT 1	55 blows 100% rec				0.00	Dry				(0.80)				2.40-2.60 Dark brown bituminous material.			
		2.45 - 2.55	D 2										2.60	+102.64		(MADE GROUND) Firm locally stiff orangish brown mottled grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of brick, flint, concrete and chalk. Cobbles are subangular of brick (up to 120x110x100mm).				
		3.50 - 3.95	UT 3	60 blows 78% rec				0.00	Dry				(1.45)							
26 Jul 22 / 0.00	1800 / Dry	3.95 - 4.05	D 4										4.05	+101.19		END OF EXPLORATORY HOLE				4.05

General Remarks

Carried out adjacent to RC02 in order to obtain undisturbed samples at 2.00m and 3.50m.

Hard Boring / Chiselling

Depths | Duration (mins) | Tool

Groundwater Entries

No. | Depth | Remarks | Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:33:35

AGS

Borehole

RC02A

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	106.23 mOD
DB	0.00 - 1.50	14 Jun 22 - 14 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	14 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555738.78
	1.50 - 2.50	21 Jun 22 - 21 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	22 Jun 22	26.50	150	3.00	150	1.50 - 4.95	SPTs erroneously undertaken	National Grid	N 224301.59
Approved	2.50 - 26.50	21 Jun 22 - 27 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	24 Jun 22							System	
DB															

Date / Time Casing / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details		Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
14 Jun 22 0800 / 0.00 Dry	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)															Flush Cover
	0.30	ES 2		0.30	PID	0.0 ppmv (Test 2)								(0.80)							0.30
	0.50	D 3		0.50	PID	0.0 ppmv (Test 3)															
	0.50 - 0.80	B 5																			
	0.50	ES 4												0.80	+105.43		(MADE GROUND) Slightly clayey gravelly fine to coarse SAND. Gravel is angular to subangular, fine to coarse of brick, flint and concrete.				
	1.00	D 6																			
	1.00 - 1.50	B 7												(0.70)							
14 Jun 22 1800 / 0.00 Dry																					
	1.50	D 101		1.50 - 1.88	SPT S	13 (4,5/4,4,5 for 75mm) ID SM39 Er 59%	1.50	Dry						1.50	+104.73		(MADE GROUND) Slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, flint and concrete.				
21 Jun 22 0700 / 0.00 Dry	1.50	D 8		1.50	PID	0.0 ppmv (Test 4)															
	1.50	ES 9																			
	1.50 - 2.50	DYS	100% rec											(1.00)							
	2.50	D 102		2.50 - 2.95	SPT S	N=39 (6,7/7,10,9,13) ID SM39 Er 59%	1.50	Dry						2.50	+103.73		(MADE GROUND) Very stiff brown mottled bluish grey slightly sandy gravelly CLAY with rare pockets (12x15x12mm) of black silt (possibly ash). Sand is fine. Gravel is angular to subangular, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
									2.50 - 3.50 (101mm)	59 NA NA		Water flush: 2.50 - 3.50	80% rec				Firm brown slightly sandy gravelly CLAY. Sand is fine. Gravel is subangular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)	2.50-2.91 AZCL.			2.50
	3.50	D 103		3.50 - 3.95	SPT S	N=24 (7,7/5,6,6,7) ID SM39 Er 59%	3.00	2.50													
									3.50 - 4.50 (101mm)	81 NA NA		Water with dry powder polymer flush: 3.50 - 4.50	85% rec	(3.05)							
	4.50	D 104		4.50 - 4.95	SPT S	N=21 (3,4/5,5,5,6) ID SM39 Er 59%	3.00	2.50													
									4.50 - 5.50 (101mm)	100 NA NA		Water with dry powder polymer flush: 4.50 - 5.50	95% rec								
	5.00 - 5.58	W 090822																			
21 Jun 22 1630 / 3.00 3.60																					
	5.50	D 105																			5.50 SP
22 Jun 22 0715 / 3.00 3.60														5.55	+100.68		Stiff locally very stiff grey gravelly silty CLAY with low cobble content and rare medium to coarse sized gravels of orange ironstone. Gravel is subangular to subrounded, fine to coarse of flint and chalk. Cobbles are subangular of chalk. (LOWESTOFT FORMATION)	6.50-6.60 AZCL.			
									5.50 - 6.50 (101mm)	100 NA NA		Water flush: 5.50 - 6.50	95% rec								
	6.60	D 106																			
	7.10	D 107																			
									6.50 - 8.00 (101mm)	93 NA NA		Water with dry powder polymer flush: 6.50 - 8.00	95% rec								
	7.50 - 7.80	C 108																			
	7.80	D 109																			
	8.30	D 110																			
	8.50 - 8.80	C 111																			
	8.80	D 112							8.00 - 9.50 (101mm)	98 NA NA		Water with dry powder polymer flush: 8.00 - 9.50	100% rec	(6.95)							
	9.20	D 113																			
	9.50 - 9.80	C 114																			

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:35:37

AGS

Borehole

RC01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	106.23 mOD
DB	0.00 - 1.50	14 Jun 22 - 14 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	14 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555738.78
	1.50 - 2.50	21 Jul 22 - 21 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	22 Jun 22							National Grid	N 224301.59
Approved	2.50 - 26.50	21 Jun 22 - 27 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	24 Jun 22	26.50	150	3.00	150			System	
DB															

Date / Time Casing / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added: Flush details		Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
	10.00	D 115							9.50 - 11.00 (101mm)	100 NA NA		Water flush: 9.50 - 11.00	95% rec				Stiff locally very stiff grey gravelly silty CLAY with low cobble content and rare medium to coarse sized gravels of orange ironstone. Gravel is subangular to subrounded, fine to coarse of flint and chalk. Cobbles are subangular of chalk. (LOWESTOFT FORMATION)	10.13 Fragment of lignite (5x12x15mm).			
	10.50	D 116																			
	10.50 - 10.80	C 117																			
	10.80	D 118																			
	11.00	ES 119		11.00	PID	0.0 ppmv (Test 5)															
	11.30	D 120																			
	11.50 - 11.80	C 121							11.00 - 12.50 (101mm)	100 NA NA		Water with dry powder polymer flush: 11.00 - 12.50	95% rec								
	11.80	D 122																			
	12.30	D 123																			
														12.50	+93.73		NO RECOVERY (Driller notes clayey gravels)				
									12.50 - 14.00 (101mm)	0 NA NA		Water with dry powder polymer flush: 12.50 - 14.00	90% rec	(1.50)							
	14.00 - 14.22	C 124												14.00	+92.23		Stiff to very stiff light grey to grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)	14.00-14.22 Split and describe (sample C124) aligned with stratum description.			
	14.30	D 125												(0.36)							
22 Jun 22 1630									14.00 - 14.75 (101mm)	80 NA NA		Water with dry powder polymer flush: 14.00 - 14.75	100% rec	14.36	+91.87		Light grey slightly sandy clayey subrounded medium to coarse GRAVEL of flint and chalk. Sand is fine to coarse. (LOWESTOFT FORMATION)	14.60-14.75 AZCL.			
3.00 3.10														(0.39)							
23 Jun 22 0715				14.75 - 15.20	SPT S	N=50 (5,11/10,12,13,15) ID TH59 Er 65%	0.00	2.10			NA			14.75	+91.48		Minimal recovery. Recovery is of light grey slightly sandy clayey subrounded medium to coarse GRAVEL of flint and chalk. Sand is medium to coarse. (LOWESTOFT FORMATION)				
3.00 2.10									14.75 - 15.50 (101mm)	19 NA NA	NA NA NA			(0.75)							
				15.50 - 15.95	SPT S	N=45 (3,7/7,11,13,14) ID TH59 Er 65%	3.00	0.70						15.50	+90.73		Partial recovery. Recovery is of light grey and white slightly sandy silty subrounded medium to coarse GRAVEL of flint and chalk. Sand is medium to coarse. (LOWESTOFT FORMATION)				
									15.50 - 16.50 (101mm)	33 NA NA		Water with dry powder polymer flush: 14.75 - 17.50	80% rec	(1.42)							
	16.60	D 126		16.50 - 16.90	SPT S	50 (7,7/15,18,13,4 for 25mm) ID TH59 Er 65%	3.00	1.10										16.50-16.92 Assessed 300mm core loss			
									16.50 - 17.50 (101mm)	70 NA NA				16.92	+89.31		Very stiff grey to brownish grey gravelly silty CLAY. Gravel is subrounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)				
	17.03 - 17.26	C 127																			
	17.55 - 17.85	C 128																			
	17.90	D 129							17.50 - 18.50 (101mm)	100 NA NA											
	18.50	D 130																			
														(4.18)							
	19.10 - 19.40	C 131							18.50 - 20.00 (101mm)	100 NA NA											
	19.50	D 132																			

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:37

AGS

Borehole
RC01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	14 Jun 22 - 14 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	14 Jun 22	26.50	150	3.00	150			Ground Level	106.23 mOD
	1.50 - 2.50	21 Jul 22 - 21 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	22 Jun 22							Coordinates	E 555738.78
Approved	2.50 - 26.50	21 Jun 22 - 27 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	24 Jun 22							National Grid	N 224301.59
DB														System	

Date / Time Casing / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing / Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details		Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
	20.00	D 133														Very stiff grey to brownish grey gravelly silty CLAY. Gravel is subrounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)	20.25-20.56 Split and describe (sample C134) aligned with stratum description. 20.48m to 20.54m: 1no. subrounded coarse gravel of flint and 1no. subangular coarse gravel of moderately weak grey fine grained possible limestone			
	20.25 - 20.56	C 134																		
	20.60	D 135						20.00 - 21.50 (101mm)	98 NA NA											
	21.10	D 136											21.10	+85.13						
	21.20 - 21.50	C 137														Very stiff locally very stiff dark grey slightly sandy slightly gravelly CLAY with rare fossils fragments (2x3x4mm) and rare fragments (2x1x3mm) of possible lignite. Sand is medium to coarse. Gravel is subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)				
	21.60	D 138																		
	22.20 - 22.50	C 139						21.50 - 23.00 (101mm)	100 NA NA		Water with dry powder polymer flush: 17.50 - 26.50	90% rec	(2.18)							
	22.60	D 140																		
	23.01 - 23.28	C 141																		
	23.30	D 142											23.28	+82.95		Very stiff dark brown silty micaceous CLAY with rare lenses (1x5x5mm) of fine light brown sand. (LONDON CLAY FORMATION)				
	23.80	D 143						23.00 - 24.50 (101mm)	100 NA NA											
	24.00 - 24.31	C 144																		
	24.40	D 145																		
23 Jun 22 1700 / 3.00 2.70								24.50 - 25.00 (101mm)	100 NA NA				(2.92)							
24 Jun 22 0715 / 3.00 2.70	25.10 - 25.40	C 146																		
	25.50	D 147						25.00 - 26.50 (101mm)	95 NA NA								25.87-25.90 Foram fossils.			
	26.00	D 148																		
													26.20	+80.03						
24 Jun 22 1430 / 3.00 2.76													(0.30)			Very stiff dark greyish brown slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION)				
	26.50	D 149											26.50	+79.73		END OF EXPLORATORY HOLE				26.50

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:37

AGS

Borehole RC01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	14 Jun 22 - 14 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	14 Jun 22							Ground Level	106.24 mOD
	1.50 - 3.00	27 Jun 22 - 27 Jun 22	Dynamic sampling	R74 Comacchio 305	LW/JM	AD	28 Jun 22							Coordinates	E 555738.81
Approved	3.00 - 6.00	27 Jun 22 - 28 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	AD	28 Jun 22	6.00	150	2.00	150			National Grid	N 224301.45
DB														System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details		Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
14 Jun 22	0800																	Please refer to RC01 log.				
0.00	Dry														(1.50)							
14 Jun 22	1800																					
0.00	Dry	1.50 - 3.00	DYS	100% rec											1.50	+104.74						
27 Jun 22	1325	1.60	D 101												(0.20)			Stiff greenish grey mottled brown slightly sandy gravelly CLAY with frequent lenses (5x150x100mm) of black silt. Sand is fine to medium. Gravel is angular to subrounded fine to medium of flint and chalk. Hydrocarbon odour. (Possible reworked LOWESTOFT FORMATION)				
0.00	Dry														1.70	+104.54		Stiff grey mottled brown gravelly silty CLAY with low cobble content. Gravel is subangular to subrounded, fine to coarse of flint, chalk, sandstone, mudstone and ironstone. Cobbles are subangular of chalk (100x80x80mm). (LOWESTOFT FORMATION)				
		2.10	D 102																			
		2.30 - 2.60	C 103																			
27 Jun 22	1500	2.80	D 104																			
2.00	Dry																					
28 Jun 22	0730																					
2.00	Dry	3.20 - 3.50	C 105								100											
		3.60	D 106							3.00 - 4.00 (101mm)	NA NA		Water with dry powder polymer flush: 3.00 - 4.00	80% rec	(4.30)							
		4.20	ES 107		4.20	PID	0.0 ppmv (Test 1)															
		4.40	D 108									NA NA NA										
		4.66 - 4.94	C 109								100											
		5.00	D 110							4.00 - 5.50 (101mm)	NA NA		Water with dry powder polymer flush: 4.00 - 6.00	65% rec								
		5.50	D 111																			
28 Jun 22	1200										100											
2.00	1.26	6.00	D 112							5.50 - 6.00 (101mm)	NA NA				6.00	+100.24		END OF EXPLORATORY HOLE				6.00

General Remarks

Hole carried out due to SPTs having been conducted at 2.50m, 3.50m and 4.50m in RC01.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:35:38

AGS

Borehole

RC01A

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	23 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	105.24 mOD
	1.50 - 4.20	28 Jun 22 - 28 Jun 22	Dynamic sampling	R74 Comacchio 305	LW/JM	AD	30 Jun 22	25.90	150	3.00	150			Coordinates	E 555862.80
Approved	4.20 - 25.90	28 Jun 22 - 30 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	AD	30 Jun 22							National Grid	N 224184.49
DB														System	

Date / Time Casing / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details		Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
23 Jun 22 0800 / 0.00 Dry	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)								(0.25)			(MADE GROUND) Dark brown gravelly fine to coarse SAND. Gravel is angular to subangular, fine to coarse of concrete, brick and macadam.				Flush Cover
	0.20	D 2												0.25	+104.99						0.30
	0.25 - 0.60	B 6		0.30	PID	0.0 ppmv (Test 2)								(0.40)			(MADE GROUND) Firm brownish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of concrete, brick, macadam and chalk.	0.60-0.65 Bituminous material.			
	0.30	ES 3		0.50	PID	0.0 ppmv (Test 3)								0.65	+104.59						
	0.50	ES 4												(0.29)							
	0.60	D 5												0.94	+104.30		(MADE GROUND) Dark brown gravelly slightly clayey fine to coarse SAND. Gravel is angular to subangular, fine to coarse of brick, flint, concrete and bituminous material.				
	0.80	D 7		0.90	PID	0.0 ppmv (Test 4)								(0.56)							
	0.80 - 0.90	B 9															(MADE GROUND) Dark grey mottled brown gravelly CLAY. Gravel is angular to subangular, fine to coarse of chalk, flint and brick. Pockets of black organic clay with frequent carbonaceous material and occasional decaying wood and rootlets.				
	0.90	ES 8												1.50	+103.74						
	1.20	D 10															(MADE GROUND) Firm to stiff slightly sandy slightly gravelly CLAY. Sand is medium to coarse. Gravel is subangular to rounded, fine to coarse of brick, flint, concrete and chalk. Occasional pockets (60x60x80mm) of black and dark grey slightly sandy silt with hydrocarbon odour.				
23 Jun 22 1800 / 0.00 Dry	1.30 - 1.50	B 11												(1.60)							
	1.50	ES 12		1.50	PID	0.0 ppmv (Test 5)												2.80-2.90 Black fine to coarse slightly sandy silt with hydrocarbon odour.			
28 Jun 22 1200 / 0.00 Dry	1.50 - 3.00	DYS	100% rec											3.10	+102.14		(MADE GROUND) Stiff greenish grey mottled brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of brick, flint and chalk.				
	1.90	D 101												(1.10)							
	2.06 - 2.36	C 102																			
	2.50	ES 103		2.50	PID	0.0 ppmv (Test 6)															
	2.70	D 104																			
	3.00 - 4.20	DYS	97% rec											4.20	+101.04			4.20-4.74 Assessed 300mm core loss.			
	3.20	ES 105		3.20	PID	0.0 ppmv (Test 7)								(0.24)			(MADE GROUND) Brown slightly sandy clayey subangular to rounded, fine to coarse GRAVEL of concrete, brick and flint. Sand is medium to coarse.				
	3.30 - 3.60	C 106												4.44	+100.80		Stiff greyish brown slightly sandy gravelly CLAY with low cobble content. Sand is fine. Gravel is rounded to subrounded, fine to coarse of flint, ironstone, mudstone, sandstone and chalk. Cobbles are subrounded of chalk (up to 100x90x80mm). (LOWESTOFT FORMATION)				
	3.70	D 107																			
	4.20	D 108																			
	4.30	D 109								57 NA NA											
	4.60	ES 110		4.60	PID	0.0 ppmv (Test 8)			4.20 - 4.90 (101mm)												
	4.65 - 4.90	C 111										Water flush: 4.20 - 5.40	100% rec								
	5.40	D 112							4.90 - 5.40 (101mm)	100 NA NA											
	5.90	D 113							5.40 - 6.40 (101mm)	100 NA NA		Water flush: 5.40 - 6.40	50% rec	(3.06)							
	6.10 - 6.40	C 114																			
	6.50	D 115																			
	6.65 - 6.90	C 116																			
	7.00	D 117								100 NA NA											
	7.10 - 7.40	B 118							6.40 - 7.90 (101mm)			Water flush: 6.40 - 7.90	80% rec								
	7.50	D 119												7.50	+97.74		Stiff to very stiff greyish brown slightly gravelly silty CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse of white chalk and flint. Cobbles are subangular of white chalk. (LOWESTOFT FORMATION)	7.50-9.30 Gravelly			
	7.60 - 7.90	C 120																			
	8.00	D 121																			
	8.50	D 122								100 NA NA											
	8.60 - 8.90	C 123							7.90 - 9.40 (101mm)			Water flush: 7.90 - 9.40	85% rec								
	9.00	D 124																			
	9.50	D 125																			
	9.60 - 9.90	C 126																			

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:38

AGS

Borehole RC02

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	23 Jun 22							Ground Level	105.24 mOD
	1.50 - 4.20	28 Jun 22 - 28 Jun 22	Dynamic sampling	R74 Comacchio 305	LW/JM	AD	30 Jun 22							Coordinates	E 555862.80
Approved	4.20 - 25.90	28 Jun 22 - 30 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	AD	30 Jun 22	25.90	150	3.00	150			National Grid	N 224184.49
DB														System	

Date Casing	Date Water	Time Casing	Time Water	Sample Depth	Sample Type & No.	Sample Records	Field Test Depth	Field Test Type	Field Test Records	Samp / Test Casing	Samp / Test Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added Flush details		Depth (Thickness)	Level	Legend	Strata Description Main	Strata Description Detail	Chisel.	Water Entry	Backfill
				10.00	D 127							9.40 - 10.90 (101mm)	100 NA NA		Water flush: 9.40 - 10.90	90% rec				Stiff to very stiff greyish brown slightly gravelly silty CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse of white chalk and flint. Cobbles are subangular of white chalk. (LOWESTOFT FORMATION)				
				10.50	D 128																			
28 Jun 22		1700																						
3.00		1.57																						
29 Jun 22		0730		11.00	D 129												(7.50)							
3.00		2.52																						
				11.40 - 11.70	C 130							10.90 - 12.40 (101mm)	100 NA NA											
				11.80	D 131																			
				12.30	D 132																			
				12.40 - 12.70	C 133																12.40 Medium gravel of worm tube fossils in limestone (up 3x2x4mm).			
				12.70	D 134																			
				13.30	D 135							12.40 - 13.90 (101mm)	100 NA NA											
				13.40 - 13.70	C 136																			
				13.80	D 137																			
				14.30	D 138																			
				14.40 - 14.70	C 139																			
				14.80	D 140							13.90 - 15.40 (101mm)	100 NA NA	NA NA NA										
				15.30	D 141												15.00	+90.24		Very stiff dark grey slightly gravelly locally silty CLAY. Gravel is subangular to subrounded fine to medium of white chalk, flint and mudstone. (LOWESTOFT FORMATION)				
				15.50 - 15.80	C 142																			
				15.90	D 143																			
				16.00 - 20.00	W 090822							15.40 - 16.90 (101mm)	100 NA NA											
				16.40	D 144																			
				16.90	D 145																			
				17.00 - 17.30	C 146																			
				17.40	D 147							16.90 - 18.40 (101mm)	100 NA NA											
				18.00 - 18.30	C 148										Water flush: 10.90 - 25.90	100% rec					18.00 1 no. translucent light brown belemnite fossil (20x4x4mm).			
				18.80 - 19.10	C 149												(7.61)							
				19.20	D 150							18.40 - 19.90 (101mm)	100 NA NA											
				19.70	D 151																19.70-21.20 Brownish grey. 19.70-22.61 Becoming silty and locally slightly fine sandy.			

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:35:38

AGS

Borehole

RC02

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	23 Jun 22							Ground Level	105.24 mOD
	1.50 - 4.20	28 Jun 22 - 28 Jun 22	Dynamic sampling	R74 Comacchio 305	LW/JM	AD	30 Jun 22							Coordinates	E 555862.80
Approved	4.20 - 25.90	28 Jun 22 - 30 Jun 22	Rotary drilling	R74 Comacchio 305	LW/JM	AD	30 Jun 22	25.90	150	3.00	150			National Grid	N 224184.49
DB														System	

Date / Time Casing	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
		19.90 - 20.20	C 152														Very stiff dark grey slightly gravelly locally silty CLAY. Gravel is subangular to subrounded fine to medium of white chalk, flint and mudstone. (LOWESTOFT FORMATION)				
		20.30	D 153							19.90 - 21.40 (101mm)	100 NA NA										
		20.80	D 154																		
		20.90 - 21.20	C 155																		
		21.50	D 156																		
		22.00	D 157							21.40 - 22.90 (101mm)	100 NA NA										
		22.20 - 22.50	C 158																		
		22.70	ES 159											22.61	+82.63						22.50
		22.80	D 160														Stiff to very stiff brownish grey slightly sandy silty micaceous laminated CLAY with occasional lenses (90x100x30mm) of light brown silt. Sand is fine to medium. Rare claystone nodules (50x50x30mm). (LONDON CLAY FORMATION).				
		23.00 - 23.30	C 161																		
		23.50	D 162							22.90 - 24.40 (101mm)	100 NA NA										
		24.00	D 163																		
		24.10 - 24.40	C 164											(3.29)							
		24.50	D 165																		
		25.00	D 166																		
		25.10 - 25.40	C 167							24.40 - 25.90 (101mm)	100 NA NA										
		25.50	D 168																		
29 Jun 22 3.00	1730 3.72													25.90	+79.34		END OF EXPLORATORY HOLE				SP 25.90

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:38

AGS

Borehole RC02

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22	26.10	150	3.50	150			Ground Level	103.85 mOD
	1.50 - 4.10	06 Jul 22 - 06 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	12 Jul 22							Coordinates	E 555889.12
Approved	4.10 - 26.10	06 Jul 22 - 11 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	12 Jul 22							National Grid	N 224010.98
DB															

Date	Time	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
Casing	Water																				
30 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)							(0.40)			(TOPSOIL) Pinkish brown gravelly fine to medium SAND. Gravel is angular, fine to coarse of flint.				Flush Cover
	Dry	0.10 - 0.30	B 3											0.40	+103.45		(MADE GROUND) Soft mottled dark grey and greenish brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, brick and chalk. Cobbles are angular of brick, flint and chalk (150x130x80mm). (Reworked LOWESTOFT FORMATION)				0.40
		0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)							(0.60)							
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)							1.00	+102.85		(MADE GROUND) Soft dark grey mottled greenish brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, chalk and brick. Cobbles are angular to subangular of brick, flint and chalk (130x125x100mm). (Reworked LOWESTOFT FORMATION)				
		0.50	D 6											(0.50)							
		0.50	ES 5											1.50	+102.35						
		1.00	ES 7		1.00	PID	0.0 ppmv (Test 4)							(1.12)			(MADE GROUND) Stiff brown mottled grey slightly sandy gravelly CLAY with rare fragments (3x20x18mm) of charcoal, rare fragments (4x4x5mm) of red brick and rare plant debris (3mm). Sand is fine. Gravel is angular to subrounded, fine to coarse of flint, chalk, mudstone and limestone. (Reworked LOWESTOFT FORMATION)				
		1.10 - 1.30	B 8											2.62	+101.23		Very stiff grey locally greyish brown gravelly CLAY with rare pyrite (3x3x4mm). Gravel is subangular to subrounded, fine to medium of flint, chalk, ironstone and mudstone. (Probable LOWESTOFT FORMATION)				
30 Jun 22	1800																				
	Dry	1.50	D 10		1.50	PID	0.0 ppmv (Test 5)														
06 Jul 22	1430	1.50	ES 9		1.60	PID	0.0 ppmv (Test 6)														
	Dry	1.50 - 3.00	DYS	100% rec																	
		1.60	ES 101																		
		1.80	D 102																		
		2.00 - 2.30	C 103																		
		2.30	D 104																		
		2.80	D 105																		
		3.00 - 4.10	DYS	100% rec																	
		3.10	ES 106		3.10	PID	0.0 ppmv (Test 7)														
		3.20	D 107																		
		3.30 - 3.60	C 108																		
		3.80	D 109																		
06 Jul 22	1700																				
1.50	Damp	4.10	D 110																		
07 Jul 22	0730	4.15 - 4.45	C 111											(3.39)							
1.50	3.82	4.50	ES 112		4.50	PID	0.0 ppmv (Test 8)			4.10 - 5.10 (101mm)	100 NA NA										
		4.60	D 113																		
		4.80	D 114																		
		5.10 - 5.40	C 115																		
		5.40	D 116																		
		5.90	D 117							5.10 - 6.60 (101mm)	100 NA NA			6.01	+97.84		Very stiff grey to dark grey locally silty gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of flint, chalk, mudstone and ironstone with rare sandstone. (LOWESTOFT FORMATION)				
		6.15 - 6.45	C 118																		
		6.50	D 119																		
		6.60	ES 120		6.60	PID	0.0 ppmv (Test 9)														
		6.90	D 121																		
		7.05 - 7.35	C 122																		
		7.40	D 123							6.60 - 8.10 (101mm)	100 NA NA			(2.67)							
		7.90	D 124																		
		8.10 - 8.40	C 125																		
		8.40	D 126																		
		8.80	ES 127		8.80	PID	0.0 ppmv (Test 10)			8.10 - 9.60 (101mm)	100 NA NA			8.68	+95.17		Very stiff grey to brownish grey locally silty gravelly CLAY with low cobble content. Gravel is subangular to subrounded, fine to coarse of flint and chalk. Rare subangular medium gravel of ironstone. (LOWESTOFT FORMATION)				
		8.90	D 128																		
		9.10 - 9.40	C 129																		
		9.40	D 130																		
		9.90	D 131																		

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:39

AGS

Borehole RC03

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	103.85 mOD
	1.50 - 4.10	06 Jul 22 - 06 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	12 Jul 22	26.10	150	3.50	150			Coordinates	E 555889.12
Approved	4.10 - 26.10	06 Jul 22 - 11 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	12 Jul 22							National Grid	N 224010.98
DB															

Date / Time Casing / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing / Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
10	10.10 - 10.40	C 132						9.60 - 11.10 (101mm)	100 NA NA						Very stiff grey to brownish grey locally silty gravelly CLAY with low cobble content. Gravel is subangular to subrounded, fine to coarse of flint and chalk. Rare subangular medium gravel of ironstone. (LOWESTOFT FORMATION)				
	10.40	D 133																	
11	10.90	D 134																	
	11.10 - 11.40	C 135																	
	11.40	D 136																	
12	11.90	D 137						11.10 - 12.60 (101mm)	100 NA NA										
	12.10 - 12.40	C 138																	
	12.40	D 139																	
13	12.90	D 140																	
	13.10 - 13.40	C 141						12.60 - 14.10 (101mm)	100 NA NA										
	13.40	D 142																	
14	13.90	D 143																	
	14.10 - 14.40	C 144																	
	14.40	D 145										(12.01)							
15	14.90	D 146						14.10 - 15.60 (101mm)	100 NA NA	NA NA NA	Water flush: 4.10 - 26.10	100% rec							
	15.10 - 15.40	C 147																	
	15.40	D 148																	
16	15.90	D 149																	
	16.10 - 16.40	C 150						15.60 - 17.10 (101mm)	100 NA NA										
	16.40	D 151																	
17	16.90	D 152																	
	17.35 - 17.65	C 153																	
	17.70	D 154						17.10 - 18.60 (101mm)	100 NA NA										
18	18.00	D 155																	
	18.10 - 18.38	C 156																	
	18.40	D 157																	
19	18.90	D 158																	
	19.10 - 19.40	C 159						18.60 - 20.10 (101mm)	100 NA NA										
	19.40	D 160																	
20	19.90	D 161													Hole continues on next sheet				

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:39

AGS

Borehole RC03

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	103.85 mOD
	1.50 - 4.10	06 Jul 22 - 06 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	12 Jul 22							Coordinates	E 555889.12
Approved	4.10 - 26.10	06 Jul 22 - 11 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	12 Jul 22	26.10	150	3.50	150			National Grid	N 224010.98
DB															

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details
		20.10 - 20.40	C 162										
		20.40	D 163										
		20.70	ES 164								100		
		20.90	D 165							20.10 - 21.60 (101mm)	NA		
		21.10 - 21.40	C 166								NA		
07 Jul 22 / 3.50	1700 / 2.98	21.40	D 167										
08 Jul 22 / 3.50	0730 / 4.20												
		21.90	D 168										
		22.00	ES 169								100		
		22.10 - 22.40	C 170								NA		
		22.40	D 171							21.60 - 23.10 (101mm)	NA		
		22.90	D 172										
		23.10 - 23.40	C 173										
		23.40	D 174								100		
		23.90	D 175							23.10 - 24.60 (101mm)	NA		
		24.10 - 24.40	C 176								NA		
		24.40	D 177										
		24.90	D 178										
		25.10 - 25.40	C 179								100		
		25.40	D 180							24.60 - 26.10 (101mm)	NA		
		25.50	ES 181								NA		
08 Jul 22 / 3.50	1230 / 4.20	25.90	D 182										

Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
			Very stiff grey to brownish grey locally silty gravelly CLAY with low cobble content. Gravel is subangular to subrounded, fine to coarse of flint and chalk. Rare subangular medium gravel of ironstone. (LOWESTOFT FORMATION)				
20.69	+83.16						
(1.29)			Very stiff dark grey silty gravelly CLAY with rare shell fragments (1x10x12mm). Gravel is subangular to rounded, fine to medium of flint and chalk. (LOWESTOFT FORMATION)				
21.98	+81.87		Very stiff fissured brown locally slightly sandy silty slightly micaceous CLAY with rare partings of brown silt, rare lenses (1x3x5mm) of light brown fine sand and rare trace fossils (1x2x1mm). Fissures are randomly orientated closely and medium spaced randomly orientated planar smooth clean. (LONDON CLAY FORMATION)				22.50
(3.07)							
25.05	+78.80		Very stiff brown slightly sandy silty slightly micaceous CLAY with occasional partings of light brown fine sand. (LONDON CLAY FORMATION)				25.00 SP
(1.05)							
26.10	+77.75		END OF EXPLORATORY HOLE				26.10

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:39

AGS

Borehole RC03

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.35 mOD
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	KG	29 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 556025.14
	1.50 - 3.00	01 Jul 22 - 01 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	05 Jul 22	25.80	150	3.00	150			National Grid	N 224181.26
Approved	3.00 - 25.80	01 Jul 22 - 06 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	05 Jul 22							System	
DB															

Date / Time Casing / Water	Samples: Depth, Type & No., Records	Field Tests: Depth, Type, Records	Samp / Test: Casing, Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Strata Description: Detail	Chisel.	Water Entry	Backfill
29 Jun 22 0800 0.00 Dry								(0.59)			(MADE GROUND) CONCRETE.				Flush Cover
	0.60 ES 1	0.60 PID 0.0 ppmv (Test 1)						0.59	+103.76						
	1.00 ES 2	1.00 PID 0.0 ppmv (Test 2)						(0.91)			(MADE GROUND) Stiff yellowish light brown slightly gravelly CLAY. Gravel is subangular to rounded, fine to medium of chalk and flint. (Reworked LOWESTOFT FORMATION)				
29 Jun 22 1800 0.00 Dry															
	1.50 ES 3	1.50 PID 0.0 ppmv (Test 3)						1.50	+102.85						
01 Jul 22 0730 0.00 Dry	1.50 - 3.00 DYS 1.60 D 101										(MADE GROUND) Stiff light brown and grey mottled slightly sandy gravelly CLAY with rare fragments (4x5x5mm) of charcoal and rare rootlets. Sand is fine. Gravel is angular to subangular, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)	1.80-2.50 Brown locally mottled grey slightly gravelly.			
	1.90 ES 102	1.90 PID 0.1 ppmv (Test 4)													
	2.20 D 103							(1.80)							
	2.50 - 2.80 C 104 2.80 D 105														
	2.90 ES 106	2.90 PID 0.0 ppmv (Test 5)										2.90 Fragment (4x5x5mm) of charcoal.			
	3.25 D 107			3.00 - 3.30 (101mm)	100 NA NA			3.30	+101.05		(MADE GROUND) Partial recovery. Recovery is of stiff brown slightly sandy gravelly CLAY with rare fragments (2x3x4mm) of charcoal and lenses 92x5x5mm) of fine sand. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
	3.95 ES 108	3.95 PID 0.0 ppmv (Test 6)										3.78-4.84 Subangular coarse gravel of fractured flint.			
	4.05 - 4.35 C 109 4.40 D 110			3.30 - 4.80 (101mm)	46 NA NA			(1.54)							
	4.90 D 111											4.69 Fragment (2x3x4mm) of charcoal.			
	5.20 ES 112	5.20 PID 0.0 ppmv (Test 7)		4.80 - 5.30 (101mm)	100 NA NA			4.84	+99.51		Stiff grey gravelly silty CLAY with low cobble content. Gravel is rounded to subrounded, fine to coarse of flint and chalk. Cobbles (100mm) are subangular of light grey chalk. (LOWESTOFT FORMATION)	5.30-5.43 AZCL.			5.50
	5.43 - 5.73 C 113 5.80 D 114			5.30 - 6.30 (101mm)	87 NA NA										SP
01 Jul 22 1200 3.00 1.32	6.30 D 115														
04 Jul 22 0730 3.00 1.32	6.35 - 6.65 C 116 6.80 D 117			6.30 - 7.80 (101mm)	100 NA NA										
	7.35 - 7.65 C 118 7.70 D 119 7.90 D 120														
	8.35 - 8.55 C 121 8.60 D 122			7.80 - 9.30 (101mm)	99 NA NA										9.50
	9.10 D 123														
	9.30 - 9.60 C 124 9.60 D 125							(9.76)							
											Hole continues on next sheet				

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:39

AGS

Borehole RC04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.35 mOD
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	KG	29 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 556025.14
	1.50 - 3.00	01 Jul 22 - 01 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	05 Jul 22	25.80	150	3.00	150			National Grid	N 224181.26
Approved	3.00 - 25.80	01 Jul 22 - 06 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	05 Jul 22							System	
DB															

Date / Time Casing / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added: Flush details		Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
	10.10	D 126							9.30 - 10.80 (101mm)	97 NA NA							Stiff grey gravelly silty CLAY with low cobble content. Gravel is rounded to subrounded, fine to coarse of flint and chalk. Cobbles (100mm) are subangular of light grey chalk. (LOWESTOFT FORMATION)				
	10.30 - 10.60	C 127																			
	10.60	D 128																			
	11.20	D 129																			
	11.35 - 11.65	C 130							10.80 - 12.30 (101mm)	99 NA NA											
	11.70	D 131																			
	12.20	D 132																			
	12.30 - 12.60	C 133																			
	12.70	D 134																			
	13.20	D 135							12.30 - 13.80 (101mm)	100 NA NA											
	13.30 - 13.60	C 136																			
04 Jul 22 1630 / 3.00 2.27	13.70	D 137																			
05 Jul 22 0730 / 3.00 2.57																					
	14.20	D 138																			
	14.29 - 14.58	C 139										Water flush: 3.00 - 25.80	100% rec								
	14.70	D 140							13.80 - 15.30 (101mm)	100 NA NA				14.60	+89.75						
	14.90	ES 141		14.90	PID	0.0 ppmv (Test 8)					NA NA NA						Stiff to very stiff grey to dark grey gravelly silty CLAY with rare subrounded coarse gravels of chalk and rare medium gravels of ironstone. Gravel is rounded to subrounded, fine to medium of flint and chalk. (LOWESTOFT FORMATION)				
	15.20	D 142																			
	15.60 - 15.90	C 143																			
	15.90	D 144							15.30 - 16.80 (101mm)	100 NA NA											
	16.30 - 16.60	C 145																			
	16.70	D 146																			
	17.20	D 147												(5.20)							
	17.30 - 17.60	C 148							16.80 - 18.30 (101mm)	100 NA NA											
	17.70	D 149																			
	18.20	D 150																18.07-18.17 100mm subangular cobble of flint.			
	18.30 - 18.60	C 151																			
	18.70	D 152																			
	19.20	D 153							18.30 - 19.80 (101mm)	100 NA NA											
	19.30 - 19.60	C 154																			
	19.70	D 155																			
	19.80 - 21.30	B 156												19.80	+84.55		Minimum recovery. Recovery is of very stiff grey to dark grey gravelly silty CLAY with low rare subrounded coarse gravels of chalk and rare medium gravels of ironstone. Gravel is rounded to subrounded, fine to medium of flint and chalk. 1no cobble (80mm) subangular of flint. (LOWESTOFT FORMATION)				

Hole continues on next sheet

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 26 Apr 2023 06:35:39

AGS

Borehole

RC04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks		
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	KG	29 Jun 22							Ground Level	104.35 mOD
	1.50 - 3.00	01 Jul 22 - 01 Jul 22	Dynamic sampling	R74 Comacchio 305	LW/JM	NH	05 Jul 22							Coordinates	E 556025.14
Approved	3.00 - 25.80	01 Jul 22 - 06 Jul 22	Rotary drilling	R74 Comacchio 305	LW/JM	NH	05 Jul 22	25.80	150	3.00	150			National Grid	N 224181.26
DB														System	

Date / Time Casing / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing / Water	Coring Depth (Diameter)	TCR % SCR % RQD %	If (mm)	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
								19.80 - 21.30 (101mm)	23 NA NA			(1.50)			Minimum recovery. Recovery is of very stiff grey to dark grey gravelly silty CLAY with low rare subrounded coarse gravels of chalk and rare medium gravels of ironstone. Gravel is rounded to subrounded, fine to medium of flint and chalk. 1no cobble (80mm) subangular of flint. (LOWESTOFT FORMATION)				
	21.35 - 21.60	C 157						21.30 - 21.85 (101mm)	96 NA NA			21.30	+83.05		Very stiff grey to dark grey gravelly silty CLAY. Gravel is rounded to subrounded, fine to medium of flint and chalk. (LOWESTOFT FORMATION)	21.30-21.32 AZCL.			
	21.60	D 158										(0.45)							
	21.90	D 159										21.75	+82.60		Stiff to very stiff fissured dark brown slightly sandy silty CLAY with occasional mica minerals (<1mm), rare lenses (1x4x5mm) of grey silt and rare trace fossils (1x1x5mm). Fissures are randomly orientated, closely spaced, closed, planar smooth clean. Sand is fine. (LONDON CLAY FORMATION)	21.85-21.87 AZCL.			
	22.20	ES 160						21.85 - 22.80 (101mm)	98 NA NA										
	22.40 - 22.70	C 161																	
	22.70	D 162																	
	23.20	D 163																	
	23.40 - 23.70	C 164						22.80 - 24.30 (101mm)	100 NA NA										
	23.70	D 165										(4.05)							
	24.20	D 166																	
	24.30 - 24.60	C 167																	
	24.70	D 168																	
	25.20	D 169						24.30 - 25.80 (101mm)	100 NA NA										
	25.30 - 25.58	C 170																	
05 Jul 22 1700 3.00 2.83	25.70	D 171										25.80	+78.55		END OF EXPLORATORY HOLE				25.80

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 26 Apr 2023 06:35:39

AGS

Borehole RC04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Remarks
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Hand dug inspection pit.	Hand tools	Labourers	CD	16 Jun 22	2.30	87				
Approved	1.50 - 2.30	20 Jun 22 - 20 Jun 22	Dynamic sampling.	Dando Terrier	Labourers	PR	20 Jun 22						
DB													

Ground Level	104.55 mOD
Coordinates	E 555706.36
National Grid	N 224352.41
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
16 Jun 22	0800	0.05	D 2		0.05	PID	0.0 ppmv (Test 1)						(0.10)	+104.45		(TOPSOIL)				
0.00	Dry	0.05	ES 1		0.15	PID	0.1 ppmv (Test 2)						0.10			Brown gravelly clayey fine to coarse SAND with abundant rootlets. Gravel is angular to subrounded, fine to coarse of flint and concrete.				
		0.15	ES 3										(0.40)			(MADE GROUND)				
		0.20	D 4										0.50	+104.05		Light greyish brown slightly sandy gravelly CLAY with rare brick fragments (up to 70x60x60mm). Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk.				
		0.30 - 0.50	B 5		0.60	PID	0.0 ppmv (Test 3)									(Reworked LOWESTOFT FORMATION)				
		0.60	ES 6										(1.00)			(MADE GROUND)				
		0.70	D 7													Firm to stiff light brown to brown mottled light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk.				
		0.80 - 1.20	B 8										1.50	+103.05		(Reworked LOWESTOFT FORMATION)				
16 Jun 22	1800															Firm light grey mottled brown gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint.				
0.00	Dry	1.40	ES 9		1.40	PID	0.0 ppmv (Test 4)						(0.80)			(LOWESTOFT FORMATION)				
20 Jun 22	0800	1.50 - 1.95	D 10		1.50 - 1.95	SPT S	N=23 (4,5/5,6,6,6)	1.50	Dry											
0.00	Dry	1.50 - 2.30	B 12				ID DT10769 Er 72%													
		1.50	ES 11																	
		1.50 - 2.30	DYS	100% rec, dia 87mm																
		2.00	ES 13																	
20 Jun 22	1800	2.20	D 14																	
2.30	Dry				2.30 - 2.75	SPT C	N=48 (1,3/14,18,8,8) ID DT10769 Er 72%	2.30	Dry				2.30	+102.25		END OF EXPLORATORY HOLE				2.30

General Remarks

Termination Reason: Buried obstruction caused loss of verticality

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:14

AGS

Borehole

DS01

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	20 Jun 22 - 20 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	20 Jun 22
	1.50 - 5.45	21 Jun 22 - 21 Jun 22	Dynamic sampling	Dando Terrier	Labourers	PR	21 Jun 22
Approved							
DB							

Hole		Casing	
Depth	Dia. (mm)	Depth	Dia. (mm)
2.50	101		
3.50	87		
4.50	67		
5.00	57		

Depth Related Remarks	
Depth	Remarks

Ground Level	105.68 mOD
Coordinates	E 555694.35
National Grid	N 224299.85
System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring: Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
		0.10	D 1		0.10	PID	0.0 ppmv (Test 1)									(MADE GROUND) Soft to firm light brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of chalk and flint.				
20 Jun 22	0800	0.10 - 0.30	B 3										(0.50)							
0.00	Dry	0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)													
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)						0.50	+105.18		(MADE GROUND) Stiff brown mottled light grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, brick and chalk. Cobbles are angular of brick and macadam (150mmx120mmx120mm).				
		0.50	D 5																	
		0.50	ES 6																	
		1.00 - 1.20	B 8		1.00	PID	0.0 ppmv (Test 4)						(1.00)							
		1.00	ES 7																	
20 Jun 22	1800																			
0.00	Dry																			
21 Jun 22	0800	1.50 - 1.95	D 10		1.50 - 1.95	SPT S	N=16 (2,2/4,4,4,4)	1.50	Dry				1.50	+104.18		(MADE GROUND) Stiff light brown mottled dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, flint, brick and macadam. (Reworked LOWESTOFT FORMATION)				
0.00	Dry	1.50 - 2.50	B 17		1.50	PID	ID DT10769 Er 72%													
		1.50	ES 9				0.0 ppmv (Test 5)													
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		1.80	D 16		2.00	PID	0.0 ppmv (Test 6)													
		2.00	ES 15																	
		2.50 - 2.95	D 11		2.50 - 2.95	SPT S	N=22 (3,3/4,5,7,6)	2.50	Dry											
		2.50 - 3.50	B 20				ID DT10769 Er 72%													
		2.50 - 3.50	DYS	100% rec, dia 87mm																
		2.80	D 18																	
		3.00	ES 19		3.00	PID	0.0 ppmv (Test 7)													
		3.50 - 3.95	D 12		3.50 - 3.95	SPT S	N=25 (3,4/4,7,7,7)	3.50	Dry				(3.95)							
		3.50 - 4.50	B 23				ID DT10769 Er 72%													
		3.50 - 4.50	DYS	100% rec, dia 67mm																
		3.80	D 21																	
		4.00	ES 22		4.00	PID	0.0 ppmv (Test 8)													
		4.50 - 4.95	D 13		4.50 - 4.95	SPT S	N=31 (3,4/6,8,8,9)	4.50	Dry											
		4.50 - 5.00	DYS	100% rec, dia 57mm			ID DT10769 Er 72%													
		4.80	D 24																	
		5.00 - 5.45	D 14		5.00 - 5.45	SPT S	N=31 (4,6/6,8,8,9)	5.00	Dry											
		5.00	ES 25		5.00	PID	ID DT10769 Er 72%													
21 Jun 22	1800						0.0 ppmv (Test 9)													
5.00	Dry												5.45	+100.23		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:15

AGS

Borehole

DS02

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	21 Jun 22 - 21 Jun 22	Hand dug inspection pit	Hand tools	Labourers	PR	21 Jun 22
	1.50 - 5.45	21 Jun 22 - 21 Jun 22	Dynamic Sampling	Dando Terrier	Labourers	PR	21 Jun 22
Approved							
DB							

Hole		Casing	
Depth	Dia. (mm)	Depth	Dia. (mm)
2.50	101		
3.50	87		
4.50	77		
5.00	67		

Depth Related Remarks	
Depth	Remarks

Ground Level	105.50 mOD
Coordinates	E 555742.77
National Grid	N 224261.27
System	

Date	Time	Casing	Water
21 Jun 22	0800	0.00	Dry
21 Jun 22	1800	0.00	Dry

Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added	Flush details
Depth	Type & No.	Records	Depth	Type	Records	Casing	Water				
0.10 - 0.40	B 4		0.10	PID	0.0 ppmv (Test 1)						
0.10	ES 1										
0.20	D 3		0.30	PID	0.0 ppmv (Test 2)						
0.30	ES 2										
0.50	ES 5		0.50	PID	0.0 ppmv (Test 3)						
0.60 - 1.20	B 7										
0.80	D 6										
1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)						
1.20	D										
1.20	D 9										
1.50 - 1.95	D 11		1.50 - 1.95	SPT S	N=18 (2,3/4,5,5,4)	1.50	Dry				
1.50 - 2.50	B 19		1.50	PID	ID DT10769 Er 72%						
1.50	ES 10				0.0 ppmv (Test 5)						
1.80	D 17										
2.00	ES 16		2.00	PID	0.0 ppmv (Test 6)						
2.30	ES 20		2.30	PID	0.3 ppmv (Test 7)						
2.50 - 2.95	D 12		2.50 - 2.95	SPT S	N=26 (3,5/5,7,6,8)	2.50	Dry				
2.50 - 3.50	B 23				ID DT10769 Er 72%						
2.80	D 21										
3.00	ES 22		3.00	PID	0.0 ppmv (Test 8)						
3.50 - 3.95	D 13		3.50 - 3.95	SPT S	N=31 (5,4/6,7,9,9)	3.50	Dry				
3.50 - 3.80	B 26				ID DT10769 Er 72%						
3.80	D 25										
4.00	ES 24		4.00	PID	0.0 ppmv (Test 9)						
4.50 - 4.95	D 14		4.50 - 4.95	SPT S	N=25 (3,4/5,6,6,8)	4.50	Dry				
					ID DT10769 Er 72%						
4.80	ES 27		4.80	PID	0.0 ppmv (Test 10)						
4.90	D 28		5.00 - 5.45	SPT S	N=29 (4,4/5,6,8,10)	5.00	Dry				
5.00 - 5.45	D 15				ID DT10769 Er 72%						

Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
(0.45)			(MADE GROUND) Light grey slightly clayey gravelly SAND with high cobble content. Gravel is subangular to subrounded, fine to coarse of flint, chalk and brick. Sand is fine to coarse. Cobbles are (up to 80x80x1100mm) of flint and brick.				Flush cover
0.45	+105.05		(MADE GROUND) Firm dark brown mottled dark grey slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and brick.				
(1.45)							
1.90	+103.60		(MADE GROUND) Stiff dark brown mottled dark grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, flint and brick.	2.20 Strong hydrocarbon odour.			2.00
(2.50)							3.00 SP
4.40	+101.10		Stiff light brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of flint and chalk. (Possible LOWESTOFT FORMATION)	4.50 Grass rootlets (10x6x1mm).			
(1.05)							
5.45	+100.05		END OF EXPLORATORY HOLE				5.45

General Remarks

Re-drilled for installation 07/09/2022

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:15

AGS

Borehole

DS03

Sheet 1 of 1

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	20 Jun 22 - 20 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	20 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	106.11 mOD
	1.50 - 5.45	21 Jun 22 - 21 Jun 22	Dynamic sampling	Dando Terrier	Labouers	PR	21 Jun 22	3.50	101					Coordinates	E 555767.63
Approved								4.50	87					National Grid	N 224287.65
DB								5.00	67					System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													(0.35)			(MADE GROUND) Firm light grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to rounded, fine to coarse of brick, flint and chalk.				
20 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)						0.35	+105.76		(MADE GROUND) Firm mottled grey and light brown slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse of brick, chalk and flint.				
0.00	Dry	0.10	ES 2																
		0.30	B 4		0.30	PID	0.0 ppmv (Test 2)												
		0.30	ES 3																
		0.50	B 6		0.50	PID	0.0 ppmv (Test 3)												
		0.50	ES 5																
		0.70	D 7										(0.85)						
		1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)												
													1.20	+104.91					
20 Jun 22	1800	1.30	D 10		1.30	PID	0.4 ppmv (Test 5)						(0.15)	+104.76		(MADE GROUND) Soft black mottled light brown slightly sandy slightly gravelly CLAY with a strong hydrocarbon odour and low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of brick, flint and chalk. Cobbles are angular to subrounded of brick and flint (130x120x90mm).				
0.00	Dry	1.30	ES 9										1.35	+104.61					
21 Jun 22	0800	1.40 - 1.50	B 11		1.50 - 1.95	SPT S	N=10 (1,3/2,2,3,3)	1.50	Dry				(0.15)						
0.00	Dry	1.50 - 1.95	D 13		1.50	PID	ID DT10769 Er 72%						1.50			(MADE GROUND) Soft to firm light grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to rounded, fine to coarse of brick, flint and chalk. Cobbles are angular to subrounded of brick and flint (130x120x10mm).				
		1.50	ES 12				0.0 ppmv (Test 6)												
		1.50 - 2.50	DYS	95% rec, dia 101mm															
		1.55 - 2.50	B 19		2.00	PID	0.0 ppmv (Test 7)									Firm light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		1.80	D 20																
		2.00	ES 18																
		2.50 - 2.95	D 14		2.50 - 2.95	SPT S	N=27 (3,4/6,6,7,8)	2.50	Dry										
		2.50 - 3.50	B 22				ID DT10769 Er 72%												
		2.50 - 3.50	DYS	100% rec, dia 101mm															
		2.80	D 23																
		3.00	ES 21		3.00	PID	0.0 ppmv (Test 8)												
													(3.95)						
		3.50 - 3.95	D 15		3.50 - 3.95	SPT S	N=26 (3,3/5,6,7,8)	3.50	Dry										
		3.50 - 4.50	B 24				ID DT10769 Er 72%												
		3.50 - 4.50	DYS	100% rec, dia 87mm															
		4.00	D 25																
		4.50 - 4.95	D 16		4.50 - 4.95	SPT S	N=25 (1,4/4,6,7,8)	4.50	Dry										
		4.50 - 5.00	B 26				ID DT10769 Er 72%												
		4.50 - 5.00	DYS	100% rec, dia 67mm															
		5.00 - 5.45	D 17		5.00 - 5.45	SPT S	N=29 (5,6/6,6,8,9)	5.00	Dry										
							ID DT10769 Er 72%												
21 Jun 22	1800																		
5.00	Dry												5.45	+100.66		END OF EXPLORATORY HOLE			5.45

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 16 Dec 2022 15:31:16

AGS

Borehole DS04

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	22 Jun 22 - 22 Jun 22	Hand dug inspection pit	Hand tools	Labourers	PR	22 Jun 22
	1.50 - 5.45	22 Jun 22 - 22 Jun 22	Dynamic sampling	Dando Terrier	Labourers	PR	22 Jun 22
Approved							
DB							

Hole Depth	Hole Dia. (mm)
2.50	101
3.50	87
4.50	67
5.00	57

Casing Depth	Casing Dia. (mm)

Depth Related Remarks Depth	Remarks

Ground Level	105.05 mOD
Coordinates	E 555850.61
National Grid	N 224209.70
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
		0.10 - 0.40	B 3		0.10	PID	0.0 ppmv (Test 1)						(0.08)	+104.97		CONCRETE.				Flush cover
22 Jun 22	0800	0.10	ES 1										0.08			(MADE GROUND)				
0.00	Dry	0.20	D 4		0.30	PID	0.0 ppmv (Test 2)						(0.37)			Light brown slightly clayey gravelly fine to coarse SAND with medium cobble content. Gravel is angular to subrounded, fine to coarse of concrete, flint and macadam. Cobbles are angular of concrete (500x600x800mm).				
		0.30	ES 2		0.50	PID	0.0 ppmv (Test 3)						0.45	+104.60		(MADE GROUND)				
		0.50	ES 5													Firm light brown mottled grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of concrete, flint, macadam, brick and chalk. Cobbles are subangular of concrete (80x90x1000mm).				
		0.60 - 1.00	B 6																	
		1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)													
		1.20	D 7																	
		1.40	D																	
		1.40	D 9		1.50 - 1.95	SPT S	N=19 (2,3/3,5,5,6)	1.50	Dry											1.50
		1.50 - 1.95	D 11		1.50	PID	ID DT10769 Er 72% 0.0 ppmv (Test 5)													
		1.50 - 2.50	B 18										(2.65)							
		1.50	ES 10																	
		1.50 - 2.50	DYS	100% rec, dia 101mm	2.00	PID	0.0 ppmv (Test 6)													
		1.80	D 17																1 ▽	
		2.00	ES 16																1 -	
		2.50 - 2.95	D 12		2.50 - 2.95	SPT S	N=12 (13,10/6,2,1,3)	2.50	Dry											
		2.50 - 3.00	B 21				ID DT10769 Er 72%													
		2.50 - 3.50	DYS	80% rec, dia 87mm																
		2.80	D 20																	
		3.00	ES 19		3.00	PID	0.0 ppmv (Test 7)													
		3.20	D 22										3.10	+101.95		(MADE GROUND)				
													(0.40)			Black sandy subangular to subrounded, fine to coarse GRAVEL of flint and limestone. Sand is fine to coarse.				
		3.50 - 3.95	D 13		3.50 - 3.95	SPT S	N=24 (2,3/5,6,6,7)	3.50	Dry				3.50	+101.55		Firm to stiff light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)				3.50 SP
		3.50 - 4.40	B 25				ID DT10769 Er 72%													
		3.50 - 4.50	DYS	90% rec, dia 67mm																
		3.80	D 24																	
		4.00	ES 23		4.00	PID	0.0 ppmv (Test 8)													
		4.50 - 4.95	D 14		4.50 - 4.95	SPT S	N=22 (3,3/4,5,6,7)	4.50	Dry				(1.95)							
		4.50 - 5.00	DYS	40% rec, dia 57mm			ID DT10769 Er 72%										4.60 Occasional rootlets (10x10x100mm).			
		4.60	D 26																	
		5.00 - 5.45	D 15		5.00 - 5.45	SPT S	N=25 (2,3/5,6,6,8)	5.00	Dry											
							ID DT10769 Er 72%													
22 Jun 22	1800												5.45	+99.60		END OF EXPLORATORY HOLE				5.45
0.00	Dry																			

General Remarks

Re-drilled for installation 07/09/2022

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	2.18	Remained at 2.18 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS05

Sheet 1 of 1

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks			
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	23 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Ground Level	105.00 mOD
	1.50 - 4.95	23 Jun 22 - 23 Jun 22	Dynamic sampling	Dando Terrier	Labourers	PR	23 Jun 22	2.50	101					Coordinates	E 555842.60
Approved								3.00	87					National Grid	N 224172.20
DB								4.50	67					System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
													(0.15)			(MADE GROUND)				Flush Cover
23 Jun 22	0800	0.10 - 0.30	B 4		0.10	PID	0.2 ppmv (Test 1)						0.15	+104.85		Grey sandy angular to subangular fine to coarse GRAVEL of concrete, brick and Type 1 aggregate. Sand is fine to medium.				
0.00	Dry	0.10	ES 1										(0.35)							
		0.20	D 2		0.30	PID	0.0 ppmv (Test 2)						0.50	+104.50		CONCRETE with occasional 3mm rebar.				
		0.30	ES 3		0.50	PID	0.0 ppmv (Test 3)									(MADE GROUND)				
		0.50	ES 5													Firm light brown mottled dark grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular, fine to coarse of chalk and flint with occasional brick fragments.				
		0.60	D 6																	
		0.60 - 1.00	B 7										(1.00)							1.00
		1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)													
		1.30 - 1.50	B 10																	
		1.40	D 9																	
		1.50 - 1.95	D 12		1.50 - 1.95	SPT S	N=24 (2,3/5,5,7,7)	1.50	Dry				1.50	+103.50		(MADE GROUND)				
		1.50 - 2.50	B 17		1.50	PID	ID DT10769 Er 72% 0.0 ppmv (Test 5)									Stiff light brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, brick and sandstone.				
		1.50	ES 11																	
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		1.80	D 16		2.00	PID	0.0 ppmv (Test 6)													
		2.00	ES 15										(1.20)				2.10 Subrounded chalk cobble (80x80x80mm).			
		2.50 - 2.95	D 13		2.50 - 2.95	SPT S	N=29 (4,4/6,8,8,7)	2.50	Dry											
		2.50 - 3.00	DYS	100% rec, dia 87mm			ID DT10769 Er 72%													
		2.75	D 19										2.70	+102.30						
		2.90 - 3.50	W 090822										(0.10)	+102.20		(MADE GROUND)				
		3.00	ES 18		3.00 - 3.45	SPT C	N=11 (16,12/5,2,2,2)	3.00	Dry				2.80	+102.00		Brownish black slightly sandy slightly clayey angular to subangular fine to coarse of GRAVEL brick, concrete and macadam. Sand is fine to coarse.				
		3.00 - 3.50	DYS	100% rec, dia 67mm	3.00	PID	ID DT10769 Er 72% 0.0 ppmv (Test 7)						(0.20)			(MADE GROUND)				
		3.20	D 20										3.00	+101.60		Stiff light brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, brick and sandstone.			1 ▽ 1 -	
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=20 (2,3/3,5,6,6)	3.50	Dry				(0.40)							3.40 SP
		3.50 - 4.50	DYS	100% rec, dia 67mm			ID DT10769 Er 72%						3.40			(MADE GROUND)				
		3.60	D 21													Brown slightly sandy slightly clayey angular to subangular fine to coarse GRAVEL of concrete and flint. Sand is fine to coarse.				
																Firm light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (Possible LOWESTOFT FORMATION)				
		4.20	ES 22		4.20	PID	0.0 ppmv (Test 8)						(1.55)							
					4.50 - 4.95	SPT C	N=11 (3,3/2,2,3,4)	4.50	Dry											
							ID DT10769 Er 72%													
23 Jun 22	1800												4.95	+100.05		END OF EXPLORATORY HOLE				4.95
0.00	Dry																			

General Remarks

Termination Reason: Hole collapsing back to 4.00m

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	3.20	Remained at 3.20 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:17

AGS

Borehole

DS06

Sheet 1 of 1

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	22 Jun 22 - 22 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	22 Jun 22
Approved	1.50 - 5.45	22 Jun 22 - 22 Jun 22	Dynamic sampling	Dando Terrier	Labourers	PR	22 Jun 22
DB							

Hole Depth	Hole Dia. (mm)
2.50	101
3.50	87
4.50	67
5.00	57

Casing Depth	Casing Dia. (mm)

Depth Related Remarks Depth	Remarks

Ground Level	105.07 mOD
Coordinates	E 555889.90
National Grid	N 224172.76
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
22 Jun 22	0800	0.10 - 0.30	B 4		0.10	PID	0.0 ppmv (Test 1)						(0.32)			MACADAM				
0.00	Dry	0.10	ES 1										0.32	+104.75		(MADE GROUND) Dark brown gravelly fine to coarse SAND with low cobble content. Gravel is angular to subangular, fine to coarse of concrete, macadam and brick. Cobbles are of concrete.	0.32 Geotextile.			
		0.20	D 2		0.30	PID	0.0 ppmv (Test 2)													
		0.30	ES 3		0.50	PID	0.0 ppmv (Test 3)						(0.58)							
		0.50	ES 5																	
		0.60	D 6										0.90	+104.17		(MADE GROUND) Dark brownish grey mottled brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to medium of flint and chalk.				
		0.60 - 0.90	B 7																	
		1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)						(0.60)							
		1.20	D														1.35 Becoming light brown mottled grey.			
		1.20	D 9																	
		1.20 - 1.50	B 10		1.50 - 1.95	SPT S	N=12 (3,3/3,3,2,4)	1.50	Dry				1.50	+103.57		(MADE GROUND) Firm light brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of flint, sandstone, chalk and flint.					
		1.50 - 1.95	D 12		1.50	PID	ID DT10769 Er 72%													
		1.50 - 2.50	B 19				0.0 ppmv (Test 5)													
		1.50	ES 11																	
		1.50 - 2.50	DYS	100% rec, dia 101mm	2.00	PID	0.0 ppmv (Test 6)						(1.00)							
		1.80	D 18																	
		2.00	ES 17																	
		2.50 - 2.95	D 13		2.50 - 2.95	SPT S	N=44 (5,20/17,15,7,5)	2.50	Dry				2.50	+102.57						
		2.50 - 3.50	B 23				ID DT10769 Er 72%						(0.20)							
		2.50 - 3.50	DYS	100% rec, dia 87mm									2.70	+102.37		(MADE GROUND) Light grey sandy subangular to subrounded, fine to coarse GRAVEL of flint and limestone. Sand is fine to coarse.				
		2.60	D 20													Stiff light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
		2.80	D 22		3.00	PID	0.0 ppmv (Test 7)													
		3.00	ES 21																	
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=27 (3,4/6,6,7,8)	3.50	Dry											
		3.50 - 4.50	B 26				ID DT10769 Er 72%													
		3.50 - 4.50	DYS	100% rec, dia 67mm																
		3.80	D 25																	
		4.00	ES 24		4.00	PID	0.0 ppmv (Test 8)						(2.75)							
		4.50 - 4.95	D 15		4.50 - 4.95	SPT S	N=29 (4,5/5,6,8,10)	4.50	Dry											
		4.50 - 5.00	DYS	100% rec, dia 57mm			ID DT10769 Er 72%													
		4.70	D 27																	
		5.00 - 5.45	D 16		5.00 - 5.45	SPT S	N=33 (4,6/7,7,9,10)	5.00	Dry											
							ID DT10769 Er 72%													
22 Jun 22	1800												5.45	+99.62		END OF EXPLORATORY HOLE				5.45
0.00	Dry																			

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
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AGS

Borehole
DS07

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 0.50	01 Jul 22 - 01 Jul 22	Concrete coring	Concrete corer	Labourers	VJ	01 Jul 22
	0.50 - 1.50	01 Jul 22 - 01 Jul 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	VJ	01 Jul 22
Approved	1.50 - 5.45	05 Jul 22 - 05 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP	05 Jul 22
DB							

Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)
2.50	101		
3.50	87		
4.50	77		
5.00	67		

Depth Related Remarks Depth	Remarks

Ground Level	104.75 mOD
Coordinates	E 555948.60
National Grid	N 224172.07
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
01 Jul 22	0800 Dry												(0.60)			Extremely strong light grey CONCRETE.				Flush Cover
		0.60	D 1		0.60	PID	0.0 ppmv (Test 1)						0.60	+104.15		(MADE GROUND)				
		0.60	ES 2										(0.20)			Dark brown gravelly fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse of brick, concrete and flint. Cobbles are angular of brick and concrete (120x110x60mm).				
		1.00	D 3		1.00	PID	0.0 ppmv (Test 2)						0.80	+103.95		(MADE GROUND)				0.80
		1.00	ES 4										(0.70)			Soft grey mottled light brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
01 Jul 22	1800 Dry												1.50	+103.25		(MADE GROUND)				
		1.50 - 1.95	D 4		1.50 - 1.95	SPT S	N=7 (1,1/1,2,2,2)		Dry				(0.20)			Soft dark brown slightly gravelly sandy CLAY. Gravel is subangular to subrounded, fine to medium of flint, chalk and brick with roots and rootlets. Sand is fine to coarse.				
05 Jul 22	0800 Dry	1.50	D 5		1.50	PID	ID 0658 Er 57%						1.70	+103.05		(MADE GROUND)				1.70 SP
		1.50	ES 6				0.0 ppmv (Test 3)						(0.40)			Soft dark greenish brown mottled bluish grey slightly silty gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint with pockets of soft black organic clay with occasional decaying wood and rootlets. (Reworked LOWESTOFT FORMATION)				
		1.50 - 2.50	DYS	100% rec, dia 101mm									2.10	+102.65		Soft dark greenish brown slightly gravelly CLAY. Gravel is rounded to subrounded, fine of chalk with occasional pockets (up to 50x10x10mm) of black fibrous spongy peat. (LOWESTOFT FORMATION)				
		2.00	D 6		2.00	PID	0.0 ppmv (Test 4)						(0.35)			Firm greenish brown mottled bluish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.00	ES 5										2.45	+102.30		Stiff grey mottled brown slightly gravelly CLAY. Gravel is rounded to subrounded, fine of flint with frequent rootlets. (LOWESTOFT FORMATION)				
		2.10 - 2.45	B 8										(0.45)							
		2.50 - 2.95	D 9		2.50 - 2.95	SPT S	N=16 (1,2/3,4,4,5)		Dry				2.90	+101.85						
		2.50	D 7				ID 0658 Er 57%													
		2.50 - 3.50	DYS	100% rec, dia 87mm																
		3.00	D 11		3.00	PID	0.0 ppmv (Test 5)													
		3.00 - 3.50	B 13																	
		3.00	ES 10																	
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=17 (1,2/2,4,5,6)		Dry											
		3.50	D 12				ID 0658 Er 57%													
		3.50 - 4.50	DYS	100% rec, dia 77mm																
		4.00	D 16		4.00	PID	0.0 ppmv (Test 6)													
		4.00 - 4.50	B 18																	
		4.00	ES 15																	
		4.50 - 4.95	D 19		4.50 - 4.95	SPT S	N=29 (3,5/6,7,8,8)		Dry											
		4.50	D 17				ID 0658 Er 57%													
		4.50 - 5.00	DYS	100% rec, dia 67mm																
		5.00 - 5.45	D 22		5.00 - 5.45	SPT S	N=28 (4,5/6,6,7,9)		Dry											
		5.00	D 21		5.00	PID	ID 0658 Er 57%													
05 Jul 22	1800 Dry	5.00	ES 20				0.0 ppmv (Test 7)						5.45	+99.30		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:17

AGS

Borehole

DS08

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 0.50	29 Jun 22 - 29 Jun 22	Concrete coring		Labourers	KG	29 Jun 22
	0.50 - 1.50	29 Jun 22 - 29 Jun 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	KG	29 Jun 22
Approved	1.50 - 5.45	05 Jul 22 - 05 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP	05 Jul 22
DB							

Hole		Casing		Depth Related Remarks	
Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks
2.50	117				
3.50	101				
4.50	87				
5.00	77				

Ground Level	104.97 mOD
Coordinates	E 555972.88
National Grid	N 224180.12
System	

Date	Time	Casing	Water
29 Jun 22	0800	0.00	Dry
05 Jul 22	1800	0.00	Dry
05 Jul 22	0800	0.00	Dry

Samples			Field Tests			Samp / Test		Coring Depth (Diameter)	TCR % SCR % RQD %	Water added	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
Depth	Type & No.	Records	Depth	Type	Records	Casing	Water			Flush details								
											(0.49)			CONCRETE				
0.50	ES 1		0.50	PID	0.0 ppmv (Test 1)						0.49	+104.48		(MADE GROUND) Stiff greyish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, flint and brick.				
											(0.46)							
1.00	ES 2		1.00	PID	0.0 ppmv (Test 2)						0.95	+104.02		Stiff brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of chalk and flint. (Possible Reworked LOWESTOFT FORMATION)				
											(0.55)							
1.50 - 1.95	D 4		1.50 - 1.95	SPT S	N=8 (1,1/2,2,2,2)						1.50	+103.47		Firm orangish brown mottled light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to medium of chalk and flint with pockets (up to 20x10x10mm) of orangish brown clayey sand. (LOWESTOFT FORMATION)				
1.50	ES 3		1.50	PID	ID 0658 Er 57%													
1.50 - 2.50	DYS	100% rec, dia 117mm			0.0 ppmv (Test 3)													
2.00	D 6		2.00	PID	0.0 ppmv (Test 4)													
2.00 - 2.50	B 8																	
2.00	ES 5																	
2.50 - 2.95	D 9		2.50 - 2.95	SPT S	N=18 (2,2/3,4,5,6)													
2.50	D 7				ID 0658 Er 57%						(2.10)							
2.50 - 3.50	DYS	100% rec, dia 101mm																
3.00	D 11		3.00	PID	0.0 ppmv (Test 5)													
3.00 - 3.50	B 13																	
3.00	ES 10																	
3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=18 (2,4/4,4,5,5)													
3.50	D 12				ID 0658 Er 57%						3.60	+101.37		Stiff brown mottled grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint with occasional orangish brown and reddish brown staining. (LOWESTOFT FORMATION)				
3.50 - 4.50	DYS	100% rec, dia 87mm																
4.00	D 16		4.00	PID	0.0 ppmv (Test 6)													
4.00 - 4.50	B 18																	
4.00	ES 15																	
4.50 - 4.95	D 19		4.50 - 4.95	SPT S	N=26 (3,3/5,6,8,7)													
4.50	D 17				ID 0658 Er 57%						(1.85)							
4.50 - 5.00	B 22																	
4.50 - 5.00	DYS	100% rec, dia 77mm																
5.00 - 5.45	D 23		5.00 - 5.45	SPT S	N=22 (4,4/5,4,6,7)													
5.00	D 21		5.00	PID	ID 0658 Er 57%													
5.00	ES 20				0.0 ppmv (Test 7)						5.45	+99.52		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:18

AGS

Borehole

DS09

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 0.50	29 Jun 22 - 29 Jun 22	Concrete coring	Concrete corer	Labourers	KG	29 Jun 22
	0.50 - 1.50	29 Jun 22 - 29 Jun 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	KG	29 Jun 22
Approved	1.50 - 5.45	05 Jul 22 - 05 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP	05 Jul 22
DB							

Hole		Casing		Depth Related Remarks	
Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks
2.50	117				
3.50	101				
4.50	87				
5.00	77				

Ground Level	104.43 mOD
Coordinates	E 556009.90
National Grid	N 224179.74
System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added: Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
29 Jun 22	0800												(0.50)			CONCRETE				Flush Cover
0.00	Dry	0.50	ES 1		0.50	PID	0.0 ppmv (Test 1)						0.50	+103.93		(MADE GROUND) Stiff yellowish light brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to medium of chalk and flint. (Reworked LOWESTOFT FORMATION)				0.50
		1.00	ES 2		1.00	PID	0.0 ppmv (Test 2)						(1.00)							
29 Jun 22	1800												1.50	+102.93		(MADE GROUND) Dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular, medium to coarse of flint and chalk with occasional fragments of concrete and brick.	1.90 1no. intact brick.			
0.00	Dry	1.50 - 1.95	D 4		1.50 - 1.95	SPT S	N=20 (2,2/3,5,5,7)						(0.60)							
05 Jul 22	0800	1.50	ES 3		1.50	PID	ID 0658 Er 57%						2.10	+102.33		Firm orangish brown mottled light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)				2.00 SP
0.00	Dry	1.50 - 2.50	DYS	100% rec, dia 117mm			0.0 ppmv (Test 3)						(1.40)							
		2.00	D 6		2.00	PID	0.0 ppmv (Test 4)						3.50	+100.93		Stiff grey mottled brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of chalk and flint with rare pockets of orangish brown sandy clay. (LOWESTOFT FORMATION)				
		2.00 - 2.50	B 8										(1.95)							
		2.00	ES 5										5.45	+98.98		END OF EXPLORATORY HOLE				5.45
		2.50 - 2.95	D 9		2.50 - 2.95	SPT S	N=26 (2,3/6,6,7,7)													
		2.50	D 7				ID 0658 Er 57%													
		2.50 - 3.50	DYS	100% rec, dia 101mm																
		3.00	D 11		3.00	PID	0.0 ppmv (Test 5)													
		3.00 - 3.50	B 13																	
		3.00	ES 10																	
		3.50	D 14		3.50 - 3.95	SPT S	N=22 (2,3/4,5,5,8)													
		3.50	D 12				ID 0658 Er 57%													
		3.50 - 4.50	DYS	100% rec, dia 87mm																
		4.00	D 16		4.00	PID	0.0 ppmv (Test 6)													
		4.00 - 4.50	B 18																	
		4.00	ES 15																	
		4.50	D 19		4.50 - 4.95	SPT S	N=20 (3,3/4,5,5,6)													
		4.50	D 17				ID 0658 Er 57%													
		4.50 - 5.00	DYS	100% rec, dia 77mm																
		5.00 - 5.45	D 22		5.00 - 5.45	SPT S	N=16 (3,3/3,5,5,5)													
		5.00	D 21		5.00	PID	ID 0658 Er 57%													
05 Jul 22	1800	5.00	ES 20				0.0 ppmv (Test 7)													
0.00	Dry																			

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS10

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 0.50	04 Jul 22 - 04 Jul 22	Concrete coring	Concrete corer	Labourers	BP	04 Jul 22
	0.50 - 1.50	04 Jul 22 - 04 Jul 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	BP	04 Jul 22
Approved	1.50 - 5.45	05 Jul 22 - 05 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP	05 Jul 22
DB							

Hole Depth	Hole Dia. (mm)
2.50	117
3.50	101
4.50	87
5.00	77

Casing Depth	Casing Dia. (mm)

Depth Related Remarks Depth	Remarks

Ground Level	104.72 mOD
Coordinates	E 556055.74
National Grid	N 224207.29
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
04 Jul 22	0800												(0.50)			CONCRETE				
0.00	Dry	0.50	ES 1		0.50	PID	0.0 ppmv (Test 1)						0.50	+104.22		(Probable MADE GROUND) Soft brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subangular, fine to coarse of flint				
													(0.50)							
		1.20	ES 2		1.20	PID	0.0 ppmv (Test 2)						1.00	+103.72		(Probable MADE GROUND) Soft brown mottled grey slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subangular, fine to coarse of flint				
04 Jul 22	1800												(0.50)							
0.00	Dry	1.50 - 1.95	D 4		1.50 - 1.95	SPT S	N=23 (1,2/3,5,7,8)						1.50	+103.22						
05 Jul 22	0800	1.50	ES 3		1.50	PID	ID 0658 Er 57%						(0.15)	+103.07		Firm brown mottled light grey gravelly CLAY. Gravel is subangular to subrounded, fine to medium of white chalk and flint. (LOWESTOFT FORMATION)				
0.00	Dry	1.50 - 2.50	DYS	100% rec, dia 117mm			0.0 ppmv (Test 3)						1.65			Stiff grey gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.00	D 6		2.00	PID	0.0 ppmv (Test 4)						(0.75)							
		2.00 - 2.50	B 8																	
		2.00	ES 5																	
		2.50	D 7		2.50 - 2.95	SPT S	N=15 (2,3/3,4,4,4)						2.40	+102.32		Stiff light brown mottled grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.50 - 2.95	D 9	100% rec, dia 101mm			ID 0658 Er 57%													
		2.50 - 3.50	DYS																	
		3.00	D 11		3.00	PID	0.0 ppmv (Test 5)													
		3.00 - 3.50	B 13																	
		3.00	ES 10																	
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=12 (1,2/2,3,3,4)													
		3.50	D 12				ID 0658 Er 57%						(2.40)							
		3.50 - 4.50	DYS	100% rec, dia 87mm																
		4.00	D 16		4.00	PID	0.0 ppmv (Test 6)													
		4.00 - 4.50	B 18																	
		4.00	ES 15																	
		4.50 - 4.95	D 19		4.50 - 4.95	SPT S	N=23 (3,4/4,7,6,6)													
		4.50	D 17				ID 0658 Er 57%													
		4.50 - 5.00	DYS	100% rec, dia 77mm									4.80	+99.92		Stiff grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		5.00 - 5.45	D 22		5.00 - 5.45	SPT S	N=19 (3,3/4,4,5,6)						(0.65)							
		5.00	D 21		5.00	PID	ID 0658 Er 57%													
05 Jul 22	1800	5.00	ES 20				0.0 ppmv (Test 7)						5.45	+99.27		END OF EXPLORATORY HOLE				5.45
0.00	Dry																			

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS11

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 0.50	01 Jul 22 - 01 Jul 22	Concrete coring	Concrete corer	Labourers	VJ	01 Jul 22
	0.50 - 1.50	01 Jul 22 - 01 Jul 22	Hand dug inspection pit assisted by vacuum excavation	Hand tools	Labourers	VJ	01 Jul 22
Approved	1.50 - 5.45	06 Jul 22 - 06 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP/SA	06 Jul 22
DB							

Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)
2.50	117		
3.50	101		
4.50	87		
5.00	77		

Depth Related Remarks Depth	Remarks

Ground Level	104.89 mOD
Coordinates	E 555990.26
National Grid	N 224151.85
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
01 Jul 22	0800															Extremely strong light grey CONCRETE.				
0.00	Dry												(0.60)							
		0.60	D 1		0.60	PID	0.0 ppmv (Test 1)						0.60	+104.29		(MADE GROUND)				
		0.60	ES 2										(0.20)			Dark brown gravelly fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse of brick, concrete and flint. Cobbles are angular of brick and concrete (120x130x80mm).				
		1.00	D 3										0.80	+104.09		(MADE GROUND)				
		1.00	ES 4										(0.70)			Soft grey mottled light brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of flint, chalk and brick.				
01 Jul 22	1800	1.20 - 2.50	DYS	100% rec, dia 117mm												(Reworked LOWESTOFT FORMATION)				
0.00	Dry	1.50	D 4		1.50 - 1.95	SPT S	N=18 (2,2/3,4,5,6)						1.50	+103.39		Firm brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk and flint with occasional rootlets.				
06 Jul 22	0800	1.50 - 1.95	D 5		1.50	PID	ID 0658 Er 57%									(LOWESTOFT FORMATION)				
0.00	Dry	1.50	ES 6				0.0 ppmv (Test 2)						(1.20)							
		2.00	D 6		2.00	PID	0.0 ppmv (Test 3)													
		2.00 - 2.50	B 8																	
		2.00	ES 5																	
		2.50 - 2.95	D 9		2.50 - 2.95	SPT S	N=24 (2,4/4,5,7,8)						2.70	+102.19		Stiff greyish brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of flint and chalk.				
		2.50	D 7				ID 0658 Er 57%									(LOWESTOFT FORMATION)				
		2.50 - 3.50	DYS	100% rec, dia 101mm									(0.80)							
		3.00	D 11		3.00	PID	0.0 ppmv (Test 4)													
		3.00 - 3.50	B 13																	
		3.00	ES 10																	
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=19 (3,2/4,4,6,5)						3.50	+101.39		Stiff light grey and orangish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk and flint.				
		3.50	D 12				ID 0658 Er 57%									(LOWESTOFT FORMATION)				
		3.50 - 4.50	DYS	100% rec, dia 87mm													4.40 Pocket of light orangish brown sand.			
		4.00	D 16		4.00	PID	0.0 ppmv (Test 5)													
		4.00 - 4.50	B 18																	
		4.00	ES 15																	
		4.50 - 4.95	D 19		4.50 - 4.95	SPT S	N=19 (2,2/4,4,5,6)						(1.95)							
		4.50	D 17				ID 0658 Er 57%													
		4.50 - 5.00	DYS	100% rec, dia 77mm																
		5.00 - 5.45	D 22		5.00 - 5.45	SPT S	N=22 (3,3/5,4,6,7)													
		5.00	D 21		5.00	PID	ID 0658 Er 57%													
06 Jul 22	1800	5.00	ES 20				0.0 ppmv (Test 6)													
0.00	Dry												5.45	+99.44		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS12

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	21 Jun 22 - 21 Jun 22	Machine dug inspection pit	16 ton JCB	Labourers	BP	21 Jun 22
	1.50 - 5.45	22 Jun 22 - 22 Jun 22	Dynamic sampling	Dando Terrier	Labourers	PR	22 Jun 22
Approved							
DB							

Hole		Casing		Depth Related Remarks	
Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks
2.50	101				
3.50	87				
4.50	67				
5.00	57				

Ground Level	105.06 mOD
Coordinates	E 555930.07
National Grid	N 224144.42
System	

Date	Time	Casing	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
															(0.15)			(MADE GROUND)				Flush cover
21 Jun 22	0800			0.10 - 0.20	B 3		0.10	PID	0.0 ppmv (Test 1)						0.15	+104.91		Grey sandy angular to subangular coarse GRAVEL and COBBLES of concrete and brick.				
0.00	Dry			0.10	ES 1										(0.40)			Reinforced CONCRETE with 6mm and 9mm rebar.				
				0.20	D 2		0.30	PID	0.0 ppmv (Test 2)						0.55	+104.51		(MADE GROUND)				
				0.30	ES 4													Dark brown gravelly fine to coarse SAND with high cobble content. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are of concrete and intact bricks.				
				0.50 - 0.90	B 6										(0.55)							
				0.55	D 5																	
				1.00	ES 7		1.00	PID	0.0 ppmv (Test 3)						1.10	+103.96		(MADE GROUND)				
				1.20	D 8										(0.40)			Loose grey sandy GRAVEL. Sand is medium to coarse. Gravel is rounded to subrounded of mixed aggregate.				
21 Jun 22	1800			1.30 - 1.50	B 9																	
0.00	Dry			1.50 - 1.95	D 11		1.50 - 1.95	SPT S	N=2 (0,0/1,0,1,0)	1.50	Dry				1.50	+103.56		(MADE GROUND)	1.50-3.50 Brick fragments.		1.50	
22 Jun 22	0800			1.50 - 2.20	B 18		1.50	PID	ID DT10769 Er 72%									Firm light brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse of chalk, flint, sandstone and brick.				
0.00	Dry			1.50	ES 10				0.0 ppmv (Test 4)													
				1.50 - 2.50	DYS	70% rec, dia 101mm																
				1.80	D 17		2.00	PID	0.0 ppmv (Test 5)													
				2.00	ES 16																	
				2.50 - 2.95	D 12		2.50 - 2.95	SPT S	N=9 (1,1/1,3,3,2)	2.50	Dry				(2.00)							
				2.50 - 3.50	B 21				ID DT10769 Er 72%													
				2.50 - 3.50	DYS	100% rec, dia 87mm																
				2.80	D																	
				2.80	D 20		3.00	PID	0.0 ppmv (Test 6)													
				3.00	ES 19																	
				3.50 - 3.95	D 13		3.50 - 3.95	SPT S	N=19 (2,3/3,5,5,6)	3.30	Dry				3.50	+101.56		Stiff light brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)			1 ▽	
				3.50 - 4.40	B 24				ID DT10769 Er 72%													
				3.50 - 4.50	DYS	90% rec, dia 67mm																
				3.80	D 23																	
				4.00	ES 22		4.00	PID	0.0 ppmv (Test 7)													
				4.50 - 4.95	D 14		4.50 - 4.95	SPT S	N=28 (3,5/5,7,8,8)	4.50	Dry				(1.95)						4.50	SP
				4.50 - 5.00	DYS	100% rec, dia 57mm			ID DT10769 Er 72%													
				4.60	D 26																	
				5.00 - 5.45	D 15		5.00 - 5.45	SPT S	N=26 (4,5/5,6,7,8)	5.00	Dry											
				5.00	ES 25		5.00	PID	ID DT10769 Er 72%													
22 Jun 22	1800								0.0 ppmv (Test 8)													
0.00	Dry														5.45	+99.61		END OF EXPLORATORY HOLE			5.45	

General Remarks

Re-drilled for installation 07/09/2022

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	3.60		

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS13

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole Depth	Hole Dia. (mm)	Casing Depth	Casing Dia. (mm)	Depth Related Remarks Depth	Depth Related Remarks Remarks
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	PR	23 Jun 22	2.50	101				
Approved	1.50 - 3.50	23 Jun 22 - 23 Jun 22	Dynamic Sampling	Dando Terrier	Labourers	PR	23 Jun 22	3.50	87				
DB													

Ground Level	104.91 mOD
Coordinates	E 555874.83
National Grid	N 224152.18
System	

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
													(0.09)	+104.82		CONCRETE.				
23 Jun 22	0800	0.10 - 0.35	B 4		0.10	PID	0.0 ppmv (Test 1)						0.09			(MADE GROUND)				
0.00	Dry	0.10	ES 1													Light orangish brown gravelly fine to coarse SAND with high cobble content.				
		0.20	D 3		0.30	PID	0.0 ppmv (Test 2)						(0.31)			Gravel is subangular to subrounded, fine to coarse of concrete and flint.				
		0.30	ES 2											+104.51		Cobbles are concrete (1100x100x900mm).				
													0.40							
		0.75	ES 5		0.75	PID	0.0 ppmv (Test 3)						(0.30)							
		0.80 - 1.20	B 6										0.70			CONCRETE.				
														+104.21		(MADE GROUND)				
		1.30	D 7													Firm brown slightly gravelly CLAY. Gravel is angular to subangular, fine to coarse of flint, chalk, sandstone and brick.				
		1.50 - 1.95	D 10		1.50 - 1.95	SPT S	N=16 (2,2/3,4,3,6)	1.50	Dry											
		1.50	D 9		1.50	PID	ID DT10769 Er 72%													
		1.50 - 2.50	B 14				0.0 ppmv (Test 4)													
		1.50	ES 8										(2.20)							
		1.50 - 2.50	DYS	100% rec, dia 101mm	2.00	PID	0.0 ppmv (Test 5)												1	
		1.80	D 12																1	
		2.00	ES 13																	
		2.50 - 2.95	D 11		2.50 - 2.95	SPT S	N=56 (4,3/5,8,24,19)	2.50	Dry											
		2.50 - 3.50	DYS	90% rec, dia 87mm			ID DT10769 Er 72%													
													2.90							
		2.95	D 15		3.00	PID	0.0 ppmv (Test 6)							+102.01		(MADE GROUND)				
		3.00	ES 16										(0.60)			Dark brown slightly sandy clayey subangular to subrounded fine to coarse GRAVEL of flint, brick and limestone. Sand is fine to coarse.				
23 Jun 22	1800												3.50							
0.00	Dry													+101.41		END OF EXPLORATORY HOLE				3.50

General Remarks

Termination Reason: Suspected utility - possible drain.

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed
1	2.20	Rose to 1.90 m after 20 minutes.	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:19

AGS

Borehole

DS14

Sheet 1 of 1

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	PR	23 Jun 22
	1.50 - 5.45	23 Jun 22 - 23 Jun 22	Dynamic Sampling	Dando Terrier	Labourers	PR	23 Jun 22
Approved							
DB							

Hole		Casing		Depth Related Remarks	
Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks
2.50	101				
3.50	87				
4.50	67				
5.00	57				

Ground Level	104.83 mOD
Coordinates	E 555873.17
National Grid	N 224083.14
System	

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
23 Jun 22	0800	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)						(0.15)			(MADE GROUND)				
0.00	Dry	0.20 - 0.70	B 3										0.15	+104.68		Black angular to subangular fine to coarse GRAVEL of macadam.				
		0.30	ES 2		0.30	PID	0.0 ppmv (Test 2)									(MADE GROUND)				
		0.50	ES 5		0.50	PID	0.0 ppmv (Test 3)						(0.65)			Soft light brown slightly sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of concrete, macadam, flint and brick. Occasional fragments of plastic (5x5x5mm).	0.50 100mm diameter plastic pipe.			
		0.60	D 4										0.80	+104.03						
		0.90 - 1.40	B 7													Firm light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
		1.00	ES 6		1.00	PID	0.0 ppmv (Test 4)													
		1.20	D																	
		1.20	D 8										(1.30)							
		1.50 - 1.95	D 10		1.50 - 1.95	SPT S	N=17 (2,3/3,4,5,5)	1.50	Dry											
		1.50 - 2.00	B 17		1.50	PID	ID DT10769 Er 72%													
		1.50	ES 9				0.0 ppmv (Test 5)													
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		1.80	D 16		2.00	PID	0.0 ppmv (Test 6)													
		2.00	ES 15										2.10	+102.73						
		2.20 - 2.80	B 18													Stiff dark grey mottled light grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.50 - 2.95	D 11		2.50 - 2.95	SPT S	N=8 (1,4/2,2,2,2)	2.50	Dry				(0.80)							
		2.50 - 3.50	DYS	90% rec, dia 87mm	2.70	PID	ID DT10769 Er 72%													
		2.60	D 19				0.0 ppmv (Test 7)													
		2.70	ES 20										2.90	+101.93						
		2.95	D 21		3.00	PID	0.0 ppmv (Test 8)						(0.20)							
		3.00	ES 22										3.10	+101.73		Soft light brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)				
		3.20 - 4.20	B 23													Stiff dark brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
		3.50 - 3.95	D 12		3.50 - 3.95	SPT S	N=24 (2,3/5,5,7,7)	3.50	Dry											
		3.50 - 4.50	DYS	90% rec, dia 67mm			ID DT10769 Er 72%													
		3.60	D 24										(1.20)							
		4.00	ES 25		4.00	PID	0.0 ppmv (Test 9)													
		4.40	D 26										4.30	+100.53						
		4.50 - 4.95	D 13		4.50 - 4.95	SPT S	N=24 (3,4/5,5,6,8)	4.50	Dry							Stiff dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
		4.50 - 5.00	DYS	100% rec, dia 57mm			ID DT10769 Er 72%													
		5.00 - 5.45	D 14		5.00 - 5.45	SPT S	N=29 (3,5/6,7,8,8)	5.00	Dry				(1.15)							
							ID DT10769 Er 72%													
23 Jun 22	1800												5.45	+99.38						5.45
0.00	Dry															END OF EXPLORATORY HOLE				

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:20

AGS

Borehole

DS15

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	23 Jun 22 - 23 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	24 Jun 22
	1.50 - 5.45	24 Jun 22 - 24 Jun 22	Dynamic Sampling	Dando Terrier	Labourers	PR	24 Jun 22
Approved							
DB							

Hole Depth	Hole Dia. (mm)
2.50	101
3.50	87
4.50	67
5.00	57

Casing Depth	Casing Dia. (mm)

Depth Related Remarks Depth	Remarks

Ground Level 105.06 mOD
Coordinates E 555962.93
National Grid N 224111.98
System

Date / Casing	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
24 Jun 22	0800	0.10 - 0.35	B 4		0.10	PID	0.0 ppmv (Test 1)						(0.40)			(MADE GROUND) Light grey and dark brown sandy angular to subangular, medium to coarse GRAVEL of concrete, brick and macadam. Sand is medium to coarse. Rare decaying wood (up to 150x400mm).	0.35-0.40 Abundant bituminous material.			
0.00	Dry	0.10	ES 1										0.40	+104.66		(MADE GROUND) Firm dark greyish brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint with orangish brown staining.				
		0.20	D 2		0.30	PID	0.0 ppmv (Test 2)													
		0.30	ES 3		0.50	PID	0.1 ppmv (Test 3)													
		0.50	ES 5																	
		0.60	D 6																	
		0.70 - 1.00	B 7										(0.90)							
		1.00	ES 8																	
		1.30	D 9										1.30	+103.76						
		1.30 - 1.50	B 10													Firm dark greyish brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
		1.50 - 1.95	D 12		1.50 - 1.95	SPT S	N=10 (1,2/2,2,3,3)	1.50	Dry											
		1.50 - 2.50	B 19		1.50	PID	ID DT10769 Er 72% 0.0 ppmv (Test 4)													
		1.50	ES 11																	
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		1.80	D 18		2.00	PID	0.0 ppmv (Test 5)													
		2.00	ES 17										(2.10)							
		2.50 - 2.95	D 13		2.50 - 2.95	SPT S	N=14 (2,3/3,3,4,4)	2.50	Dry											
		2.50 - 3.40	B 22				ID DT10769 Er 72%													
		2.50 - 3.50	DYS	100% rec, dia 87mm																
		2.80	D 21																	
		3.00	ES 20		3.00	PID	0.0 ppmv (Test 6)													
		3.50 - 3.95	D 14		3.50 - 3.95	SPT S	N=18 (2,3/3,4,5,6)	3.50	Dry				3.40	+101.66		Stiff dark grey mottled brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		3.50 - 5.00	B 25				ID DT10769 Er 72%													
		3.50 - 4.50	DYS	100% rec, dia 67mm																
		3.80	D 24																	
		4.00	ES 23		4.00	PID	0.0 ppmv (Test 7)													
		4.50 - 4.95	D 15		4.50 - 4.95	SPT S	N=19 (2,3/4,4,5,6)	4.50	Dry				(2.05)							
		4.50 - 5.00	DYS	100% rec, dia 57mm			ID DT10769 Er 72%													
		4.80	D																	
		4.80	D 26																	
		5.00 - 5.45	D 16		5.00 - 5.45	SPT S	N=29 (3,3/6,7,7,9)	5.00	Dry											
							ID DT10769 Er 72%													
24 Jun 22	1800												5.45	+99.61		END OF EXPLORATORY HOLE				5.45
0.00	Dry																			

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:50
Printed 16 Dec 2022 15:31:20

AGS

Borehole DS16

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	24 Jun 22 - 24 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	BP	24 Jun 22
	1.50 - 5.45	24 Jun 22 - 24 Jun 22	Dynamic Sampling	Dando Terrier	Labourers	PR	24 Jun 22
Approved							
DB							

Hole		Casing	
Depth	Dia. (mm)	Depth	Dia. (mm)
2.50	101		
3.50	87		
4.50	67		
5.00	57		

Depth Related Remarks	
Depth	Remarks

Ground Level	104.72 mOD
Coordinates	E 555875.14
National Grid	N 224074.41
System	

Date / Casing	Time / Water
24 Jun 22	0800
0.00	Dry
24 Jun 22	1800
0.00	Dry

Samples: Depth	Type & No.	Records
0.10 - 0.40	B 4	
0.10	ES 1	
0.30	ES 2	
0.40	D 3	
0.50	ES 5	
0.70	D 6	
0.80 - 1.00	B 7	
1.00	ES 8	
1.30	D 9	
1.30 - 1.50	B 10	
1.50 - 1.95	D 12	
1.50 - 2.50	B 19	
1.50	ES 11	
1.50 - 2.50	DYS	80% rec, dia 101mm
1.80	D 18	
2.00	ES 17	
2.50 - 2.95	D	
2.50 - 2.95	D 13	
2.50 - 3.50	B 22	100% rec, dia 87mm
2.50 - 3.50	DYS	
2.80	D 21	
3.00	ES 20	
3.50 - 3.95	D 14	
3.50 - 4.50	B 25	
3.50 - 4.50	DYS	70% rec, dia 67mm
3.80	D 24	
4.00	ES 23	
4.50 - 4.95	D 15	
4.50 - 5.00	DYS	100% rec, dia 57mm
5.00 - 5.45	D 16	

Field Tests: Depth	Type	Records
0.10	PID	0.0 ppmv (Test 1)
0.30	PID	0.0 ppmv (Test 2)
0.50	PID	0.0 ppmv (Test 3)
1.00	PID	0.0 ppmv (Test 4)
1.50 - 1.95	SPT S	N=7 (0,1/1,1,2,3)
1.50	PID	ID DT10769 Er 72%
		0.0 ppmv (Test 5)
2.00	PID	0.0 ppmv (Test 6)
2.50 - 2.95	SPT S	N=14 (2,2/3,3,4,4)
		ID DT10769 Er 72%
3.00	PID	0.0 ppmv (Test 7)
3.50 - 3.95	SPT S	N=24 (3,3/5,5,6,8)
		ID DT10769 Er 72%
4.00	PID	0.0 ppmv (Test 8)
4.50 - 4.95	SPT S	N=27 (4,4/6,6,7,8)
		ID DT10769 Er 72%
5.00 - 5.45	SPT S	N=37 (10,8/8,9,10,10)
		ID DT10769 Er 72%

Samp / Test: Casing	Water
1.50	Dry
2.50	Dry
3.50	Dry
4.50	Dry
5.00	Dry

Coring Depth (Diameter) | TCR % SCR % RQD %

Water added / Flush details

Depth (Thickness)	Level
(0.40)	
0.40	+104.32
(0.40)	
0.80	+103.92
(0.70)	
1.50	+103.22
(1.00)	
2.50	+102.22
(1.00)	
3.50	+101.22
(1.95)	
5.45	+99.27

Legend

Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
(MADE GROUND) Grey angular medium to coarse GRAVEL of concrete and brick with high cobble content. Cobbles are of brick and concrete.				
(MADE GROUND) Firm gravelly CLAY. Gravel is subangular, fine to coarse of flint and concrete with occasional rootlets.				
(MADE GROUND) Firm slightly gravelly CLAY. Gravel is rounded to subrounded, fine to coarse of chalk and flint with occasional rootlets and rare brick.				
(MADE GROUND) Firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of flint, chalk, brick and sandstone.				
Stiff light brown mottled grey slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk, flint and sandstone. (LOWESTOFT FORMATION)				
Stiff dark brown slightly gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
Printed 16 Dec 2022 15:31:20

AGS

Borehole
DS17

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	105.80 mOD
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555961.51
	1.50 - 5.45	06 Jul 22 - 06 Jul 22	Dynamic sampling	Dando Terrier	Endeavour	BP	06 Jul 22	2.50	101					National Grid	N 224079.78
Approved								3.50	87						System
DB								4.50	77						
								5.00	67						

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring: Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
30 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)						(0.30)			(TOPSOIL) Brown slightly gravelly silty fine to medium SAND with frequent rootlets. Gravel is angular to subrounded, fine to coarse of flint, chalk, concrete and brick.				Flush Cover
0.00	Dry	0.10 - 0.30	B 3										0.30	+105.50		(MADE GROUND) Soft mottled dark grey and dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk, flint and brick. (Reworked LOWESTOFT FORMATION)				
		0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)						(0.70)							
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)													
		0.50	D 6																	
		0.50	ES 5																	
		1.00	ES 7		1.00	PID	0.0 ppmv (Test 4)						1.00	+104.80						
		1.10 - 1.30	B 8										(0.30)							
30 Jun 22	1800												1.30	+104.50		(MADE GROUND) Soft to firm mottled dark grey and light brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
0.00	Dry												(0.20)							
		1.50 - 1.95	D 11		1.50 - 1.95	SPT S	N=7 (1,1/2,1,2,2)						1.50	+104.30						
06 Jul 22	0800	1.50	D 10		1.50	PID	ID DT0658 Er 57%													
0.00	Dry	1.50	ES 9				0.0 ppmv (Test 5)													
		1.50 - 2.50	DYS	100% rec, dia 101mm												(MADE GROUND) Soft light brown mottled light grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Reworked LOWESTOFT FORMATION)				
		2.00	D 13		2.00	PID	0.0 ppmv (Test 6)													
		2.00 - 2.50	B 15																	
		2.00	ES 12																	
		2.50 - 2.95	D 16		2.50 - 2.95	SPT S	N=14 (2,2/3,3,4,4)						(1.60)			Firm becoming stiff light brown mottled light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to medium of chalk and flint with frequent pockets (up to 40x30x20mm) of yellowish brown sand. (LOWESTOFT FORMATION)	2.30 Becoming stiff.			
		2.50	D 14				ID DT0658 Er 57%													
		2.50 - 3.50	DYS	100% rec, dia 87mm																
		3.00	D 18		3.00	PID	0.0 ppmv (Test 7)													
		3.00 - 3.50	B 20																	
		3.00	ES 17										3.10	+102.70		Stiff grey gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk with black speckling and orangish brown staining. (LOWESTOFT FORMATION)				
		3.50	D 21		3.50 - 3.95	SPT S	N=23 (3,4/5,5,6,7)						(0.90)							3.50
		3.50	D 19				ID DT0658 Er 57%													
		3.50 - 4.50	DYS	100% rec, dia 77mm																
		4.00	D 23		4.00	PID	0.0 ppmv (Test 8)						4.00	+101.80		Stiff light brown mottled grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint. Occasional rootlets. (LOWESTOFT FORMATION)				
		4.00	ES 22																	
		4.40	D 24		4.40 - 4.85	SPT S	N=23 (8,7/5,5,6,7)						(1.45)							
		4.40 - 5.00	B 28				ID DT0658 Er 57%													
		4.50 - 4.95	D 25																	
		4.50 - 5.00	DYS	100% rec, dia 67mm																
		5.00 - 5.45	D 29		5.00 - 5.45	SPT S	N=31 (3,7/7,6,8,10)													SP
		5.00	D 27		5.00	PID	ID DT0658 Er 57%													
06 Jul 22	1800	5.00	ES 26				0.0 ppmv (Test 9)													
0.00	Dry												5.45	+100.35		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

Printed 16 Dec 2022 15:31:21

AGS

Borehole

DS18

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged	Hole		Casing		Depth Related Remarks		Ground Level	104.34 mOD
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22	Depth	Dia. (mm)	Depth	Dia. (mm)	Depth	Remarks	Coordinates	E 555887.41
	1.50 - 5.45	04 Jun 22 - 04 Jul 22	Dynamic sampling	Dando Terrier	Labourers	BA	04 Jul 22	2.50	101					National Grid	N 224036.06
Approved								3.50	87					System	
DB								4.50	77						
								5.00	67						

Date / Casing	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Samp / Test: Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added / Flush details	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Chisel.	Water Entry	Backfill
30 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)						(0.45)			(TOPSOIL) Grass over dark brown slightly gravelly silty fine to medium SAND with frequent rootlets. Gravel is angular to subrounded, fine to coarse of flint, brick and chalk.				Flush Cover
0.00	Dry	0.10 - 0.30	B 3										0.45	+103.89		(MADE GROUND) Soft dark grey mottled greyish brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, chalk and concrete. Cobbles are angular to subangular of chalk and flint (150x120x100mm). (Reworked LOWESTOFT FORMATION)				
		0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)						(0.55)							
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)						1.00	+103.34						
		0.50	D 6										(0.50)			(MADE GROUND) Soft greyish brown mottled grey and black slightly sandy slightly gravelly CLAY with medium cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, chalk and brick. Occasional fragments of black decaying wood (108x70x30mm). Cobbles are angular of brick, flint and chalk (120x120x80mm). (Reworked LOWESTOFT FORMATION)				
		0.50	ES 5										1.50	+102.84		Stiff to very stiff grey mottled brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to medium of chalk and flint. (Possible LOWESTOFT FORMATION)				3.00
		1.00	ES 7		1.00	PID	0.0 ppmv (Test 4)						(3.95)							
		1.10 - 1.30	B 8																	4.50
30 Jun 22	1800																			SP
0.00	Dry	1.50 - 1.95	D 11		1.50 - 1.95	SPT S	N=16 (2,1/3,4,4,5)		Dry											
04 Jul 22	0800	1.50	D 10		1.50	PID	ID DT10769 Er 72%													
0.00	Dry	1.50	ES 9				0.0 ppmv (Test 5)													
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		2.00	D 13		2.00	PID	0.0 ppmv (Test 6)													
		2.00 - 2.50	B 14																	
		2.00	ES 12																	
		2.50 - 2.95	D 15		2.50 - 2.95	SPT S	N=23 (2,2/4,5,7,7)		Dry											
		2.50 - 3.50	DYS	100% rec, dia 87mm			ID DT10769 Er 72%													
		3.00	D 17		3.00	PID	0.0 ppmv (Test 7)													
		3.00 - 3.50	B 18																	
		3.00	ES 16																	
		3.50 - 3.95	D 19		3.50 - 3.95	SPT S	N=27 (2,3/5,6,8,8)		Dry											
		3.50 - 4.40	DYS	100% rec, dia 77mm			ID DT10769 Er 72%													
		4.00 - 4.95	D 23		4.00	PID	0.0 ppmv (Test 8)													
		4.00	D 21																	
		4.00 - 4.50	B 22																	
		4.00	ES 20																	
		4.40 - 5.00	DYS	100% rec, dia 67mm	4.50 - 4.95	SPT S	N=38 (6,6/8,9,9,12)		Dry											
							ID DT10769 Er 72%													
		5.00 - 5.45	D 26		5.00 - 5.45	SPT S	N=29 (5,7/6,5,8,10)		Dry											
		5.00	D 25		5.00	PID	ID DT10769 Er 72%													
04 Jul 22	1800	5.00	ES 24				0.0 ppmv (Test 9)													
0.00	Dry												5.45	+98.89		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling

Depths	Duration (mins)	Tool

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:50

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AGS

Borehole

DS19

Borehole Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Rig Crew	Logger	Logged
DB	0.00 - 1.50	30 Jun 22 - 30 Jun 22	Machine dug inspection pit	JCB 3CX	Labourers	VJ	30 Jun 22
Approved	1.50 - 5.45	04 Jul 22 - 04 Jul 22	Dynamic sampling	Dando Terrier	Labourers	BA	04 Jul 22
DB							

Hole Depth	Hole Dia. (mm)
2.50	101
3.50	87
4.50	77
5.00	67

Casing Depth	Casing Dia. (mm)

Depth Related Remarks Depth	Remarks

Ground Level	104.51 mOD
Coordinates	E 555911.41
National Grid	N 224040.21
System	

Date Casing	Time Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Samp / Test Casing	Water	Coring Depth (Diameter)	TCR % SCR % RQD %	Water added Flush details	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Chisel.	Water Entry	Backfill
30 Jun 22	0800	0.10	D 1		0.10	PID	0.0 ppmv (Test 1)						(0.40)			(MADE GROUND) Dark brown slightly gravelly silty fine to medium SAND with frequent rootlets. Gravel is angular to subrounded, fine to coarse of flint, brick, concrete and chalk.				
0.00	Dry	0.10 - 0.30	B 3										0.40	+104.11						
		0.10	ES 2		0.30	PID	0.0 ppmv (Test 2)									(MADE GROUND) Soft dark grey mottled dark brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, brick, concrete and chalk. Cobbles are angular of chalk and flint (150x120x120mm). (Reworked LOWESTOFT FORMATION)				
		0.30	ES 4		0.50	PID	0.0 ppmv (Test 3)						(0.60)							
		0.50	D 6																	
		0.50	ES 5										1.00	+103.51						
		1.00	ES 7		1.00	PID	0.0 ppmv (Test 4)						(0.50)							
		1.10 - 1.30	B 8																	
30 Jun 22	1800												1.50	+103.01		(MADE GROUND) Soft mottled dark grey and yellowish brown slightly sandy slightly gravelly CLAY with medium cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of flint, chalk and brick. Cobbles are angular of chalk, flint and brick (200x100x60mm). (Reworked LOWESTOFT FORMATION)				
0.00	Dry	1.50 - 1.95	D 11		1.50 - 1.95	SPT S	N=26 (2,3/4,6,8,8)		Dry				(0.20)							
04 Jul 22	0800	1.50	D 10		1.50	PID	ID DT10769 Er 72%						1.70	+102.81						
0.00	Dry	1.50	ES 9				0.0 ppmv (Test 5)									Stiff light brown mottled grey slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)				
		1.50 - 2.50	DYS	100% rec, dia 101mm																
		2.00	D 13		2.00	PID	0.0 ppmv (Test 6)						(1.30)							
		2.00 - 2.50	B 14																	
		2.00	ES 12																	
		2.50 - 2.95	D 15		2.50 - 2.95	SPT S	N=12 (2,3/2,2,3,5)		Dry							Stiff grey mottled brown to orangish brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)				
		2.50 - 3.50	DYS	100% rec, dia 87mm			ID DT10769 Er 72%													
		3.00	D 17		3.00	PID	0.0 ppmv (Test 7)						3.00	+101.51						
		3.00	ES 16													Stiff brown mottled grey mottled orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)				
		3.50 - 3.95	D 18		3.50 - 3.95	SPT S	N=23 (2,3/4,5,7,7)		Dry											
		3.50 - 4.50	DYS	100% rec, dia 77mm			ID DT10769 Er 72%													
		4.00	D 20		4.00	PID	0.0 ppmv (Test 8)													
		4.00 - 4.50	B 21										(2.45)							
		4.00	ES 19																	
		4.50 - 4.95	D 22		4.50 - 4.95	SPT S	N=36 (3,3/6,7,8,15)		Dry											
		4.50 - 5.00	DYS	100% rec, dia 67mm			ID DT10769 Er 72%													
		5.00 - 5.45	D 25		5.00 - 5.45	SPT S	N=34 (5,5/7,8,9,10)		Dry											
		5.00	D 24		5.00	PID	ID DT10769 Er 72%													
04 Jul 22	1800	5.00	ES 23				0.0 ppmv (Test 9)													
0.00	Dry												5.45	+99.06		END OF EXPLORATORY HOLE				5.45

General Remarks

Hard Boring / Chiselling
Depths | Duration (mins) | Tool

Groundwater Entries
No. | Depth | Remarks | Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status
FINAL

Scale 1:50
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AGS

Borehole
DS20

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.89 mOD
DB	0.00 - 4.00	14 Jun 22 - 14 Jun 22	Machine dug trial pit	Wheeled 360 excavator	Marriott	BP	14 Jun 22	Width 0.60 m, Length 4.00 m, 220 (Deg)	Depth: 0.00 - 4.00	Remarks: No groundwater encountered during excavation	Coordinates	E 555662.47
Approved: DB											National Grid	N 224298.83
											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
14 Jun 22	1122	Dry	0.10 - 0.50	B 5		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Light grey sandy slightly clayey GRAVEL. Sand is fine to coarse. Gravel is angular to subangular fine to coarse of brick, wood, concrete, bituminous material and flint.			
			0.10	ES 1											
			0.20	ES 2		0.20	PID	0.0 ppmv (Test 2)							
			0.30	D 3					(0.60)						
			0.50	ES 4		0.50	PID	0.0 ppmv (Test 3)							
			0.60 - 1.00	B 6					0.60	+104.29		Firm light brown mottled light grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of cream low density very weak chalk. Occasional cobbles of black flint (up to 300x270mm). (LOWESTOFT FORMATION)			
			0.90	D 7											
			1.50 - 2.00	B 9		1.50	PID	0.0 ppmv (Test 4)							
			1.50	ES 8					(1.80)						
			2.00	ES 11		2.00	PID	0.0 ppmv (Test 5)							
			2.10	D 10											
			2.50 - 3.00	B 12					2.40	+102.49		Stiff light brown mottled light grey slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of cream low density very weak chalk. Occasional cobbles of black flint (up to 300x270mm). (LOWESTOFT FORMATION)			
			2.60	D 13											
			3.00	D 15											
									(1.60)						
			3.50 - 4.00	B 14											
14 Jun 22	1419	Dry	3.80	D 16											
			4.00	ES 17		4.00	PID	0.0 ppmv (Test 6)	4.00	+100.89		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability: Stable
Shoring: None
Weather: Sunny

Groundwater Entries

No. | Depth | Remarks | Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
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AGS

Trial Pit TP01

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.02 mOD
DB	0.00 - 4.00	13 Jun 22 - 13 Jun 22	Machine dug trial pit.	18 ton JCB	Labourers	BP	13 Jun 22	Width 0.60 m Length 4.00 m C / B / D / A 324 (Deg)	Depth	Remarks	Coordinates	E 555722.63
Approved											National Grid	N 224324.07
DB											System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
13 Jun 22	0800	Dry	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Firm dark greyish brown sandy gravelly silty CLAY with occasional cobbles and frequent rootlets (up to 8mm). Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of flint and rare off white chalk. Cobbles are subangular (up to 230x240mm) of flint.			
			0.30	ES 2		0.30	PID	0.0 ppmv (Test 2)	(0.55)						
			0.50	D 3											
			0.60	ES 4		0.60	PID	0.0 ppmv (Test 3)	0.55	+105.47		(MADE GROUND) Stiff brown mottled light grey slightly sandy slightly gravelly CLAY with medium cobble content. Sand is fine to medium. Gravel is angular to subrounded fine to coarse of flint and subrounded to rounded off white chalk with orangish brown staining and black speckling. Cobbles are subrounded (up to 120x90x80mm) of very weak and weak cream chalk with frequent black speckling.			
			0.80	B 5											
			1.00	D 6											
			1.50	ES 7		1.50	PID	0.0 ppmv (Test 4)							
			1.80	B 9											
			2.00 2.00	D 11 ES 10		2.00	PID	0.0 ppmv (Test 5)							
			2.50	D 13					(3.45)						
			3.00 3.00	D 14 B 12											
13 Jun 22	1800	Dry	3.80	B 15											
			4.00	D 16					4.00	+102.02		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability Stable
Shoring None
Weather Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

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Printed 26 Apr 2023 06:36:51

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Trial Pit **TP02**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.79 mOD
DB	0.00 - 4.00	13 Jun 22 - 13 Jun 22	Machine dug trial pit	18 ton JCB	Labourers	BP	13 Jun 22	Width 0.60 m, Length 4.40 m; C/B/D/A; 220 (Deg)	Depth	Remarks	Coordinates	E 555744.73
Approved											National Grid	N 224285.06
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
13 Jun 22	0800	Dry	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Soft light brown slightly sandy gravelly CLAY with rare cobbles. Sand is fine to medium. Gravel is subangular to angular fine to coarse of brick, concrete and flint (up to 100x100mm). Cobbles are (up to 260x300x250mm) of concrete. Occasional intact red bricks.			
			0.20 - 0.60	B 4											
			0.30	ES 2		0.30	PID	0.2 ppmv (Test 2)							
			0.50	ES 3		0.50	PID	0.0 ppmv (Test 3)	(1.10)						
			0.60	D 5											
			1.10 - 1.50	B 8					1.10	+105.69		(MADE GROUND) Firm dark grey mottled dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium occasionally coarse of flint and white chalk with black speckling. Slight organic odour.	1.10-1.40 Pockets (up to 200mm) of dark brown slightly organic sandy clay.		
			1.50	ES 7		1.50	PID	0.0 ppmv (Test 4)							
			1.60	D 9					(1.00)						
			2.00 - 2.40	B 12		2.00	PID	0.0 ppmv (Test 5)							
			2.00	ES 10											
			2.10	D 11					2.10	+104.69		Stiff brown mottled light grey slightly sandy gravelly CLAY with occasional cobbles. Sand is fine to medium. Gravel is angular to subrounded fine to coarse of flint and subrounded to rounded fine to coarse cream chalk with orangish brown staining and frequent black speckling. Cobbles are (up to 260x260mm) of flint. (LOWESTOFT FORMATION)			
			2.50	D 14		2.50	PID	0.0 ppmv (Test 6)							
			2.50	ES 13											
			3.00	D 15					(1.90)						
			3.20 - 3.60	B 16											
			3.50	D 17											
13 Jun 22	1800	Dry													
			4.00	D 18					4.00	+102.79		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability Stable
Shoring None
Weather Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

Scale 1:25
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Trial Pit TP03

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.98 mOD
DB	0.00 - 4.00	14 Jun 22 - 14 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	BP	14 Jun 22	Width 0.60 m, Length 4.00 m; C, B, D, A; 220 (Deg)	Depth	Remarks	Coordinates	E 555715.83
Approved											National Grid	N 224246.06
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
14 Jun 22	0800	Dry	0.10	ES 1		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Grey angular to subangular fine to coarse GRAVEL of concrete.			
			0.20	ES 2		0.20	PID	0.2 ppmv (Test 2)	(0.55)				0.30-0.55 High cobble content comprising intact bricks and concrete.		
			0.50	D 3		0.50	PID	0.2 ppmv (Test 3)							
			0.50	ES 4					0.55	+104.43		(MADE GROUND) Dark brown gravelly fine to coarse SAND. Gravel is angular to subangular, fine to coarse of concrete and brick.			
									(0.35)						
			0.90	B 5					0.90	+104.08		Soft dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of flint. (Possible LOWESTOFT FORMATION)			
			1.00	D 6											
			1.00 - 1.50	B 7											
			1.50	ES 8		1.50	PID	0.2 ppmv (Test 4)	(1.20)						
						2.00	PID	0.2 ppmv (Test 5)							
			2.10	ES 10					2.10	+102.88		Firm brown mottled light grey gravelly CLAY with pockets of black peat. Gravel is angular to subangular, fine to coarse of flint and chalk. (Possible HEAD)			
									(0.30)						
			2.50	D 11					2.40	+102.58		Stiff light brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk and flint. (LOWESTOFT FORMATION)			
			2.50 - 3.00	B 12											
			3.00	ES 13		3.00	PID	0.2 ppmv (Test 6)							
			3.20	D 14					(1.60)						
			3.50 - 4.00	B 15											
14 Jun 22	1800	Dry													
									4.00	+100.98		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status

FINAL

Scale 1:25

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Trial Pit

TP04

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.77 mOD
DB	0.00 - 4.00	15 Jun 22 - 15 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	BP	15 Jun 22	Width 0.60 m, Length 4.00 m, C/B/D/A, 208 (Deg)	Depth	Remarks	Coordinates	E 555750.57
Approved DB											National Grid	N 224216.43
											System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
15 Jun 22	0800	Dry	0.10 - 0.50	B 6		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Firm dark brown gravelly silty CLAY. Gravel is angular to subangular, fine to coarse of brick, concrete and chalk.			
			0.10	ES 1					(0.50)						
			0.30	ES 2		0.30	PID	0.1 ppmv (Test 2)							
			0.50	ES 3		0.50	PID	0.1 ppmv (Test 3)	0.50	+104.27					
			0.60	D 4								Firm becoming stiff dark greenish brown mottled brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of chalk. (Possible LOWESTOFT FORMATION)			
			1.00	D 7											
			1.00 - 1.50	B 9											
			1.50	ES 8		1.50	PID	0.0 ppmv (Test 4)	(1.90)						
			2.00	ES 11		2.00	PID	0.0 ppmv (Test 5)							
			2.20	D 12											
			2.40	D 13					2.40	+102.37					
			2.40 - 2.60	B 15								Stiff dark brown mottled black slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to medium of chalk and flint. Occasional pockets of black firm fibrous peat and wood. (Possible LOWESTOFT FORMATION)			
			2.50	ES 14		2.50	PID	0.0 ppmv (Test 6)	(0.40)						
			3.00	D 16					2.80	+101.97		Stiff light brown mottled light grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of flint and chalk with occasional orangish brown staining and black speckling. (LOWESTOFT FORMATION)			
15 Jun 22	1800	Dry							(1.20)						
									4.00	+100.77		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability Good
Shoring None
Weather Sunny

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

Scale 1:25
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AGS

Trial Pit TP05

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.83 mOD
DB	0.00 - 4.00	15 Jun 22 - 15 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	BP	15 Jun 22	Width 0.60 m, Length 4.10 m; C/B/D/A; 208 (Deg)	Depth	Remarks	Coordinates	E 555821.83
Approved											National Grid	N 224163.40
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
15 Jun 22	0800	Dry	0.10 - 0.30	B 4		0.10	PID	0.0 ppmv (Test 1)	(0.30)			(MADE GROUND) Light grey and brown slightly clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete, macadam and type 1 aggregate.			
			0.10	ES 1											
			0.20	D 2											
			0.30	ES 3		0.30	PID	0.0 ppmv (Test 2)	0.30	+104.53					
			0.40 - 0.80	B 7								(MADE GROUND) Firm light brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of brick, concrete, type 1 aggregate, wood and chalk.			
			0.50	ES 5		0.50	PID	0.0 ppmv (Test 3)							
			0.60	D 6											
									(1.00)						
			1.00	D 8											
			1.30 - 1.70	B 11					1.30	+103.53					
			1.50	ES 10		1.50	PID	0.0 ppmv (Test 4)				(MADE GROUND) Stiff dark greyish brown slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete, chalk and flint. Cobbles are of intact and partially intact brick. Occasional metal rebar and wood fragments (up to 100x30mm).			
			2.00	ES 12		2.00	PID	0.0 ppmv (Test 5)							
			2.10	D 13											
									(1.80)						
			2.50	ES 14		2.50	PID	0.0 ppmv (Test 6)							
			2.60	D 15											
			2.60 - 3.00	B 16											
													3.00-3.10 Bituminous material. Layer of woven fabric beneath tarmac and bricks.		
			3.20 - 3.60	B 19					3.10	+101.73		Dark brown gravelly CLAY. Gravel is angular to subangular, fine to medium of brick and concrete. Occasional pockets (up to 30x20mm) of peat and wood with frequent carbonaceous material. (Possible MADE GROUND)			
			3.30	ES 18		3.30	PID	0.0 ppmv (Test 7)							
									(0.80)						
15 Jun 22	1800	Dry	3.90 - 4.00	B 21		3.90	PID	0.0 ppmv (Test 8)	3.90	+100.93		Stiff light brown mottled light grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk. Occasional orangish brown staining. (LOWESTOFT FORMATION)		1 1	4.00
			3.90	ES 20					(0.10)						
			4.00	D 22					4.00	+100.83		END OF EXPLORATORY HOLE			

General Remarks

Stability	Good
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed
1	4.00	Rose to 3.95 m after 20 minutes. Slow seepage	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status

FINAL

Scale 1:25

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AGS

Trial Pit

TP06

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.64 mOD
DB	0.00 - 4.00	15 Jun 22 - 15 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	BP	15 Jun 22	Width 0.60 m Length 4.00 m C / B / D / A 10 (Deg)	Depth	Remarks	Coordinates	E 555839.57
Approved											National Grid	N 224145.37
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
15 Jun 22	0800	Dry	0.10 - 0.50	B 5		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Light greyish brown sandy slightly clayey angular fine to coarse GRAVEL of concrete, flint and brick. Sand is fine to coarse. Rare cobbles of concrete (up to 250mm).			
			0.10	ES 1					(0.50)						
			0.30	ES 2		0.30	PID	0.0 ppmv (Test 2)					0.30 Plastic mesh.		
			0.50	D 4		0.50	PID	0.5 ppmv (Test 3)	0.50	+104.14		(MADE GROUND) Light greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular, fine to coarse of concrete, brick and flint. Occasional metal rebar (9mm diameter).			
			0.50	ES 3											
			0.60 - 0.90	B 7											
			0.80	D 6					(0.50)						
			0.90	ES 8		0.90	PID	0.0 ppmv (Test 4)							
									1.00	+103.64		(MADE GROUND) Firm light grey and dark brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular, fine to medium of brick, macadam, concrete and chalk.			
			1.50	D 9											
			1.60	ES 10		1.60	PID	0.0 ppmv (Test 5)							
			1.70 - 2.00	B 11											
			2.30	D 13		2.30	PID	0.0 ppmv (Test 6)	(2.50)						
			2.30	ES 12											
			2.50 - 3.00	B 15											
			2.90	ES 16		2.90	PID	0.0 ppmv (Test 7)							
			3.20 - 3.50	B 19									3.20 Pocket of soft black clay.		
			3.30	ES 18		3.30	PID	0.0 ppmv (Test 8)							
									3.50	+101.14		Stiff light brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk. Pockets (up to 200x200mm) of carbonaceous material. (LOWESTOFT FORMATION)			
			3.70	D 20					(0.50)						
15 Jun 22	1800	Dry	3.80 - 4.00	B 22		3.80	PID	0.0 ppmv (Test 9)						1	
			3.80	ES 21										1	
									4.00	+100.64		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Good
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed
1	4.00	Rose to 3.90 m after 20 minutes. Slow seepage	

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:25

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Trial Pit

TP07

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.80 mOD
DB	0.00 - 4.00	17 Jun 22 - 17 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	CD	17 Jun 22	Width 0.60 m, Length 3.40 m; C/B/D/A; 350 (Deg)	Depth	Remarks	Coordinates	E 555879.76
Approved											National Grid	N 224135.56
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
17 Jun 22	0800	Dry	0.10 - 0.20	B 3		0.10	PID	0.0 ppmv (Test 1)	(0.20)			(MADE GROUND) Light brownish grey gravelly fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of concrete and flint.			
			0.10	ES 1					0.20	+104.60					
			0.15	D 2								(MADE GROUND) Reddish brown gravelly clayey fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse of flint and concrete. Cobbles are of concrete. Occasional brick fragments (up to 140x800x80mm).	0.40-0.60 PSD result indicates clayey very sandy gravel		
			0.30	ES 4		0.30	PID	0.1 ppmv (Test 2)							
			0.35	D 5											
			0.40 - 0.60	B 6											
			0.50	ES 7		0.50	PID	0.0 ppmv (Test 3)	(0.50)						
									0.70	+104.10					
			0.75	ES 8		0.75	PID	0.0 ppmv (Test 4)				(MADE GROUND) Firm locally stiff greyish brown mottled light grey and dark grey slightly sandy slightly gravelly CLAY with occasional fragments of brick (up to 110x90x80mm). Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of flint, concrete and chalk. (Reworked LOWESTOFT FORMATION)			
			0.80	D 9											
			0.80 - 1.00	B 10											
			1.00	ES 11		1.00	PID	0.1 ppmv (Test 5)							
			1.50	ES 13		1.50	PID	0.2 ppmv (Test 6)							
			1.60	D 14											
			1.80 - 2.00	B 15											
			2.00	ES 15		2.00	PID	0.0 ppmv (Test 7)	(2.60)						
			2.30	D 17											
			2.80	D 18											
			2.80 - 3.00	B 19											
			3.00	ES 20		3.00	PID	0.0 ppmv (Test 8)							
									3.30	+101.50					
			3.40	D 22		3.40	PID	0.0 ppmv (Test 9)				Stiff locally firm light brown mottled light grey slightly sandy gravelly CLAY with occasional pockets (up to 100x80x10mm) of black fibrous peat and roots (up to 150x15x15mm) with organic odour. Sand is medium to coarse. Gravel is rounded to subrounded, fine to coarse of flint and chalk. (Possible LOWESTOFT FORMATION)			
			3.40 - 3.60	B 23											
			3.40	ES 21					(0.70)						
17 Jun 22	1800	Dry	3.90	D 24											
									4.00	+100.80		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status

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Trial Pit

TP08

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.01 mOD
DB	0.00 - 4.00	16 Jun 22 - 16 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	CD/BP	16 Jun 22	Width 0.60 m, Length 3.90 m, C/B/D/A, 155 (Deg)	Depth	Remarks	Coordinates	E 555901.26
Approved DB											National Grid	N 224075.76
											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
									0						
16 Jun 22	0800	Dry	0.10 - 0.20	B 3		0.10	PID	0.1 ppmv (Test 1)	(0.20)			(MADE GROUND) Light grey gravelly fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of concrete and flint.			
			0.10	ES 1					0.20	+104.81			0.20 Geo-membrane textile seperating strata.		
			0.15	D 2		0.25	PID	0.2 ppmv (Test 2)				(MADE GROUND) Stiff light brown mottled light grey slightly sandy slightly gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk with occasional pockets of flint and dark brown clay. (Reworked LOWESTOFT FORMATION)			
			0.25	ES 4											
			0.30	D 5											
			0.30 - 0.50	B 6											
			0.50	ES 7		0.50	PID	0.0 ppmv (Test 3)							
									(1.50)						
			1.00	ES 9		1.00	PID	0.0 ppmv (Test 4)							
			1.30	D 10											
			1.30 - 1.50	B 11											
									1.70	+103.31					
			1.80	ES 12		1.80	PID	0.0 ppmv (Test 5)				Firm light brown mottled light grey slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of flint and chalk with occasional rootlets. Cobbles are of chalk. (LOWESTOFT FORMATION)			
			1.90	D 13											
			1.90 - 2.10	B 14											
									(0.80)						
			2.50	D 15					2.50	+102.51		Stiff light brown mottled greenish brownish grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to medium of flint and chalk. Frequent roots and rootlets (up to 5mm). Occasional pockets of dark greenish brown clay. (LOWESTOFT FORMATION)			
			2.70 - 3.00	B 18		2.70	PID	0.0 ppmv (Test 6)							
			2.70	ES 16											
									(1.50)						
			3.50	D 19									3.50 Becoming dark grey mottled brown.		
			3.50 - 4.00	B 20											
16 Jun 22	1800	Dry													
			4.00	ES 21		4.00	PID	0.0 ppmv (Test 7)	4.00	+101.01		END OF EXPLORATORY HOLE			4.00
									5						

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status: FINAL

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Trial Pit: **TP09**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.26 mOD
DB	0.00 - 2.50	16 Jun 22 - 16 Jun 22	Machine dug trial pit.	16 ton JCB	Labourers	CD	16 Jun 22	Width 0.60 m, Length 4.20 m, 135 (Deg)	Depth	Remarks	Coordinates	E 555934.86
Approved DB											National Grid	N 224090.96
											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
			0.05	D 2		0.05	PID	0.0 ppmv (Test 1)	(0.10)			(MADE GROUND)			
16 Jun 22	0800	Dry	0.05 - 0.10	B 3					0.10	+105.16		Light brownish grey gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded, fine to coarse of concrete, brick and flint.			
			0.05	ES 1								(MADE GROUND)			
			0.20	ES 4		0.20	PID	0.3 ppmv (Test 2)				Firm to stiff light brown to brown mottled grey to light grey slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse of flint, chalk and rare brick fragments (up to 50x40x40mm).			
			0.30	D 5								(Reworked LOWESTOFT FORMATION)			
			0.30 - 0.50	B 6											
			0.50	ES 7		0.50	PID	0.1 ppmv (Test 3)							
													0.60-1.60 Reddish brown slightly sandy angular to subangular fine to coarse gravel of aggregate. Encountered in Face D - not laterally continuous.		
			0.80	D 8											
									(1.80)						
			1.30 - 1.50	B 11		1.30	PID	0.0 ppmv (Test 4)							
			1.30	ES 9										1	
			1.80	D 12											
									1.90	+103.36		Stiff to firm light brown mottled light grey and orangish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of flint and chalk.			
			2.00	ES 13		2.00	PID	0.0 ppmv (Test 5)				(LOWESTOFT FORMATION)			
			2.10	D 14											
			2.20 - 2.40	B 15					(0.60)						
16 Jun 22	1240	Dry													
									2.50	+102.76		END OF EXPLORATORY HOLE			2.50

General Remarks

Termination Reason: Water ingress

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed
1	1.60		

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status

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Trial Pit

TP10

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.79 mOD
DB	0.00 - 4.00	20 Jun 22 - 20 Jun 22	Machine dug trial pit	23 tone JCB	Labourers	BP	20 Jun 22	Width 0.60 m, Length 3.80 m; C/B/D/A; 103 (Deg)	Depth	Remarks	Coordinates	E 555920.00
Approved DB											National Grid	N 224133.72
											System	

Date	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
20 Jun 22	0800 Dry	0.10	ES 1		0.10	PID	0.3 ppmv (Test 1)	(0.30)			(MADE GROUND) Compacted sandy angular to subrounded, fine to coarse GRAVEL of chalk, flint, brick and concrete. Sand is fine to coarse.			
		0.30 - 0.50	B 5		0.30	PID	0.4 ppmv (Test 2)	0.30	+104.49					
		0.30	ES 2								(MADE GROUND) Firm slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of flint, chalk and concrete. Occasional whole bricks and rare pockets of carbonaceous material.			
		0.40	D 3											
		0.50	ES 4		0.50	PID	0.2 ppmv (Test 3)	(0.50)						
		0.60 - 0.80	B 7											
		0.70	ES 8		0.70	PID	0.0 ppmv (Test 4)							
		0.80	D 6					0.80	+103.99		(MADE GROUND) Firm light greyish brown gravelly CLAY. Gravel is angular to subangular, fine to medium of chalk and flint. Rare brick fragments (up to 40mm) and occasional pockets of clay.			
								(0.60)						
		1.40 - 2.00	B 11					1.40	+103.39		Firm to stiff gravelly CLAY. Gravel is angular to subrounded, fine to coarse of chalk and flint with frequent orangish brown staining. Occasional wood fragments (up to 200x100mm). Occasional pockets of clay. (Possible HEAD DEPOSITS)			
		1.50	ES 10		1.50	PID	0.0 ppmv (Test 5)							
		2.00	ES 12		2.00	PID	0.0 ppmv (Test 6)							
		2.10	D 13					(1.50)						
		2.60	D 14											
		2.80 - 3.00	B 15											
		3.00	ES 16		3.00	PID	0.0 ppmv (Test 7)	2.90	+101.89		Light brown mottled light grey gravelly CLAY. Gravel is rounded to subrounded, fine to medium of chalk with orangish brown staining. (LOWESTOFT FORMATION)			
		3.10	D 17											
		3.50	D 18					(1.10)						
		3.50 - 4.00	B 19											
20 Jun 22	1800 Dry													
		4.00	ES 20		4.00	PID	0.0 ppmv (Test 8)	4.00	+100.79		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

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Trial Pit **TP11**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.10 mOD
DB	0.00 - 4.00	05 Jul 22 - 05 Jul 22	Machine dug trial pit	JCB 160	Labourers	BA	05 Jul 22	Width 1.20 m Length 5.00 m C / B / D / A 213 (Deg)	Depth	Remarks	Coordinates	E 556036.54
Approved											National Grid	N 224134.14
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
									0.00						
05 Jul 22	0800	Dry	0.05 0.10 - 0.50 0.10	D 1 B 5 ES 2		0.10	PID	0.0 ppmv (Test 1)				(MADE GROUND) Firm brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to rounded, fine to coarse of flint, brick and concrete. Rare fragments (up to 2mm) of wire and rare plastic (2x4x4mm).			
			0.30	ES 3		0.30	PID	0.0 ppmv (Test 2)	(0.80)						
			0.50 0.50	D 6 ES 4		0.50	PID	0.0 ppmv (Test 3)							
									0.80	+104.30		(MADE GROUND) Very stiff grey mottled brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to rounded, fine to coarse of chalk and flint. (Reworked LOWESTOFT FORMATION)			
			1.00 1.00 - 1.20 1.00	D 7 B 9 ES 8		1.00	PID	0.0 ppmv (Test 4)							
			1.50 1.50	D 10 ES 11		1.50	PID	0.0 ppmv (Test 5)	(1.20)						
			2.00 2.00 - 2.20 2.00	D 12 B 14 ES 13		2.00	PID	0.0 ppmv (Test 6)	2.00	+103.10		Stiff dark brown mottled grey locally black slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is subangular to rounded, fine to medium of chalk and flint. (LOWESTOFT FORMATION)			
			2.50 2.50	D 15 ES 16		2.50	PID	0.0 ppmv (Test 7)	(1.00)				2.40 Drainage pipe exposed along Face A during excavation. Width of hole extended towards Face C to excavate past pipe.		
			3.00 3.00 - 3.20	D 17 B 18					3.00	+102.10		Stiff grey and white mottled brown slightly sandy gravelly CLAY. Gravel is subangular to rounded, fine to coarse of chalk and flint. Frequent pockets (20x20x30mm) of coarse orange sand. (LOWESTOFT FORMATION)			
			3.50	D 19					(1.00)						
05 Jul 22	1800	Dry	3.90 - 4.00	B 21											
			4.00	D 20					4.00	+101.10		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status

FINAL

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Trial Pit

TP12

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.12 mOD
DB	0.00 - 4.00	28 Jun 22 - 28 Jun 22	Machine dug trial pit	18 ton JCB	Labourers	BP	28 Jun 22	Width 0.65 m, Length 3.10 m, 230 (Deg)	Depth	Remarks	Coordinates	E 555753.33
Approved											National Grid	N 224584.19
DB											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
									0.00						
28 Jun 22	0800	Dry	0.10 - 0.30	B 4		0.10	PID	0.0 ppmv (Test 1)	(0.30)			(TOPSOIL) Dark brown and brownish grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular, fine to coarse of chalk. flint, brick and concrete.			
			0.10	ES 1											
			0.20	D 2											
			0.30	ES 3		0.30	PID	0.0 ppmv (Test 2)	0.30	+105.82					
			0.50	ES 5		0.50	PID	0.0 ppmv (Test 3)				(MADE GROUND) Dark grey mottled light yellowish brown slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of chalk and flint. Cobbles are of chalk. Pockets (300x300x400mm) of clayey sand. (Possible reworked LOWESTOFT FORMATION)			
			0.70	D 6											
			0.80 - 1.00	B 7											
			1.00	ES 8		1.00	PID	0.0 ppmv (Test 4)							
			1.30	D 9					(2.10)						
			1.50	ES 10		1.50	PID	0.0 ppmv (Test 5)							
			1.80 - 2.00	B 11									1.90-2.40 Pockets of clayey sand absent.		
			2.00	D 12											
									2.40	+103.72					
			2.50	ES 13		2.50	PID	0.0 ppmv (Test 6)				Firm to stiff grey gravelly CLAY. Gravel is rounded to subrounded, fine to coarse of chalk. (LOWESTOFT FORMATION)			
			2.80	D 14											
			2.80 - 3.00	B 15											
			3.20	D 16					(1.60)						
			3.50	ES 17		3.50	PID	0.0 ppmv (Test 7)							
28 Jun 22	1800	Dry	3.80 - 4.00	B 18											
			4.00	D 20					4.00	+102.12		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status

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Trial Pit

TP13

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.26 mOD
DB	0.00 - 4.00	27 Jun 22 - 27 Jun 22	Machine dug trial pit	18 ton JCB	Labourers	BP	27 Jun 22	Width 3.10 m, Length 4.10 m; C/B/D/A; 230 (Deg)	Depth	Remarks	Coordinates	E 555804.03
Approved DB											National Grid	N 224596.42
											System	

Date	Time	Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
27 Jun 22	0800	Dry	0.10 - 0.50	B 4		0.10	PID	0.0 ppmv (Test 1)	(0.20)			(TOPSOIL) Dark brown slightly gravelly sandy CLAY. Sand is fine to medium. Gravel is angular to subangular, fine to medium of flint and chalk with abundant rootlets.	0.10-0.20 Macadam in Face A.		
			0.10	ES 1					0.20	+106.06					
			0.20	D 2								(MADE GROUND) Greyish brown slightly clayey SAND and GRAVEL. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of concrete, brick, macadam and flint.			
			0.30	ES 3		0.30	PID	0.0 ppmv (Test 2)	(0.30)						
			0.50	ES 5		0.50	PID	0.0 ppmv (Test 3)	0.50	+105.76		(MADE GROUND) Firm brown and orangish brown mottled grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of flint, chalk and type 1 aggregate with rare brick and shell fragments. Pockets (up to 70x100mm) of soft light bluish grey clay and orangish brown gravelly slightly clayey sand.			
			0.80	D 6											
			0.80 - 1.20	B 8											
			1.00	ES 7		1.00	PID	0.0 ppmv (Test 4)	(1.00)						
			1.50	ES 9		1.50	PID	0.0 ppmv (Test 5)	1.50	+104.76		Firm to stiff dark greyish brown mottled grey gravelly CLAY. Gravel is angular to subrounded, fine to coarse of flint, chalk with orangish brown staining. (LOWESTOFT FORMATION)			
			1.70	D 10											
			1.70 - 2.00	B 11											
			2.00	D 12											
			2.50	ES 13		2.50	PID	0.0 ppmv (Test 6)	(1.40)						
			2.70	B 14											
			3.00	D 15					2.90	+103.36		Stiff dark grey gravelly CLAY. Gravel is rounded to subrounded, fine to coarse of chalk with occasional black speckling. (LOWESTOFT FORMATION)			
			3.50	ES 16		3.50	PID	0.0 ppmv (Test 7)	(1.10)						
			3.70 - 4.00	B 17											
27 Jun 22	1800	Dry							4.00	+102.26		END OF EXPLORATORY HOLE			4.00

General Remarks

Stability Stable
Shoring None
Weather Wet

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
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Trial Pit TP14

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.05 mOD
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	CD	16 Jun 22	Width 0.60 m Length 2.30 m C / B / D / A	Depth	Remarks	Coordinates	E 555679.51
Approved											National Grid	N 224332.95
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
											(MADE GROUND) Light brownish grey gravelly silty fine to coarse SAND with rare rootlets. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Possible reworked LOWESTOFT FORMATION)			
16 Jun 22	0800 Dry							(0.15) 0.15	+104.90		(MADE GROUND) Firm to stiff light brown mottled light grey slightly sandy gravelly CLAY with rare pockets (up to 20x20x20mm) of dark orangish brown silty clay. Sand is medium to coarse. Gravel is subangular to subrounded, fine to coarse of flint and chalk. (Possible reworked LOWESTOFT FORMATION)			
16 Jun 22	1800 Dry							(1.35)						
								1.50	+103.55		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability
Shoring
Weather

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status

FINAL

Scale 1:25
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AGS

Trial Pit

CPT01

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.03 mOD
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	16 Jun 22	Width 0.45 m Length 2.00 m C / B / D / A	Depth	Remarks	Coordinates	E 555735.69
Approved											National Grid	N 224304.15
DB											System	

Date	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
16 Jun 22	0800 Dry							(0.60)			(MADE GROUND) Grey angular to subangular coarse GRAVEL and COBBLES of brick and concrete.			
								0.60	+105.43		(MADE GROUND) Firm dark brownish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick and concrete.			
16 Jun 22	1800 Dry							(0.90)						
								1.50	+104.53		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
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Trial Pit **CPT02**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	106.19 mOD
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	16 Jun 22	Width 0.45 m Length 2.00 m C / B / D / A	Depth	Remarks	Coordinates	E 555771.25
Approved											National Grid	N 224255.07
DB											System	

Date	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
16 Jun 22	0800 Dry							(0.70)			(MADE GROUND) Grey angular to subangular coarse GRAVEL and COBBLES of brick and concrete.			
								0.70	+105.49		(MADE GROUND) Firm dark brownish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of brick and concrete.			
16 Jun 22	1800 Dry							(0.80)						
								1.50	+104.69		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
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Trial Pit **CPT03**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.24 mOD
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	CD	16 Jun 22	Width 0.60 m Length 2.30 m C / B / D / A	Depth	Remarks	Coordinates	E 555824.02
Approved											National Grid	N 224216.22
DB											System	

Date	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
16 Jun 22	0800 Dry							(1.00)			(MADE GROUND) Light grey to greyish brown sandy angular to subrounded fine to coarse GRAVEL of concrete, brick and flint with medium cobble content. Cobbles are of concrete comprising 50-60% aggregate of angular fine to coarse flint and up to 10% small voids.			
								1.00	+104.24		(MADE GROUND) Stiff light grey mottled brownish grey slightly sandy gravelly CLAY with occasional pockets (up to 50x50x50mm) of black slightly sandy peat. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. (Possible reworked LOWESTOFT FORMATION)			
16 Jun 22	1800 Dry							(0.50)						
								1.50	+103.74		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability
Shoring
Weather

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Carried out for	Marriott Civils

Status

FINAL

Scale 1:25
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Trial Pit

CPT04

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.04 mOD
DB	0.00 - 1.50	16 Jun 22 - 16 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	CD	16 Jun 22	Width 0.60 m, Length 2.30 m	Depth	Remarks	Coordinates	E 555860.32
Approved											National Grid	N 224180.96
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
								(0.05)	+104.99		CONCRETE slab comprising 80% aggregate of angular to subangular fine to coarse flint and various crushed material and up to 1% small voids.			
16 Jun 22	0800 Dry							0.05 (0.25)			(MADE GROUND) Light brownish grey gravelly fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of concrete.			
								0.30 (0.05)	+104.74 +104.69		CONCRETE slab comprising 80% aggregate of angular to subangular fine to coarse flint and various crushed material and up to 1% small voids.			
								0.35 (1.15)			(MADE GROUND) Firm to stiff dark greyish brown slightly sandy gravelly CLAY with occasional fragments (up to 150x100x100mm) of brick. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and rare chalk. (Reworked LOWESTOFT FORMATION)	1.00 Black plastic mesh.		
16 Jun 22	1800 Dry							1.50	+103.54		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability
Shoring
Weather

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

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Trial Pit **CPT05**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.44 mOD
DB	0.00 - 1.50	21 Jun 22 - 21 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	21 Jun 22	Width 0.60 m Length 2.30 m C / B / D / A	Depth	Remarks	Coordinates	E 555855.52
Approved											National Grid	N 224124.39
DB											System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
									0						
									(0.07)						
									0.07	+104.37		(MADE GROUND) Compacted concrete and brick.			
									(0.23)						
									0.30	+104.14		(MADE GROUND) Greyish brown slightly clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subangular. fine to coarse of concrete, brick and flint.			
									(0.50)						
									0.80	+103.64		(MADE GROUND) Firm brownish grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of concrete, brick and flint.			
									(0.70)						
									1.50	+102.94		(MADE GROUND) Firm light brown mottled grey gravelly CLAY. Gravel is subangular to subrounded, fine to coarse of chalk and flint with orangish brown staining.			
21 Jun 22	0800	Dry													
21 Jun 22	1800	Dry													
												END OF EXPLORATORY HOLE			1.50
									1						
									2						
									3						
									4						
									5						

General Remarks

Stability Stable
Shoring None
Weather Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status FINAL

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Trial Pit **CPT06**

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.25 mOD
DB	0.00 - 1.50	22 Jun 22 - 22 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	22 Jun 22	Width 0.50 m Length 1.80 m C / B / D / A	Depth	Remarks	Coordinates	E 555911.75
Approved											National Grid	N 224157.14
DB											System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
									0.00						
22 Jun 22	0800	Dry							(0.30)			MACADAM.			
									0.30	+104.95		(MADE GROUND) Dark brown gravelly fine to coarse SAND with low cobble content. Gravel is angular to subangular, fine to coarse of concrete, macadam, brick and flint. Cobbles are of concrete.			
									(0.60)						
									0.90	+104.35		(MADE GROUND) Dark brownish grey mottled brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to medium of flint and chalk.			
22 Jun 22	1800	Dry							(0.60)				1.40 Becoming light brown mottled grey.		
									1.50	+103.75		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Status FINAL

Scale 1:25
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Trial Pit CPT07

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.33 mOD
DB	0.00 - 0.50	04 Jul 22 - 04 Jul 22	Concrete coring	Concrete corer	Labourers	BP	04 Jul 22	Width	Depth	Remarks	Coordinates	E 555977.03
Approved	0.50 - 1.50	04 Jul 22 - 04 Jul 22	Hand dug inspection pit assisted by vacuum excavation for CPT	Hand tools	Labourers	BP	04 Jul 22	Length			National Grid	N 224202.40
DB								C B D A			System	

Date	Time / Water	Samples: Depth	Type & No.	Records	Field Tests: Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description: Main	Detail	Water Entry	Backfill
								0.00						
04 Jul 22	0800 Dry							(0.50)			CONCRETE.			
		0.50	ES 1		0.50	PID	0.0 ppmv (Test 1)	0.50	+103.83		(MADE GROUND) Soft brown mottled grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular, fine to coarse of flint. (Possible reworked LOWESTOFT FORMATION)			
		1.00	ES 2		1.00	PID	0.0 ppmv (Test 2)	(1.00)						
04 Jul 22	1800 Dry													
		1.50	ES 3		1.50	PID	0.0 ppmv (Test 3)	1.50	+102.83		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status

FINAL

Scale 1:25

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Trial Pit

CPT08

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation
DB	0.00 - 0.50	29 Jun 22 - 29 Jun 22	Concrete coring	Concrete corer	Labourers	KG	29 Jun 22	Width
Approved	0.50 - 1.50	29 Jun 22 - 29 Jun 22	Hand dug inspection pit assisted by vacuum excavation for CPT	Hand tools	Labourers	KG	29 Jun 22	Length
DB								C B D A

Depth Related Remarks	
Depth	Remarks

Ground Level	104.25 mOD
Coordinates	E 556029.59
National Grid	N 224186.53
System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
									0.00						
29 Jun 22	0800	Dry							(0.42)			CONCRETE.			
									0.42	+103.83					
									(0.21)			(MADE GROUND) Type 1 aggregate.			
									0.63	+103.62					
									(0.87)			(MADE GROUND) Stiff light yellowish brown slightly gravelly CLAY. Gravel is rounded to subrounded, fine to medium of chalk and flint. (Reworked LOWESTOFT FORMATION)			
29 Jun 22	1800	Dry													
									1.50	+102.75		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

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Status

FINAL

Scale 1:25

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Trial Pit

CPT09

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	105.44 mOD
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit for CPT	Hand tools	Labourers	BP	29 Jun 22	Width 0.50 m Length 1.80 m C / B / D / A	Depth	Remarks	Coordinates	E 555981.65
Approved											National Grid	N 224098.01
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
								(0.10)			(TOPSOIL) Firm dark brown slightly gravelly silty CLAY. Gravel is subangular, fine to medium of flint and chalk with abundant rootlets.			
29 Jun 22	0800 Dry							0.10	+105.34		Firm dark brown mottled light grey slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk with black speckling and reddish brown staining. (LOWESTOFT FORMATION)	0.50 Becoming light brown mottled light grey with pockets (up to 30x40mm) of orangish brown sand.		
								(1.40)						
29 Jun 22	1800 Dry							1.50	+103.94		END OF EXPLORATORY HOLE			1.50

Hole continues on next sheet

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Carried out for Marriott Civils

Status FINAL

Scale 1:25
Printed 16 Dec 2022 15:34:51

AGS

Trial Pit CPT10

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.70 mOD
DB	0.00 - 1.50	21 Jun 22 - 21 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	21 Jun 22	Width 0.60 m Length 3.20 m C / B / D / A	Depth	Remarks	Coordinates	E 555918.04
Approved											National Grid	N 224123.76
DB											System	

Date	Time	Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
									0.00						
									(0.10)						
21 Jun 22	0800	Dry							0.10	+104.60		(MADE GROUND) Compacted ground brick, concrete, type 1 and bituminous material.			
									(0.25)			(MADE GROUND) Grey SAND and GRAVEL. Sand is medium to coarse. Gravel is subangular, fine to coarse of brick, concrete and bituminous material.			
									0.35	+104.35		Reinforced CONCRETE with 3mm rebar.			
									(0.40)						
									0.75	+103.95		(MADE GROUND) Light brown mottled grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded, fine to coarse of chalk, flint and occasional brick fragments.			
									(0.75)						
21 Jun 22	1800	Dry							1.50	+103.20		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability Stable
Shoring None
Weather Sunny

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Carried out for Marriott Civils

Status FINAL

Scale 1:25
Printed 16 Dec 2022 15:34:51

AGS

Trial Pit CPT11

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.78 mOD
DB	0.00 - 1.50	24 Jun 22 - 24 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	BP	24 Jun 22	Width 0.50 m, Length 1.80 m; C/B/D/A; 98 (Deg)	Depth	Remarks	Coordinates	E 555903.24
Approved											National Grid	N 224085.06
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
								0.00						
24 Jun 22	0800 Dry							(0.40)			(MADE GROUND) Grey angular medium to coarse GRAVEL of brick and concrete with high cobble content. Frequent roots and rootlets. Cobbles are of brick and concrete.			
								0.40	+104.38		(MADE GROUND) Firm dark grey and brown slightly gravelly CLAY. Gravel is angular to subangular, fine to medium of chalk and flint with frequent pockets of soft dark grey slightly organic clay. (Reworked LOWESTOFT FORMATION)			
24 Jun 22	1800 Dry							(1.10)						
								1.50	+103.28		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
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Carried out for Marriott Civils

Status FINAL

Scale 1:25
Printed 16 Dec 2022 15:34:51

AGS

Trial Pit CPT12

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.16 mOD
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	VJ	29 Jun 22	Width 0.80 m Length 1.50 m C / B / D / A	Depth	Remarks	Coordinates	E 555890.83
Approved											National Grid	N 224008.19
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
								(0.10)			(MADE GROUND)			
29 Jun 22	0800 Dry							0.10	+104.06		Grey angular to subangular fine to coarse GRAVEL of concrete and limestone over CONCRETE.			
								(0.10)			(MADE GROUND)			
								0.20	+103.96		Dark brown slightly gravelly fine to coarse SAND with low cobble content. Gravel is angular to subrounded, fine to coarse of flint, brick and concrete. Cobbles are angular of black macadam (100x100x80mm).			
								(0.10)			(MADE GROUND)			
								0.30	+103.86		Soft pinkish brown slightly gravelly clayey fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of flint, brick and concrete.			
								(0.50)			(MADE GROUND)			
											Soft to firm mottled light grey and brown slightly gravelly CLAY with low cobble content. Gravel is angular to subrounded, fine to coarse of flint, chalk, brick and concrete. Cobbles are angular of brick (120x100x80mm).			
								0.80	+103.36		Firm mottled dark grey and brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subrounded, fine to coarse of flint and chalk. Cobbles are angular to subrounded of chalk and flint (150x100x100mm). (LOWESTOFT FORMATION)			
								(0.70)						
29 Jun 22	1800 Dry													
								1.50	+102.66		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
Printed 16 Dec 2022 15:34:52

AGS

Trial Pit CPT13

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation	Depth Related Remarks		Ground Level	104.13 mOD
DB	0.00 - 1.50	29 Jun 22 - 29 Jun 22	Machine dug inspection pit for CPT	JCB 3CX	Labourers	VJ	29 Jun 22	Width 0.80 m Length 1.80 m C / B / D / A	Depth	Remarks	Coordinates	E 555859.38
Approved											National Grid	N 224036.78
DB											System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
								(0.10)			(MADE GROUND) Grass over dark brown slightly gravelly fine to coarse SAND with frequent rootlets. Gravel is angular to subrounded, fine to coarse of flint and chalk.			
29 Jun 22	0800 Dry							0.10 (0.10)	+104.03		(MADE GROUND) Soft dark brown slightly gravelly CLAY. Gravel is angular to subrounded, fine to coarse of flint, chalk and brick. (Reworked LOWESTOFT FORMATION)			
								0.20 (0.60)	+103.93		(MADE GROUND) Firm light grey mottled greenish brown slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of brick, concrete, flint and chalk. Cobbles are angular of brick (150x100x100mm). (Reworked LOWESTOFT FORMATION)			
								0.80 (0.30)	+103.33		(MADE GROUND) Firm greenish brown mottled grey slightly sandy slightly gravelly CLAY with low cobble content. Sand is fine. Gravel is angular to subrounded, fine to coarse of chalk, flint and brick. Cobbles are angular of brick (up to 120x100x100mm). (Reworked LOWESTOFT FORMATION)			
29 Jun 22	1800 Dry							1.10 (0.40)	+103.03		Firm greenish brown mottled grey slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is angular to subrounded, fine to coarse of flint and chalk. (LOWESTOFT FORMATION)			
								1.50	+102.63		END OF EXPLORATORY HOLE			1.50

General Remarks

Stability Stable
Shoring None
Weather

Groundwater Entries
No. Depth Remarks Sealed

Notes
For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Status FINAL

Scale 1:25
Printed 16 Dec 2022 15:34:52

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Trial Pit CPT14

Trial Pit Log

SOCOTEC

Checked	Depth	Dates	Method	Equipment	Crew	Logger	Logged	Dimensions and Orientation
DB	0.00 - 0.50	01 Jul 22 - 01 Jul 22	Concrete coring	Concrete corer	Labourers	VJ	01 Jul 22	Width
Approved	0.50 - 1.50	01 Jul 22 - 01 Jul 22	Hand dug inspection pit assisted by vacuum excavation for CPT	Hand tools	Labourers	VJ	01 Jul 22	Length
DB								C B D A

Depth Related Remarks	
Depth	Remarks

Ground Level	104.22 mOD
Coordinates	E 555834.94
National Grid	N 224061.34
System	

Date	Time / Water	Samples Depth	Type & No.	Records	Field Tests Depth	Type	Records	Depth (Thickness)	Level	Legend	Strata Description Main	Detail	Water Entry	Backfill
01 Jul 22	0800 Dry							(0.57)			Extremely strong light grey CONCRETE.			
								0.57	+103.65		(MADE GROUND) Brownish grey slightly gravelly silty fine to coarse SAND. Gravel is angular to subrounded, fine to coarse of flint and concrete.			
								(0.43)						
								1.00	+103.22		(MADE GROUND) Soft mottled grey and brown slightly sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded, fine to coarse of chalk, flint, concrete and brick. (Reworked LOWESTOFT FORMATION)			
01 Jul 22	1800 Dry							(0.50)						
								1.50	+102.72		END OF EXPLORATORY HOLE			1.50

0 1 2 3 4 5

General Remarks

Stability	Stable
Shoring	None
Weather	Sunny

Groundwater Entries

No.	Depth	Remarks	Sealed

Notes

For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column.

Project	Stansted Terminal 2 (ST2) Ground Investigation
Project No.	D2027-22
Carried out for	Marriott Civils

Status FINAL

Scale 1:25

Printed 16 Dec 2022 15:34:52

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Trial Pit **CPT15**

Sample Description & Split Describe

Hole Number:	**CP03**	**Top Depth (m):**	**1.60**
Sample Number:	**13**	**Base Depth (m):**	**2.05**
Sample Type:	**UT**	**Sample Date:**	

Sample Description:

1.60-1.75- Disturbed sample- Very stiff brown very gravelly sandy CLAY. Gravel is FMC sub-rounded, mostly chalk.

1.75-1.86- Very stiff brown very gravelly sandy CLAY. Gravel is FMC sub-rounded, mostly chalk. Consolidation test taken from this section.

1.86-2.05- Disturbed sample- Very stiff brown very gravelly sandy CLAY. Gravel is FMC sub-rounded, mostly chalk.

PSL PROFESSIONAL SOILS LABORATORY

Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:**
	PSL22/5219
	Client Ref:
	D2027-22

Sample Description & Split Describe

Hole Number:	**CP06**	**Top Depth (m):**	**2.50**
Sample Number:	**16**	**Base Depth (m):**	**2.95**
Sample Type:	**UT**	**Sample Date:**	

Sample Description:

2.50-2.66m - Firm to stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is sub-rounded, mostly chalk.

2.66-2.67m - Break in sample

2.67-2.80m - Soft to firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is sub-rounded, mostly chalk.

Sample Description & Split Describe

Hole Number:	**CP08**	**Top Depth (m):**	**2.50**
Sample Number:	**14**	**Base Depth (m):**	**2.95**
Sample Type:	**UT**	**Sample Date:**	

Sample Description:

2.50-2.61 - Firm grey mottled brown gravelly sandy CLAY. Gravel is FM sub-angular to sub rounded, gravel is chalk.

2.61-2.85 - Stiff grey mottled brown gravelly sandy CLAY. Gravel is FM sub-angular to sub rounded, gravel is chalk.

Sample Description & Split Describe

Hole Number:	**CP09**	**Top Depth (m):**	**2.50**
Sample Number:	**15**	**Base Depth (m):**	**2.95**
Sample Type:	**UT**	**Sample Date:**	

Sample Description:

2.50-2.55- Stiff brown gravelly slightly sandy CLAY. Gravel is FM sub-rounded.

2.55-2.63- Piece of course sub-rounded GRAVEL.

2.63-2.85-Stiff brown gravelly slightly sandy CLAY. Gravel is FMC sub-angular to sub-rounded.

PSL
PROFESSIONAL SOILS LABORATORY

Stansted Terminal 2 (ST2) - Ground Investigation.	**Contract No:**
	PSL22/5490
	Client Ref:
	D2027-22

Split Core Sample Description

Borehole No	RC01		
Sample No	124		
Sample Depth, mBGL	14.00	-	14.22
Sample Type	C		

Logged by	NH
Date	15-Aug-22

Sample Description

14.00m to 14.22m
Stiff to very stiff grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of white chalk and flint.
(LOWESTOFT FORMATION)

Remarks:

Sample Condition:
Good

Checked by	DB
Approved by	

Notes:	Project: Stansted Terminal 2 (ST2) – Ground Investigation Project No.: D2027-22 Carried out for: Marriott Civils	Figure **RC01, C124**

Split Core Sample Description

SOCOTEC

Borehole No	RC01		
Sample No	134		
Sample Depth, mBGL	20.25	-	20.56
Sample Type	C		

Logged by	NH
Date	15-Aug-22

Sample Description

20.25 to 20.56m
Very stiff grey gravelly CLAY. Gravel is subrounded fine to medium of white chalk, flint and possible orange ironstone. (LOWESTOFT FORMATION)

Depth detail @ 20.48m to 20.54m
1no subrounded coarse gravel of flint and 1no subangular coarse gravel of moderately weak grey fine grained possible limestone.

Remarks:

Sample Condition:
Good

Checked by	DB
Approved by	

Notes:	Project: Stansted Terminal 2 (ST2) – Ground Investigation Project No.: D2027-22 Carried out for: Marriott Civils	Figure: RC01, C134

APPENDIX C
FIELD TESTING

Key to Cone Penetration Test Records	CPT Key
CPT Cone Calibration Certificates	S10-CFIIP.1681 and S10-CFIIP.2033
Summary of Cone Penetration Tests	Table C1
CPT Logs	CPT01 to CPT15
SCPT Results	SCPT01 to SCPT07, SCPT12
Incremental Plate Loading Test	Report No. UXB0549912 (TP06, TP07), UXB0549914 (TP01, TP04, TP05), UXB0551213 (TP13, TP14)
Dynamic Cone Penetrometer Test	TP01 DCP, TP04 DCP to TP07 DCP, TP13 DCP, TP14 DCP

Key to Cone Penetration Test Records

SOCOTEC

Parameter	Unit	Description	Equation
Measured parameters			
q_c	MPa	Cone resistance	Measured parameter
f_s	MPa	Sleeve friction	Measured parameter
I	degrees	Inclination	Measured parameter
u	MPa	Dynamic pore pressure (Piezocone only)	Measured parameter. Denoted as u_1 and u_2 for pore pressure filter locations on cone face and cone shoulder respectively.
-	m, s	Penetration depth and corresponding time	Measured parameters
Derived cone parameters			
R_f	%	Friction ratio	f_s / q_c . 100 %
q_t	MPa	Corrected cone resistance (Piezocone only)	$q_c + (1 - a)$. u_2 where a = area ratio of cone = A_n/A_c; A_n = cross sectional areas of cone tip shaft; A_c = projected area of cone tip
f_t	MPa	Corrected sleeve friction (Piezocone only)	$(f_s – (u_2 . A_{sb} – u_3 . A_{st})) / A_s$ where b = area ratio of friction sleeve; A_{sb} and A_{st} are bottom and top cross sectional areas of friction sleeve
q_e	MPa	Effective cone resistance (Piezocone only)	$q_t – u_2$
q_n	MPa	Net cone resistance (Piezocone or using $q_t = q_c$)	$q_t - \sigma_{vo}$ where σ_{vo} = vertical total stress
R_t'	%	Corrected friction ratio (Piezocone only)	f_t / q_t . 100 %
Δu	MPa	Excess pore pressure (Piezocone only)	$u - u_0$ where u_0 = equilibrium pore water pressure
B_q	-	Pore pressure ratio (Piezocone only)	$(u - u_0) / (q_t - \sigma_{vo}) = \Delta u/q_n$
-	-	Dynamic pore pressure ratio (Piezocone only)	u / q_c
Q_t	-	Normalised cone resistance (Piezocone or using $q_t = q_c$)	$(q_t - \sigma_{vo}) / \sigma'_{vo} = q_n / \sigma'_{vo}$ where σ'_{vo} = vertical effective stress
F_r	%	Normalised local friction (Piezocone or using $q_t = q_c$)	$f_s / (q_t - \sigma_{vo}) = f_s / q_n$. 100 %

Notes:

Figure
CPT Key

Key to Cone Penetration Test Records

SOCOTEC

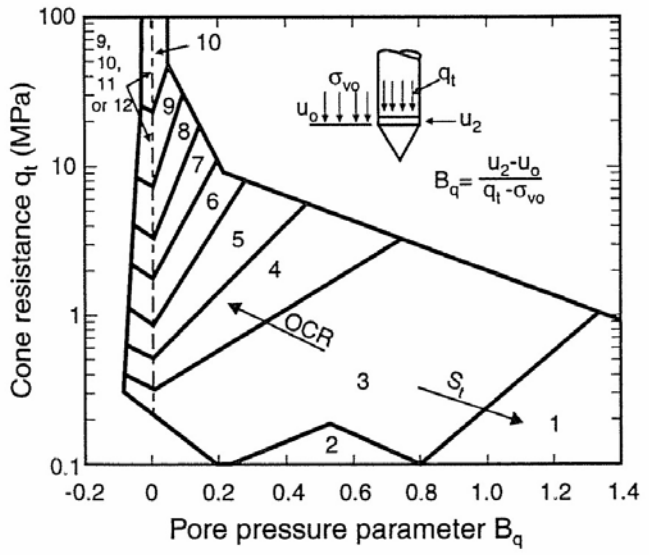
Derived soil parameters		
Parameter	Description	Remarks
S_u	Undrained Shear Strength (Clays)	Interpretation for fine soils only – soil types 3 and 4. Based on net cone resistance (corrected where pore pressure data available) and empirical cone factor $= (q_c - \sigma_{vo}) / N_k$ Plot presented using N_k of 17.
D_r RD	Relative Density	Interpretation for coarse soils only – soil types 5, 6 and 7. After Kulhawy and Mayne (1990) $= (q_t / (305*0.55*OCR^{0.18}*(1.2+0.05*\log(t/100))))^{0.5}$
ϕ IFA	Internal Friction Angle	Interpretation for coarse soils only – soil types 5, 6 and 7. After Robertson and Campanella (1983) for uncemented, moderately incompressible, predominately silica sands $= \text{Arctan}(0.105 + 0.16 . \text{Ln}(q_c / \sigma'_{vo}))$
N_{60}	Equivalent Standard Penetration Test (SPT) N value	$= (q_c / p_a) / 8.5 . (1 - I_c / 4.6))$ p_a – reference stress of 100 kPa

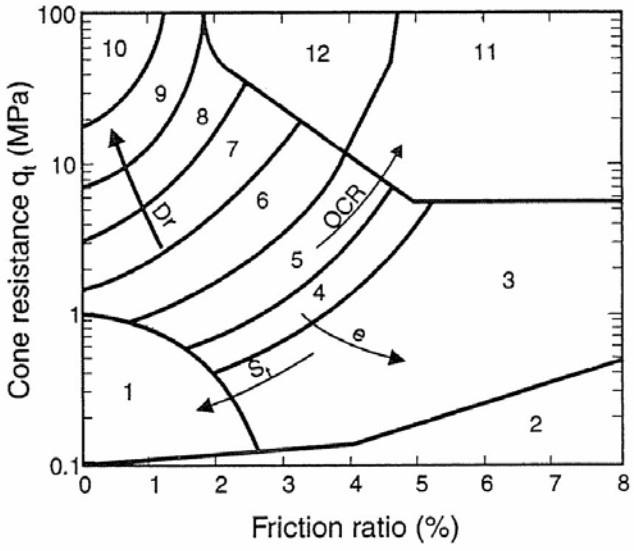
Soil Description			
Soil Type	Classification after Robertson (1990) using normalised cone resistance, normalised friction ratio and pore pressure ratio.		
Undrained shear strength description	Material description for fine soils presented using Method 1. $= (q_c - \sigma_{vo}) / N_k$	Descriptive term	Strength, kPa
		Extremely Low Strength Very Low Strength Low Strength Medium Strength High Strength Very High Strength	<10 10 to 20 20 to 40 40 to 75 75 to 150 >150
Relative density description	Material description for coarse soils presented using Method 3. Kulhawy and Mayne (1990)	Descriptive term	Relative Density, %
		Very Loose Loose Medium Dense Dense Very Dense	<15 15 to 35 35 to 65 65 to 85 >85

Notes:

Figure
CPT Key

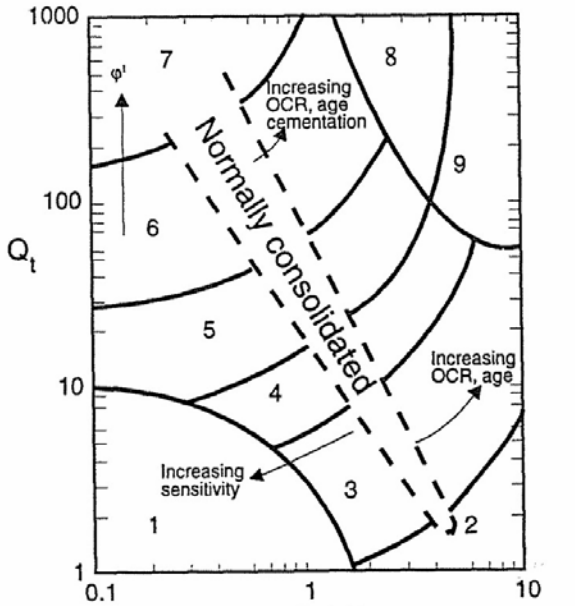
Key to Cone Penetration Test Records



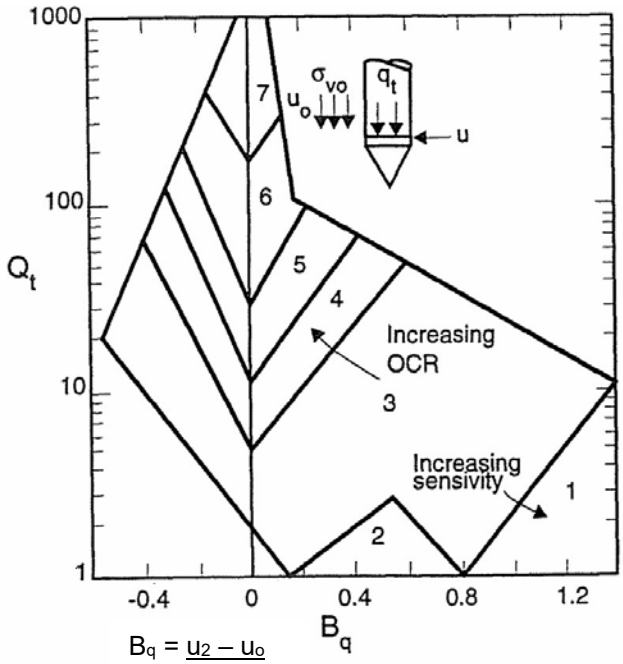


KEY TO SOIL BEHAVIOUR TYPES - after Robertson et al (1986)

ZONE	SOIL BEHAVIOUR TYPE	ZONE	SOIL BEHAVIOUR TYPE	ZONE	SOIL BEHAVIOUR TYPE
1	Sensitive fine grained	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*



$Q_t = \frac{q_t - \sigma_{vo}}{\sigma'_{vo}}$ $F_r = \frac{f_s \times 100\%}{q_t - \sigma_{vo}}$



$B_q = \frac{u_2 - u_o}{q_t - \sigma_{vo}}$

KEY TO SOIL BEHAVIOUR TYPES – after Robertson (1990)

ZONE	SOIL BEHAVIOUR TYPE	ZONE	SOIL BEHAVIOUR TYPE	ZONE	SOIL BEHAVIOUR TYPE
1	Sensitive fine grained	4	Silt mixtures: clayey silt to silty clay	7	Gravelly sand to sand
2	Organic soils – peats	5	Sand mixtures: silty sand to sandy silt	8	Very stiff sand to clayey sand
3	Clays: clay to silty clay	6	Sands: clean sand to silty sand	9	Very stiff fine grained

Notes:

Figure
CPT Key

Certificate Number: S10-CFIIP.1681-04.02.2022

CPT CONE CALIBRATION CERTIFICATE

SOCOTEC

Cone No.	S10-CFIIP.1681	Date of Calibration	04.02.2022
Manufacturer	Geopoint	Reference Standards	BS 1377 : 1990 Part 9
Compression/ Subtraction	Subtraction	Reference Equipment	Pressure meter: LTR01
			Vernier callipers: GVC4
Pore Pressure Channel (Y/N)	Y		Load cell: 22541
			Voltmeter: 6402486

Cone end area ratio (by dimension measurement), a	0.85	Sleeve end area ratio (by dimension measurement), b	1.0

Expanded Combined Uncertainty (U) C1	32.0618 mV	Expanded Combined Uncertainty (U) C2	32.2176 mV	Expanded Combined Uncertainty (U) C3	250.059 mV

Note: Calibration Zero taken as no load in free air, Output taken as slope of linear regression line x maximum load.

Temperature differential during calibration: 0 °C

Cone Type (S/ C/ M/ D/ T): S

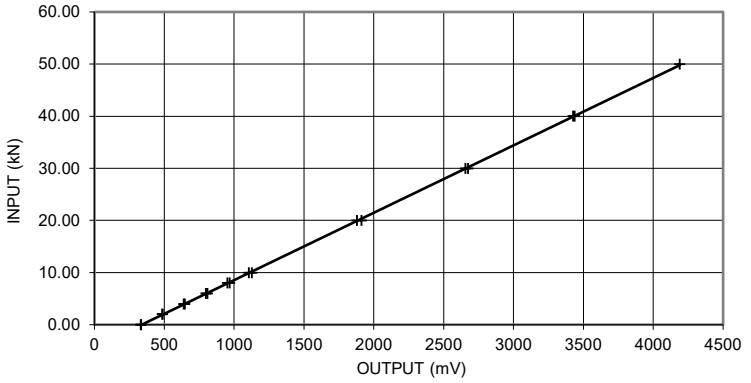
Ch 3 (P/ C/ T/ N/ F): P

	Output	Input	Zero	Area	Alarm
Channel 1	3868 mV	50 kN	230 mV	10 cm^2	45 kN
Channel 2	3890 mV	50 kN	279 mV	150 cm^2	45 kN
Channel 3	7171 mV	20 Bar	197 mV		15 Bar

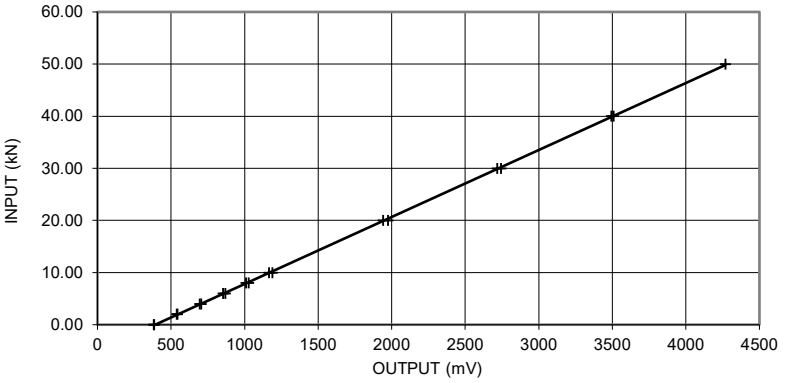
Inclination	-20°	0°	20°	Alarm
X	460 mV	2499 mV	4509 mV	15 °
Y	465 mV	2538 mV	4583 mV	Extra Channels: N

UKAS TESTING

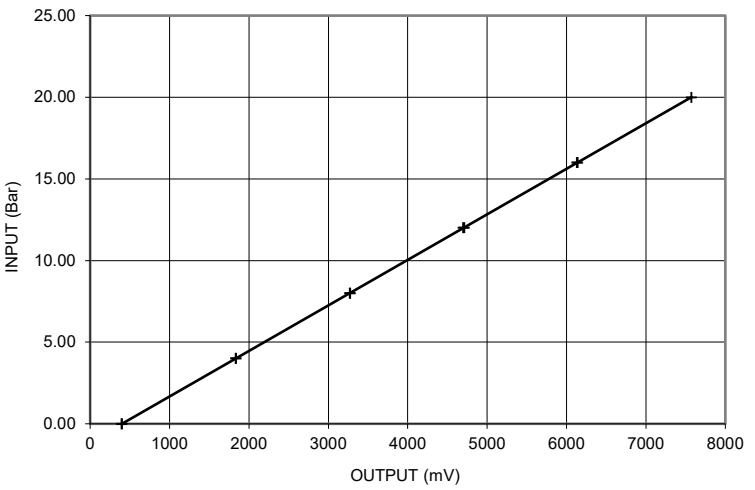
CHANNEL 1 - TIP



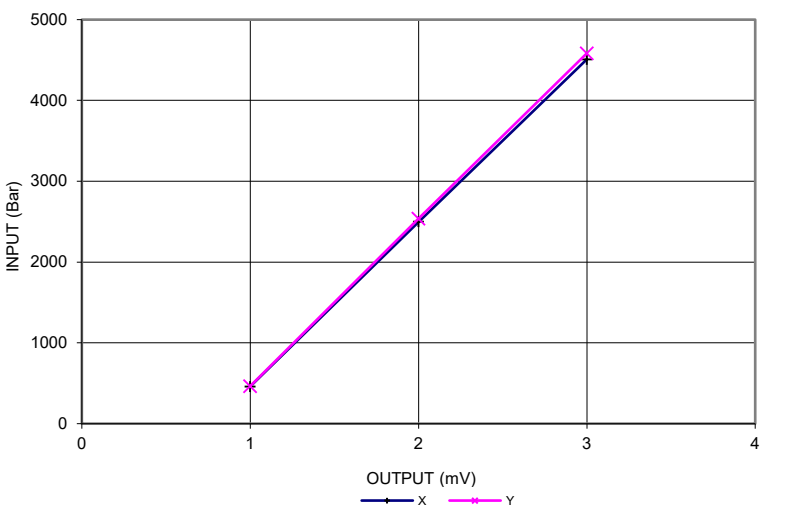
CHANNEL 2 - FRICTION SLEEVE



CHANNEL 3 - PORE PRESSURE



CHANNEL 4 - INCLINATION



Calibration Manual		Cone calibrated by:	Authorised for use by:
Calibration Sheet No:	NNN-CP201	HDB	[redacted]
Issue Number:	2020-11		(In Situ Testing Manager)
Issue Date:	04/05/2021		
Calibration Procedure:	CP201		

This certificate relates to the item calibrated only

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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Cone Calibration Certificate

Certificate:	**GS-2033-002**	
Instrument Type:	Electric Subtraction Cone	
Model:	S10-CFIIP 100 kN	
Serial number:	2033	
Calibration date:	21-03-2022	
Client:	Socotec	
Calibrated by:	M.de Bruin	
Calibration instruments		
Manufacturer:	Hottinger Baldwin Messtechnik GmbH	
NMi certificate	2461165.00501	
Calibration conditions		
Ambient temperature:	20.2	°C
Atmospheric pressure:	1033	mBar
Cone specifications		
Cone base area:	1000	mm2
Load tip resistance (nom.):	100	kN
Friction sleeve area:	15000	mm2
Load tip + local friction (nom.):	100	kN
Load friction sleeve (nom.):	15	kN
Load pore pressure (nom.):	2	MPa
Inclination (nom.):	+/- 20	°
Temperature compensation (all channels):	0...+40	°C
Maximum overload capacity (all channels):	50	%
Cone area ratio (a):	0.8	
Max. Inaccuracy, relative to measurement value:	1.0	%

	Tip:		Sleeve:		Pore Pressure:		Inclinometer:		
	qc in kN	mV	fs in kN	mV	MPa	mV	Degrees	X (mV)	Y (mV)
Zero points:		0268		0237		0228			
	0	0	0	0	0	0	0	2503	2603
	5	0312	5	0367	0.4	1583	-20	0518	0579
	10	0623	10	0735	0.8	3163	20	4537	4629
	15	0933	15	1100	1.2	4733			
	20	1245	20	1468	1.6	6297			
	25	1555	25	1834	2	7846			
	30	1866	30	2202					
	35	2175	35	2567					
	40	2485	40	2934					
	45	2794	45	3301					
	50	3105	50	3666					
	75	4651	75	5498					
	100	6194	100	7323					

Max. eror, abs. qc:	35 kPa
Max. error, abs. fs:	2 kPa
Max. error, abs. u2:	10 kPa
Max. error, abs. I:	1 °

This calibration is compliant with Eijkelkamp GeoPoint SoilSolutions internal quality system, internal calibration procedures and meets the requirements of NEN2649, NEN-EN-ISO 22476-1, NORSOK G-001, ISSMFE and ASTM using calibration equipment traceable to (Inter-)National Standards.

Approved by: B[redacted]
Date: 2

Summary of Cone Penetration Tests

SOCOTEC

CPT ID	Hole Depth, (m)	Start Date	Eastings, (m)	Northings, (m)	Ground Level, (m AOD)	Remarks	No. of Sheets
CPT01	12.01	20/06/2022	555679.51	224332.95	105.05	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT01, coordinates for centre of pit.	2
CPT02	13.97	20/06/2022	555735.69	224304.15	106.03	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT02, coordinates for centre of pit.	2
CPT03	14.12	20/06/2022	555771.25	224255.07	106.19	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT03, coordinates for centre of pit.	2
CPT04	16.92	21/06/2022	555824.02	224216.22	105.24	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT04, coordinates for centre of pit.	2
CPT05	0.21	21/06/2022	555860.32	224180.96	105.04	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Terminated due to refusal. Cordinates for centre of inspection pit.	1
CPT05.1	12.52	21/06/2022	555860.32	224180.96	105.04	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to sudden inclination. Test carried out at opposite end of 1m long inspection pit from SCPT05, coordinates for centre of pit.	2
CPT06	0.21	21/06/2022	555855.52	224124.39	104.44	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to sudden inclination. Cordinates for centre of inspection pit.	1
CPT06.1	0.89	21/06/2022	555855.52	224124.39	104.44	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to sudden inclination. Cordinates for centre of inspection pit.	1
CPT06.2	18.20	21/06/2022	555855.52	224124.39	104.44	Carried out using 10cm2 cone S10-CFIIP.2033. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT06, coordinates for centre of pit.	2
CPT07	0.80	30/06/2022	555911.75	224157.14	105.25	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to sudden inclination. Test carried out at opposite end of 1m long inspection pit from SCPT07, coordinates for centre of pit.	1
CPT08	13.34	05/07/2022	555977.03	224202.4	104.33	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Cordinates for centre of inspection pit.	2
CPT09	14.27	05/07/2022	556029.59	224186.53	104.25	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to sudden inclination. Cordinates for centre of inspection pit.	2
CPT10	16.50	01/07/2022	555981.65	224098.01	105.44	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Cordinates for centre of inspection pit.	2
CPT11	8.88	30/06/2022	555918.04	224123.76	104.7	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Cordinates for centre of inspection pit.	1
CPT12	9.90	30/06/2022	555903.24	224085.06	104.78	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from SCPT012, coordinates for centre of pit.	2
CPT13	14.62	06/07/2022	555890.83	224008.19	104.16	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Cordinates for centre of inspection pit.	2
CPT14	4.73	06/07/2022	555859.38	224036.78	104.13	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to sudden inclination.Cordinates for centre of inspection pit.	1
CPT15	17.24	05/07/2022	555834.94	224061.34	104.22	Carried out using 10cm2 cone S10-CFIIP.1680. Terminated due to refusal. Cordinates for centre of inspection pit.	2

Summary of Cone Penetration Tests

SOCOTEC

CPT ID	Hole Depth, (m)	Start Date	Eastings, (m)	Northings, (m)	Ground Level, (m AOD)	Remarks	No. of Sheets
SCPT01	11.67	28/06/2022	555679.51	224332.95	105.05	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT01, coordinates for centre of pit.	7
SCPT02	12.71	28/06/2022	555735.69	224304.15	106.03	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT02, coordinates for centre of pit.	7
SCPT03	14.22	23/06/2022	555771.25	224255.07	106.19	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT03, coordinates for centre of pit.	8
SCPT04	14.00	22-23/06/2022	555824.02	224216.22	105.24	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT04, coordinates for centre of pit.	8
SCPT05	15.50	22/06/2022	555860.32	224180.96	105.04	Carried out using seismic CPT cone. Terminated due to scheduled depth achived. Test carried out at opposite end of 1m long inspection pit from CPT05, coordinates for centre of pit.	8
SCPT06	15.50	21-22/06/2022	555855.52	224124.39	104.44	Carried out using seismic CPT cone. Terminated due to scheduled depth achived. Test carried out at opposite end of 1m long inspection pit from CPT06, coordinates for centre of pit.	8
SCPT07	2.03	23/06/2022	555911.75	224157.14	105.25	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT07, coordinates for centre of pit.	3
SCPT12	13.02	29/06/2022	555903.24	224085.06	104.78	Carried out using seismic CPT cone. Terminated due to refusal. Test carried out at opposite end of 1m long inspection pit from CPT12, coordinates for centre of pit.	8

Notes (unless indicated otherwise above)

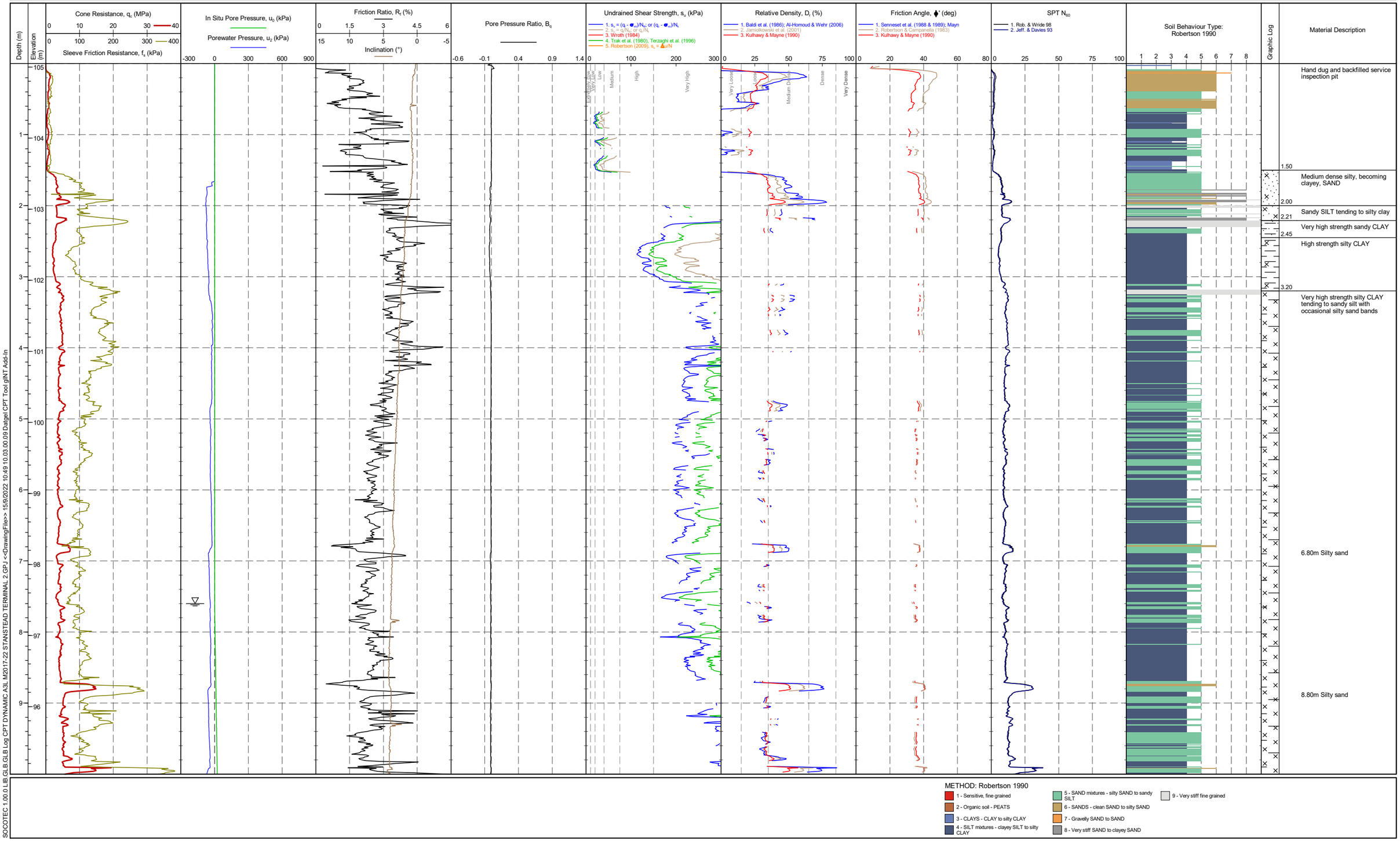
- Piezocones fitted with polypropylene pore pressure filter located in the shoulder (U2) position
- Tests carried out with a 10 cm2 cone and a friction reducer
- No backfilling of CPT holes
- Groundwater/collapse depths not recorded

CPT LOG

SOCOTEC

PointID
CPT01

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555679.5 m NORTHING : 224333.0 m COORD. SYS. : OSGB ELEVATION : 105.05 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT01, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 20/6/2022

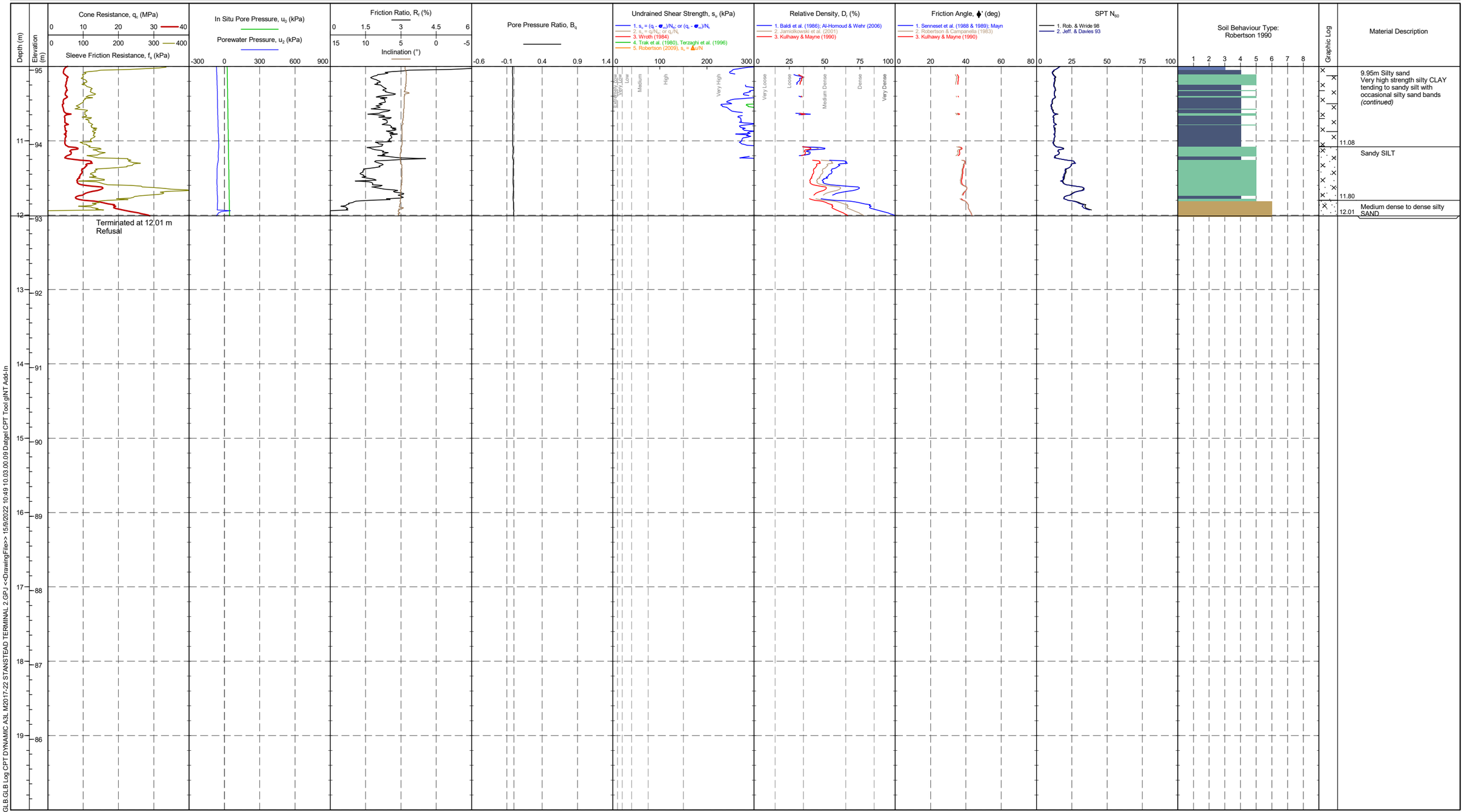


SOCOTEC

CPT LOG

PointID **CPT01**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555679.5 m NORTHING : 224333.0 m COORD. SYS. : OSGB ELEVATION : 105.05 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT01, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 20/6/2022



METHOD: Robertson 1990

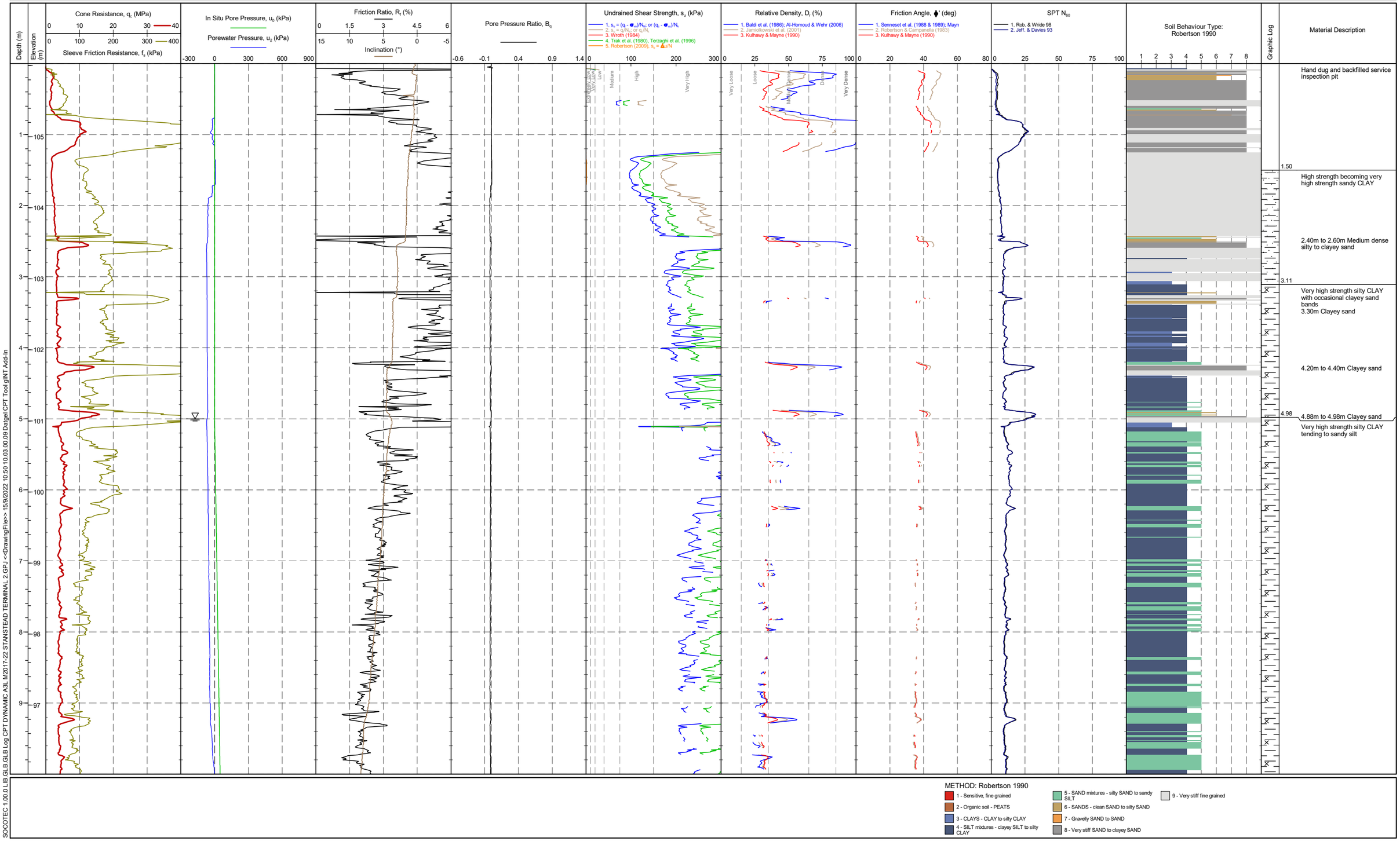
- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

SOCOTEC

CPT LOG

PointID **CPT02**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555735.7 m NORTHING : 224304.2 m COORD. SYS. : OSGB ELEVATION : 106.03 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT02, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 20/6/2022



CPT LOG

SOCOTEC

PointID **CPT02**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555735.7 m NORTHING : 224304.2 m COORD. SYS. : OSGB ELEVATION : 106.03 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT02, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 20/6/2022

Depth (m) | Elevation (m)

Cone Resistance, q_c (MPa): 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa): 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa): -300 0 300 600 900

Friction Ratio, R_f (%): 0 1.5 3 4.5 6
Inclination (°): 15 10 5 0 -5

Pore Pressure Ratio, B_q: -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa): 0 100 200 300
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q/N_k$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = q_t/N$
Extremely Low | Very Low | Low | Medium | High | Very High

Relative Density, D, (%): 0 25 50 75 100
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
Very Loose | Loose | Medium Dense | Dense | Very Dense

Friction Angle, ϕ' (deg): 0 20 40 60 80
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)

SPT N_{60}: 0 25 50 75 100
1. Rob. & Wride 98
2. Jeff. & Davies 93

Soil Behaviour Type: Robertson 1990: 1 2 3 4 5 6 7 8

Graphic Log

Material Description

Very high strength silty CLAY tending to sandy silt *(continued)*

13.28

Medium dense silty SAND

13.97

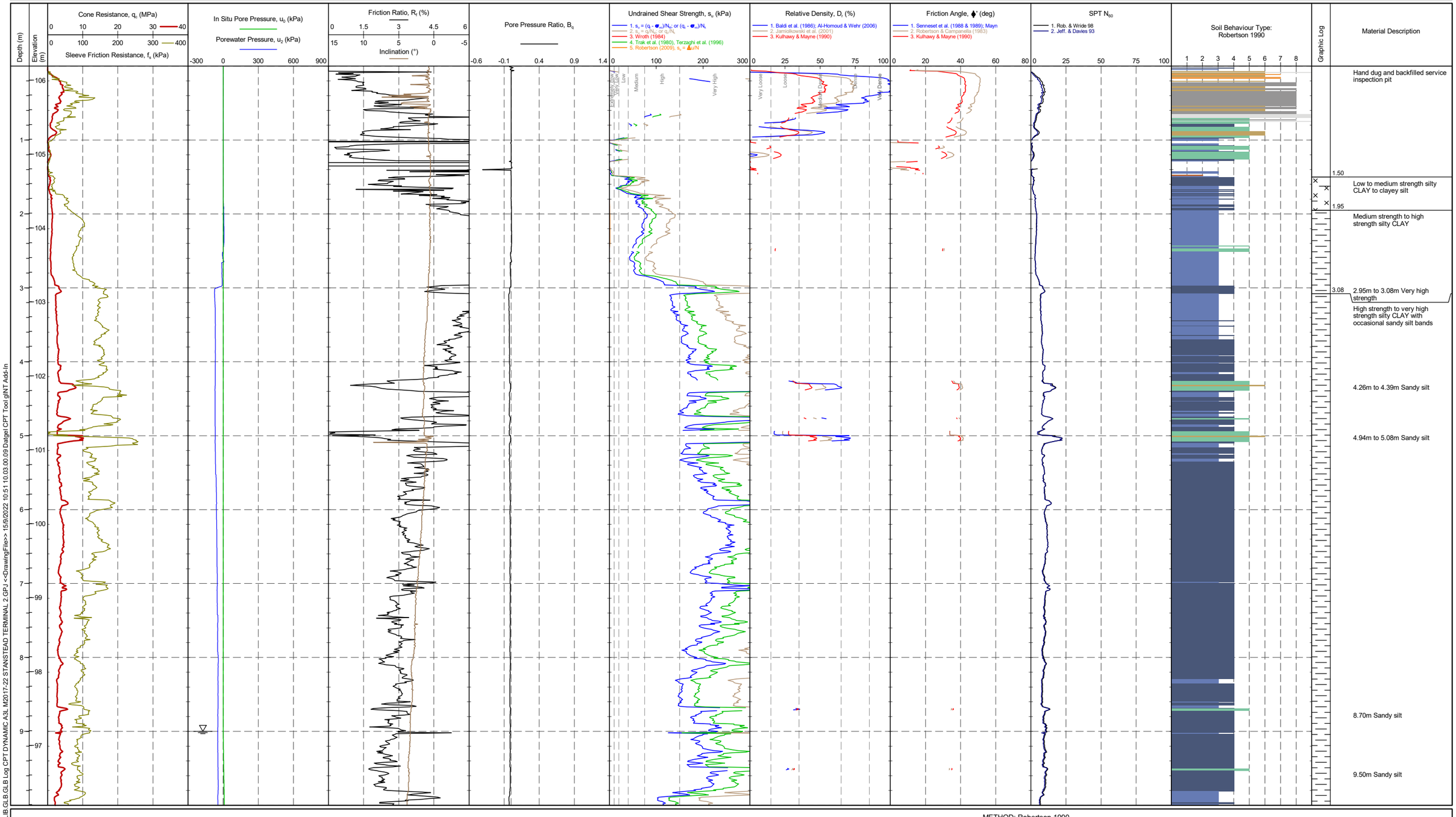
Terminated at 13.97 m
Refusal

METHOD: Robertson 1990
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

CPT LOG

PointID **CPT03**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555771.3 m NORTHING : 224255.1 m COORD. SYS. : OSGB ELEVATION : 106.19 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT03, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 20/6/2022



SOCOTEC

CPT LOG

PointID **CPT03**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555771.3 m NORTHING : 224255.1 m COORD. SYS. : OSGB ELEVATION : 106.19 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT03, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 20/6/2022

Depth (m) / Elevation (m)

Cone Resistance, q_c (MPa) 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa) 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa)
-300 0 300 600 900

Friction Ratio, R_f (%) 0 1.5 3 4.5 6
Inclination (°) 15 10 5 0 -5

Pore Pressure Ratio, B_q -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa)
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q_t/N_k)$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = \Delta u/N$
0 100 200 300
Extremely High, Very High, High, Medium, Low, Very Low

Relative Density, D, (%)
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
0 25 50 75 100
Very Loose, Loose, Medium Dense, Dense, Very Dense

Friction Angle, ϕ' (deg)
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)
0 20 40 60 80

SPT N_{60}
1. Rob. & Wride 98
2. Jeff. & Davies 93
0 25 50 75 100

Soil Behaviour Type: Robertson 1990
1 2 3 4 5 6 7 8

Graphic Log

Material Description

96 — High strength to very high strength silty CLAY with occasional sandy silt bands *(continued)*

11.40m to 11.60m Occasionally sandy silt

12.03m to 12.15m Sandy silt

13.38 — Medium dense silty SAND

14.12

Terminated at 14.12 m
Refusal

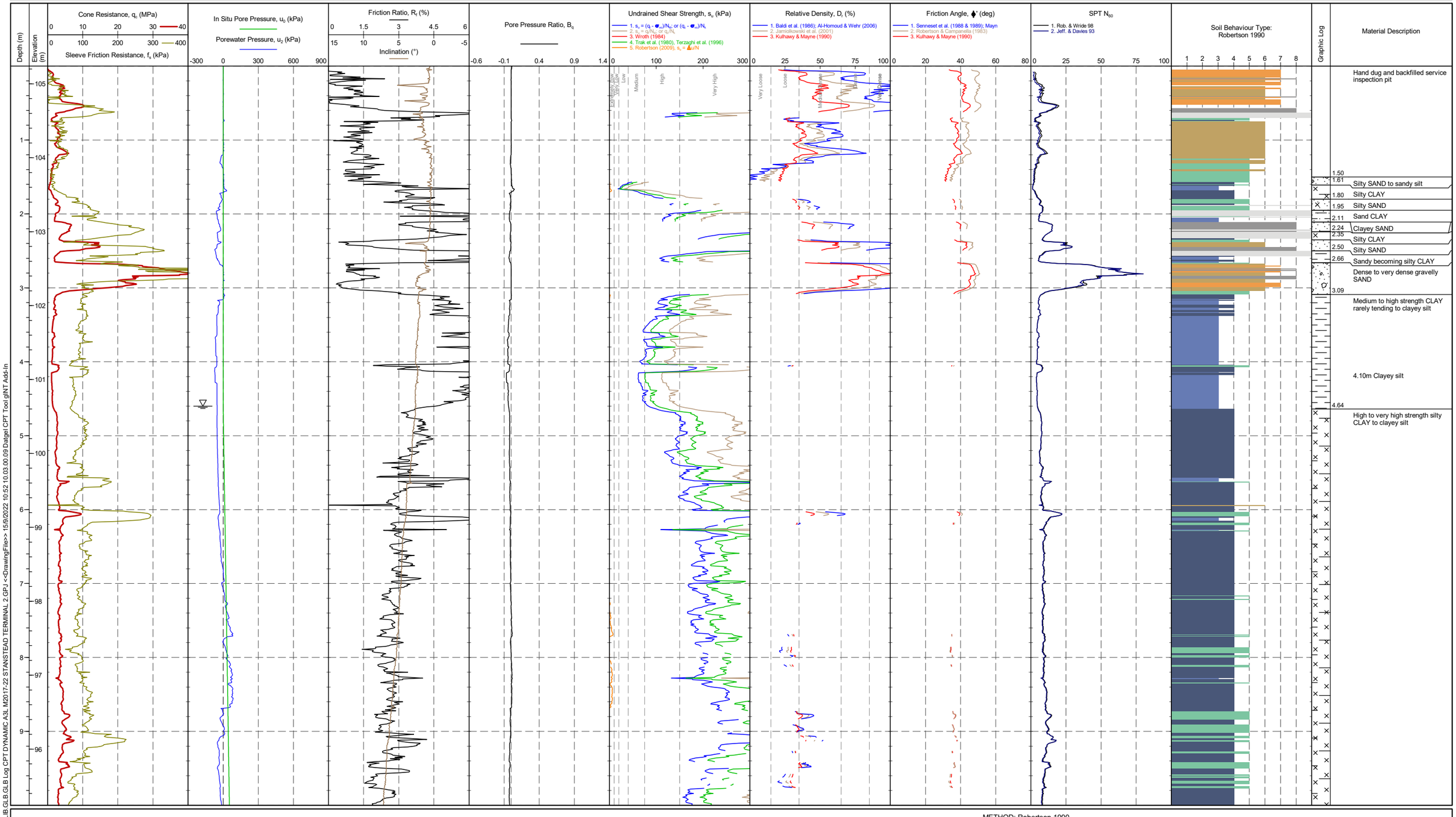
METHOD: Robertson 1990
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

CPT LOG

SOCOTEC

PointID
CPT04

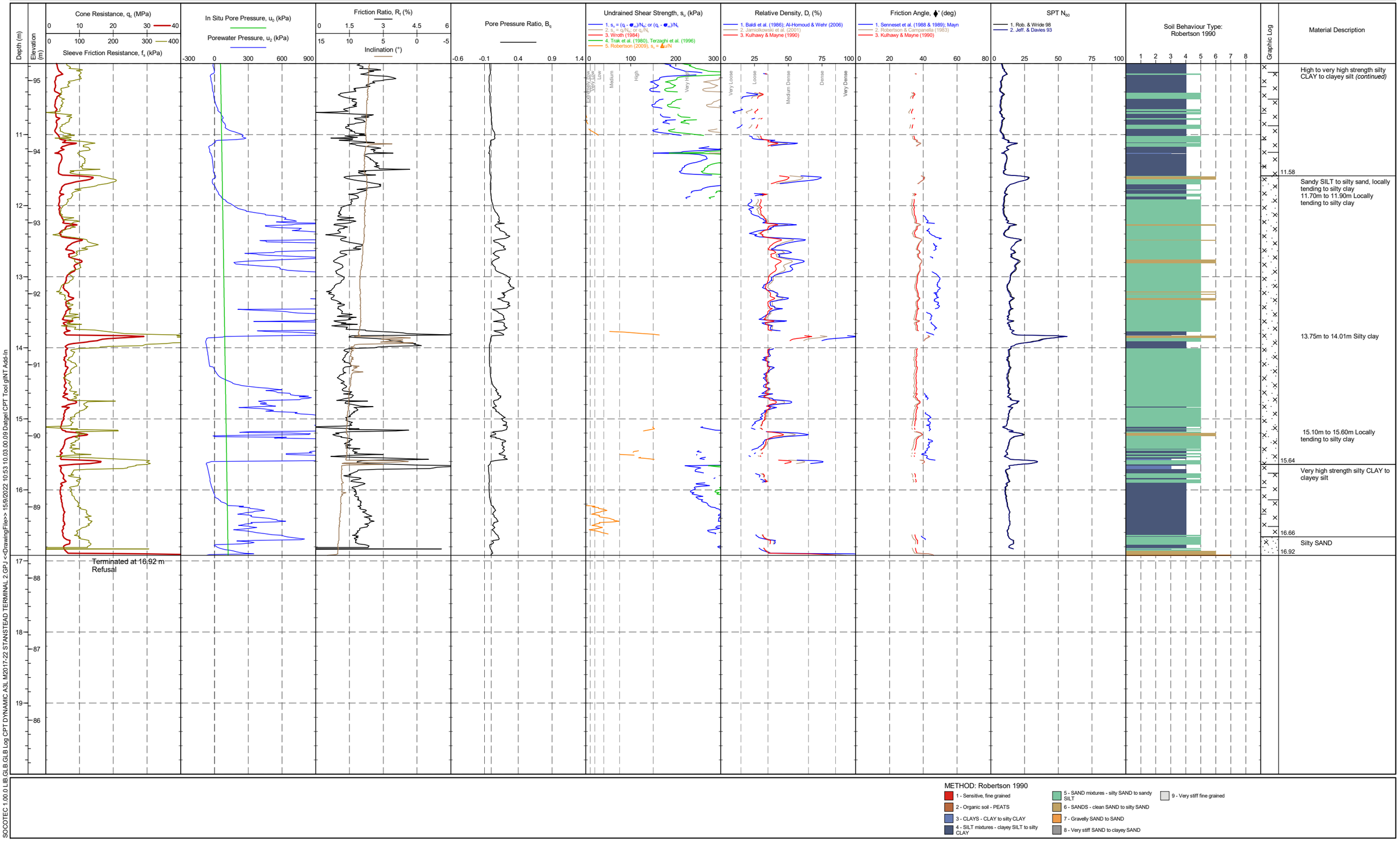
CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555824.0 m NORTHING : 224216.2 m COORD. SYS. : OSGB ELEVATION : 105.24 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT04, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 21/6/2022



CPT LOG

PointID **CPT04**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555824.0 m NORTHING : 224216.2 m COORD. SYS. : OSGB ELEVATION : 105.24 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT04, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 21/6/2022

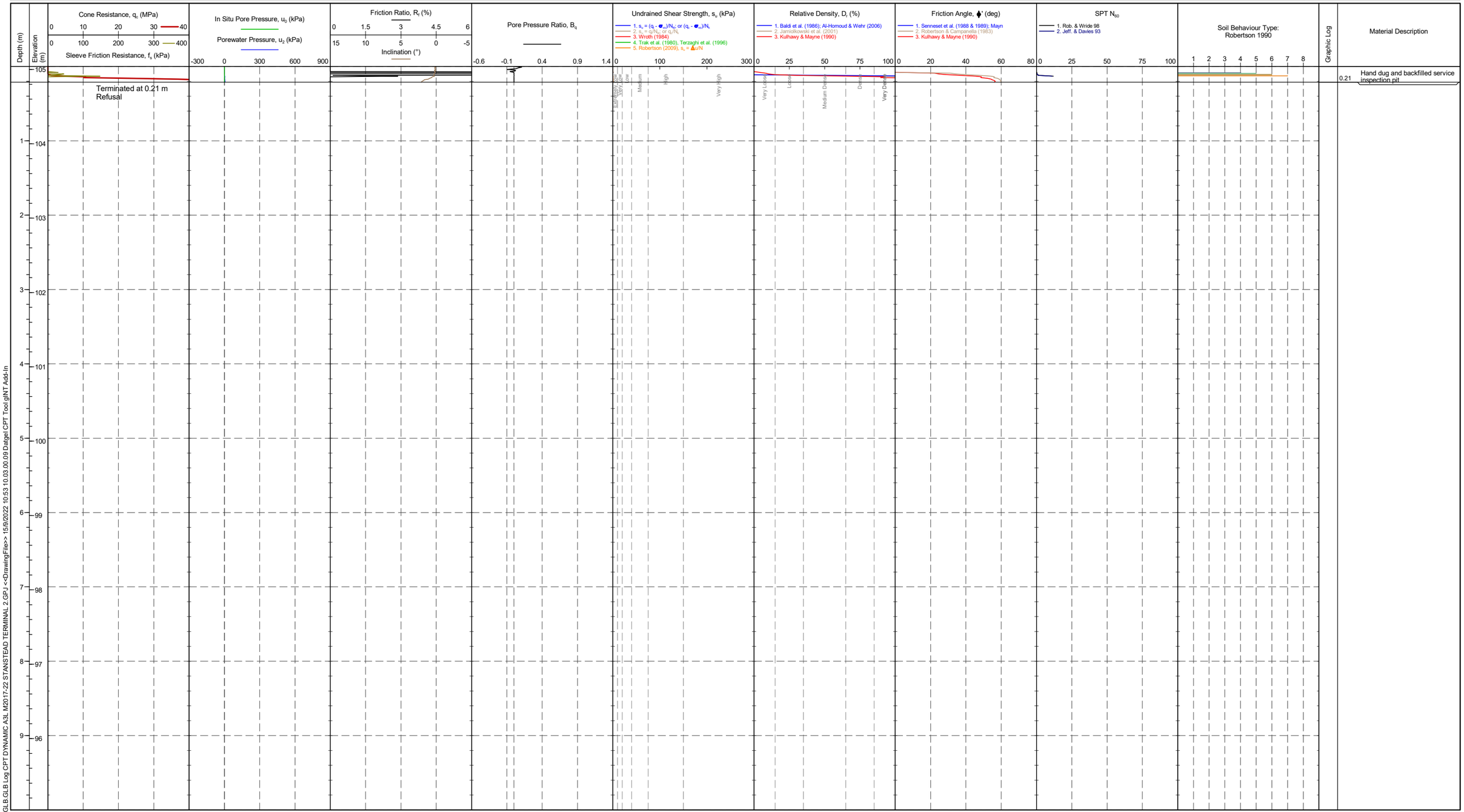


SOCOTEC

CPT LOG

PointID
CPT05

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555860.3 m NORTHING : 224181.0 m COORD. SYS. : OSGB ELEVATION : 105.04 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 21/6/2022

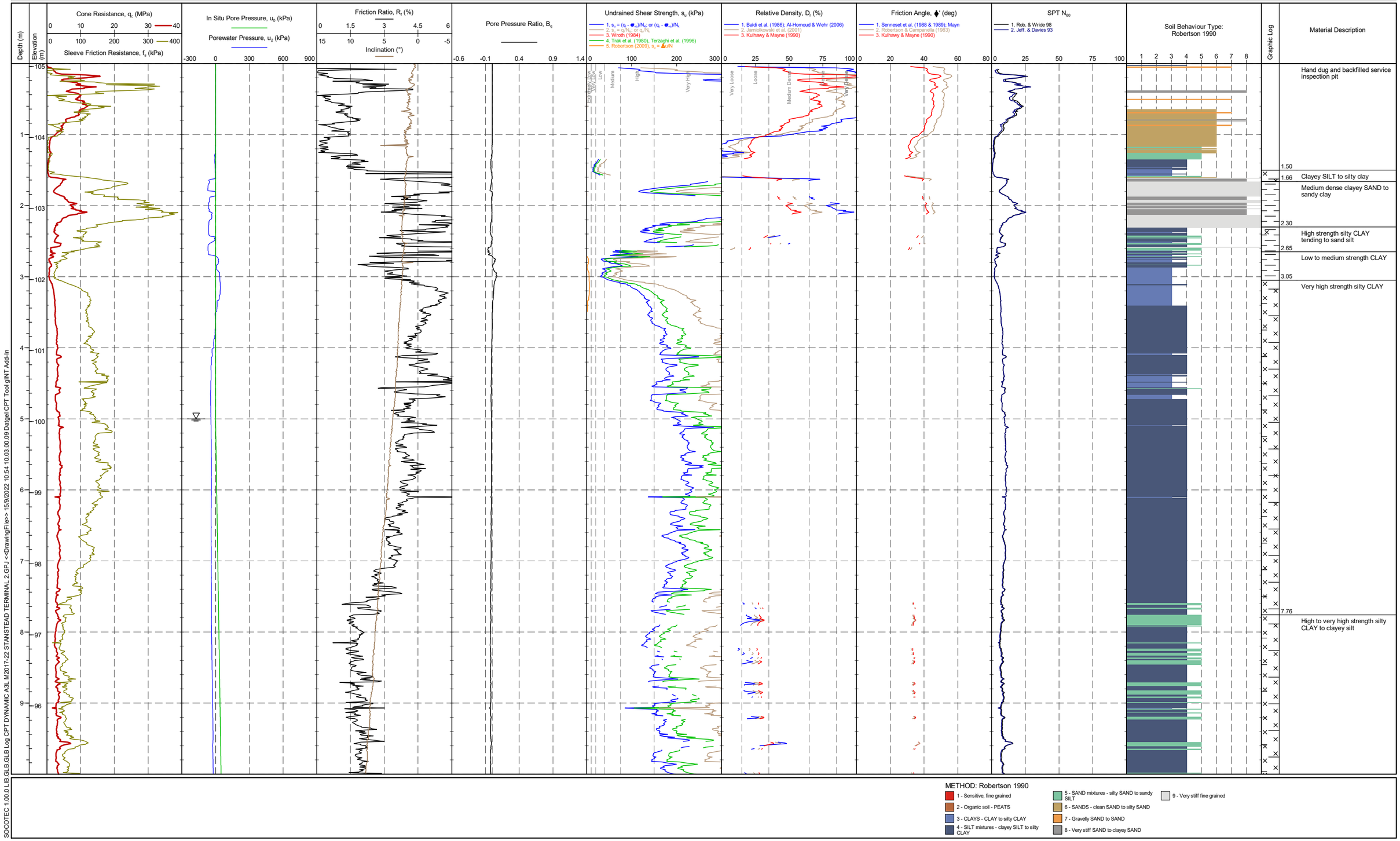


SOCOTEC

CPT LOG

PointID **CPT05.1**

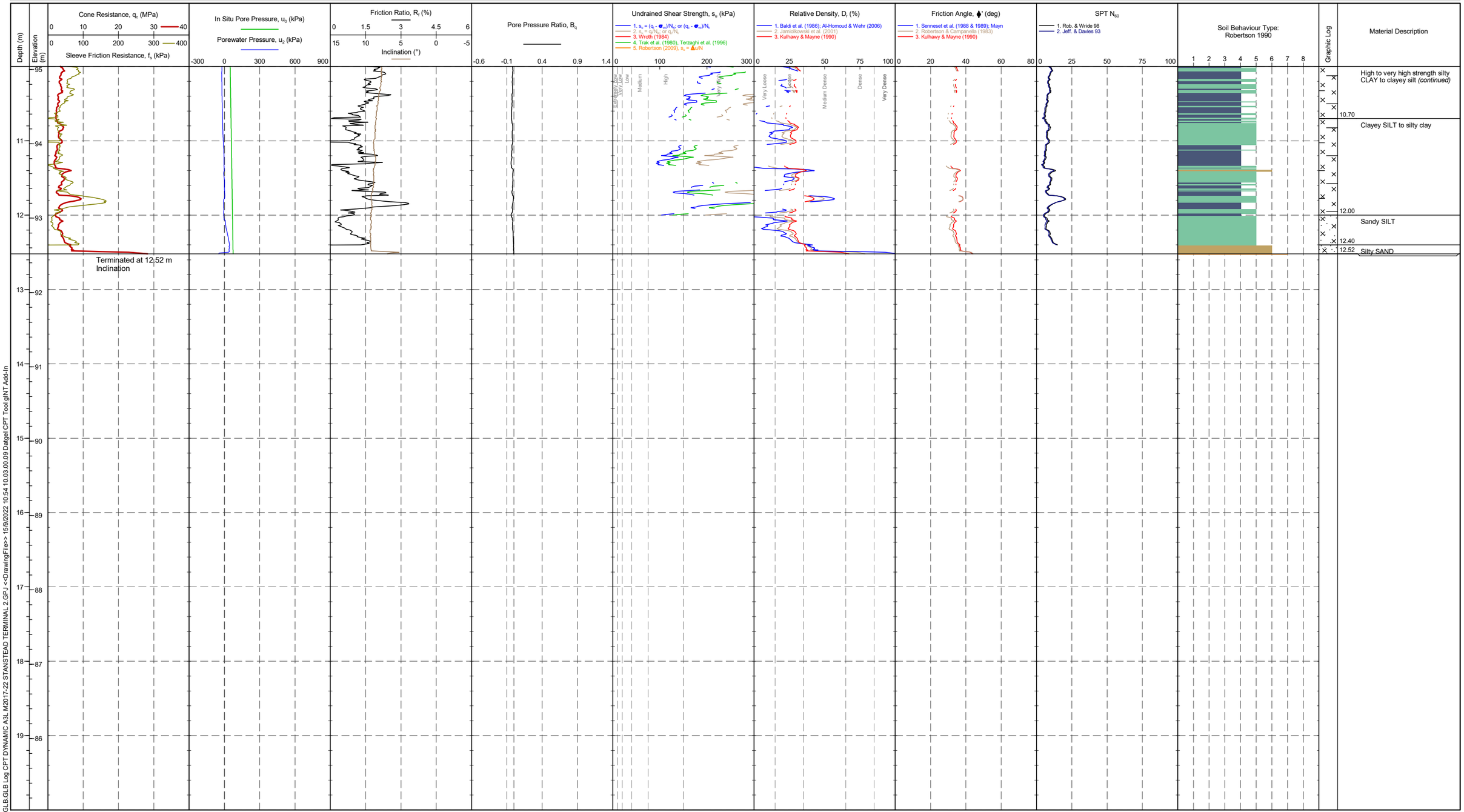
CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555860.3 m NORTHING : 224181.0 m COORD. SYS. : OSGB ELEVATION : 105.04 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT05, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 21/6/2022



CPT LOG

PointID
CPT05.1

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555860.3 m NORTHING : 224181.0 m COORD. SYS. : OSGB ELEVATION : 105.04 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT05, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 21/6/2022



SOCOTEC

CPT LOG

PointID **CPT06**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555855.5 m NORTHING : 224124.4 m COORD. SYS. : OSGB ELEVATION : 104.44 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 21/6/2022

Depth (m) | Elevation (m)

Cone Resistance, q_c (MPa): 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa): 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa): -300 0 300 600 900

Friction Ratio, R_f (%): 0 1.5 3 4.5 6
Inclination (°): 15 10 5 0 -5

Pore Pressure Ratio, B_q: -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa): 0 100 200 300
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q/N_k$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = \Delta u/N$
Extremely Low · Very Low · Low · Medium · High · Very High

Relative Density, D, (%): 0 25 50 75 100
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
Very Loose · Loose · Medium Dense · Dense · Very Dense

Friction Angle, ϕ' (deg): 0 20 40 60 80
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)

SPT N_{60}: 0 25 50 75 100
1. Rob. & Wride 98
2. Jeff. & Davies 93

Soil Behaviour Type: Robertson 1990: 1 2 3 4 5 6 7 8

Graphic Log

Material Description

0.21 Hand dug and backfilled service inspection pit

Terminated at 0.21 m
Inclination

Elevation (m): 104 103 102 101 100 99 98 97 96 95
Depth (m): 1 2 3 4 5 6 7 8 9

METHOD: Robertson 1990
- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

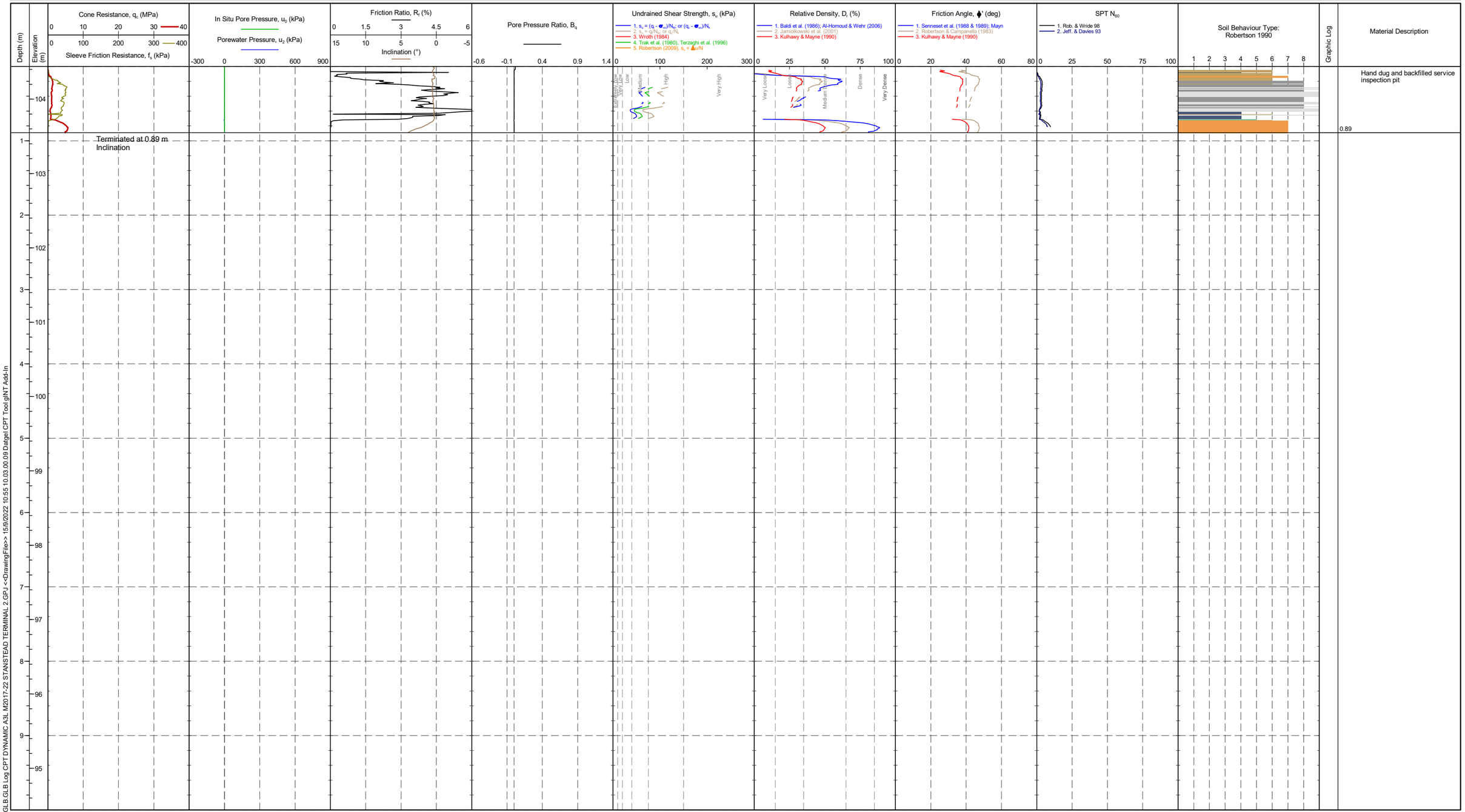
SOCOTEC 1.00.0 LIB.GLB Log CPT DYNAMIC AGL M2017-22 STANSTEAD TERMINAL 2.GPJ <<DrawingFile>> 15/9/2022 10:55 10.03.00.09 Datgel CPT Tool gINT Add-In

SOCOTEC

CPT LOG

PointID
CPT06.1

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555855.5 m NORTHING : 224124.4 m COORD. SYS. : OSGB ELEVATION : 104.44 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 21/6/2022



METHOD: Robertson 1990

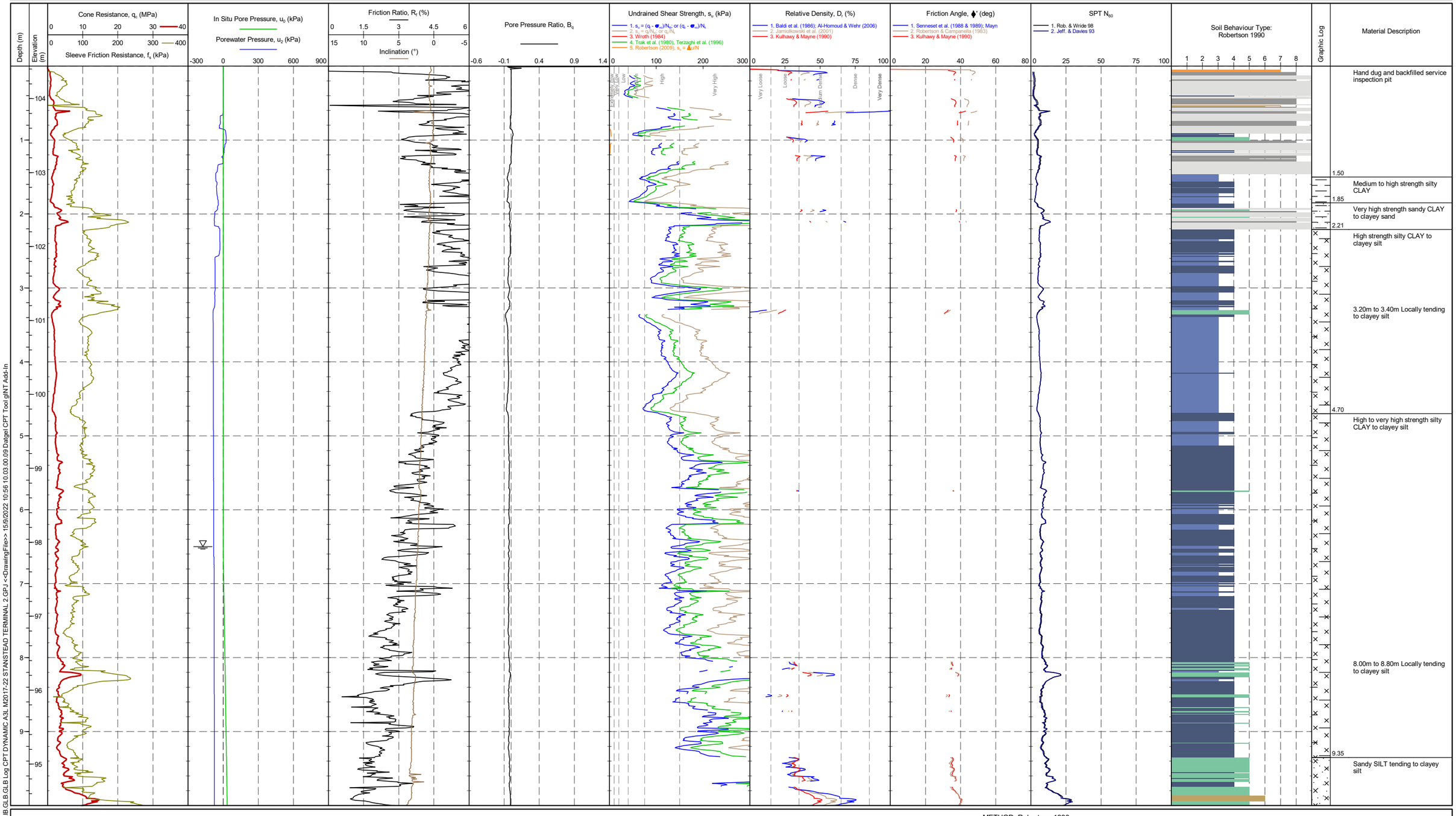
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

SOCOTEC

CPT LOG

PointID
CPT06.2

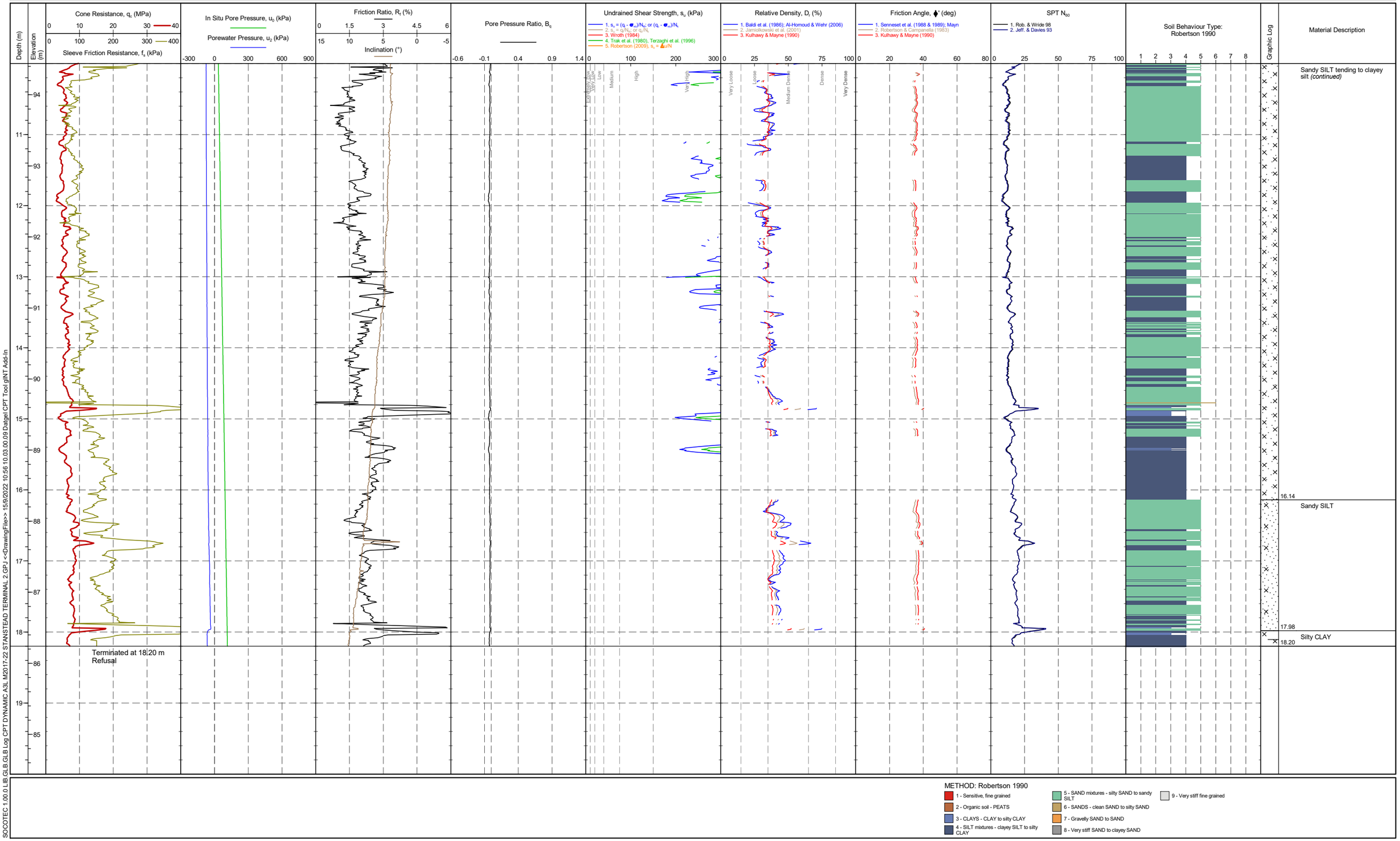
CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555855.5 m NORTHING : 224124.4 m COORD. SYS. : OSGB ELEVATION : 104.44 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT06, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 21/6/2022



CPT LOG

PointID **CPT06.2**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555855.5 m NORTHING : 224124.4 m COORD. SYS. : OSGB ELEVATION : 104.44 m	RIG : 20 Tonne tracked unit CONE TYPE : Subtraction CONE ID : S10-CFIIP.2033 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 28/6/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT06, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 21/6/2022



METHOD: Robertson 1990

- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

SOCOTEC

CPT LOG

PointID **CPT07**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555911.8 m NORTHING : 224157.1 m COORD. SYS. : OSGB ELEVATION : 105.25 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT07, coordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 30/6/2022

Depth (m) / Elevation (m)

Cone Resistance, q_c (MPa): 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa): 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa)
-300 0 300 600 900

Friction Ratio, R_f (%): 0 1.5 3 4.5 6
Inclination (°): 15 10 5 0 -5

Pore Pressure Ratio, B_q: -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa)
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q/N_k$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = q_t/N$
0 100 200 300
Extra High / Very High / High / Medium / Low / Very Low

Relative Density, D, (%)
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
0 25 50 75 100
Very Loose / Loose / Medium Dense / Dense / Very Dense

Friction Angle, ϕ' (deg)
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)
0 20 40 60 80

SPT N_{60}
1. Rob. & Wride 98
2. Jeff. & Davies 93
0 25 50 75 100

Soil Behaviour Type: Robertson 1990
1 2 3 4 5 6 7 8

Graphic Log

Material Description

105 — Hand dug and backfilled service inspection pit — 0.80

Terminated at 0.80 m
Inclination

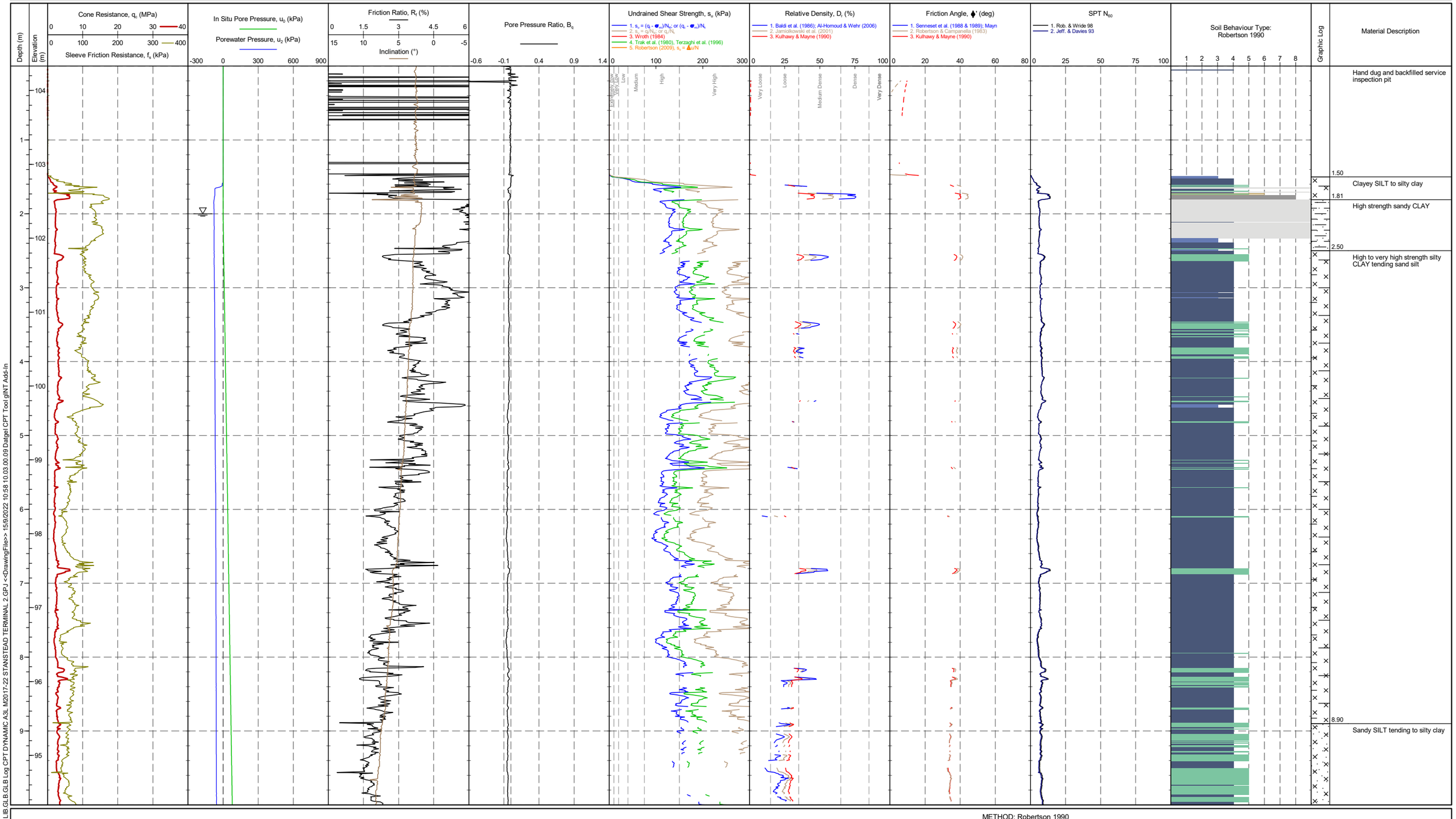
1 104
2 103
3 102
4 101
5 100
6 99
7 98
8 97
9 96

METHOD: Robertson 1990
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

CPT LOG

PointID
CPT08

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555977.0 m NORTHING : 224202.4 m COORD. SYS. : OSGB ELEVATION : 104.33 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 5/7/2022



SOCOTEC

CPT LOG

PointID
CPT08

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555977.0 m NORTHING : 224202.4 m COORD. SYS. : OSGB ELEVATION : 104.33 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 5/7/2022

Depth (m) | Elevation (m)

Cone Resistance, q_c (MPa): 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa): 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa): -300 0 300 600 900

Friction Ratio, R_f (%): 0 1.5 3 4.5 6
Inclination (°): 15 10 5 0 -5

Pore Pressure Ratio, B_q: -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa): 0 100 200 300
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q_t/N_k)$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = q_t/N$
Extremely Low / Very Low / Low / Medium / High / Very High

Relative Density, D, (%): 0 25 50 75 100
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
Very Loose / Loose / Medium Dense / Dense / Very Dense

Friction Angle, ϕ' (deg): 0 20 40 60 80
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)

SPT N_{60}: 0 25 50 75 100
1. Rob. & Wride 98
2. Jeff. & Davies 93

Soil Behaviour Type: Robertson 1990: 1 2 3 4 5 6 7 8

Graphic Log

Material Description

Depth (m)	Elevation (m)	Material Description
10.19		Sandy SILT tending to silty clay *(continued)*
10.45		High strength silty CLAY
		Sandy SILT rarely tending to silty clay
13.34		

Terminated at 13.34 m
Refusal

METHOD: Robertson 1990
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

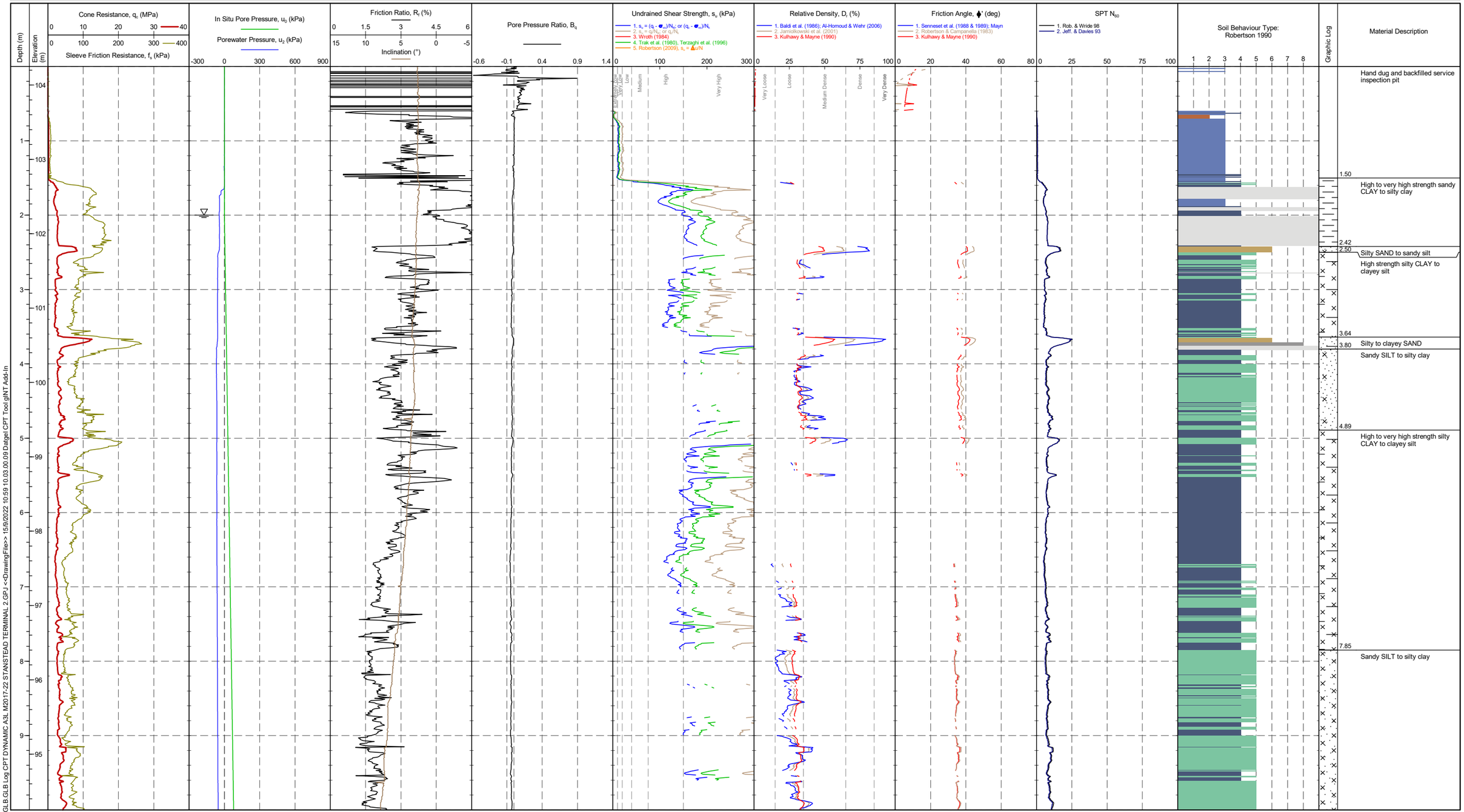
SOCOTEC 1.00.0 LIB.GLB.GLB Log CPT DYNAMIC AGL M2017-22 STANSTEAD TERMINAL 2.GPJ <<DrawingFile>> 15/9/2022 10:58 10.03.00.09 Datgel CPT Tool gINT Add-In

SOCOTEC

CPT LOG

PointID
CPT09

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 556029.6 m NORTHING : 224186.5 m COORD. SYS. : OSGB ELEVATION : 104.25 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 5/7/2022

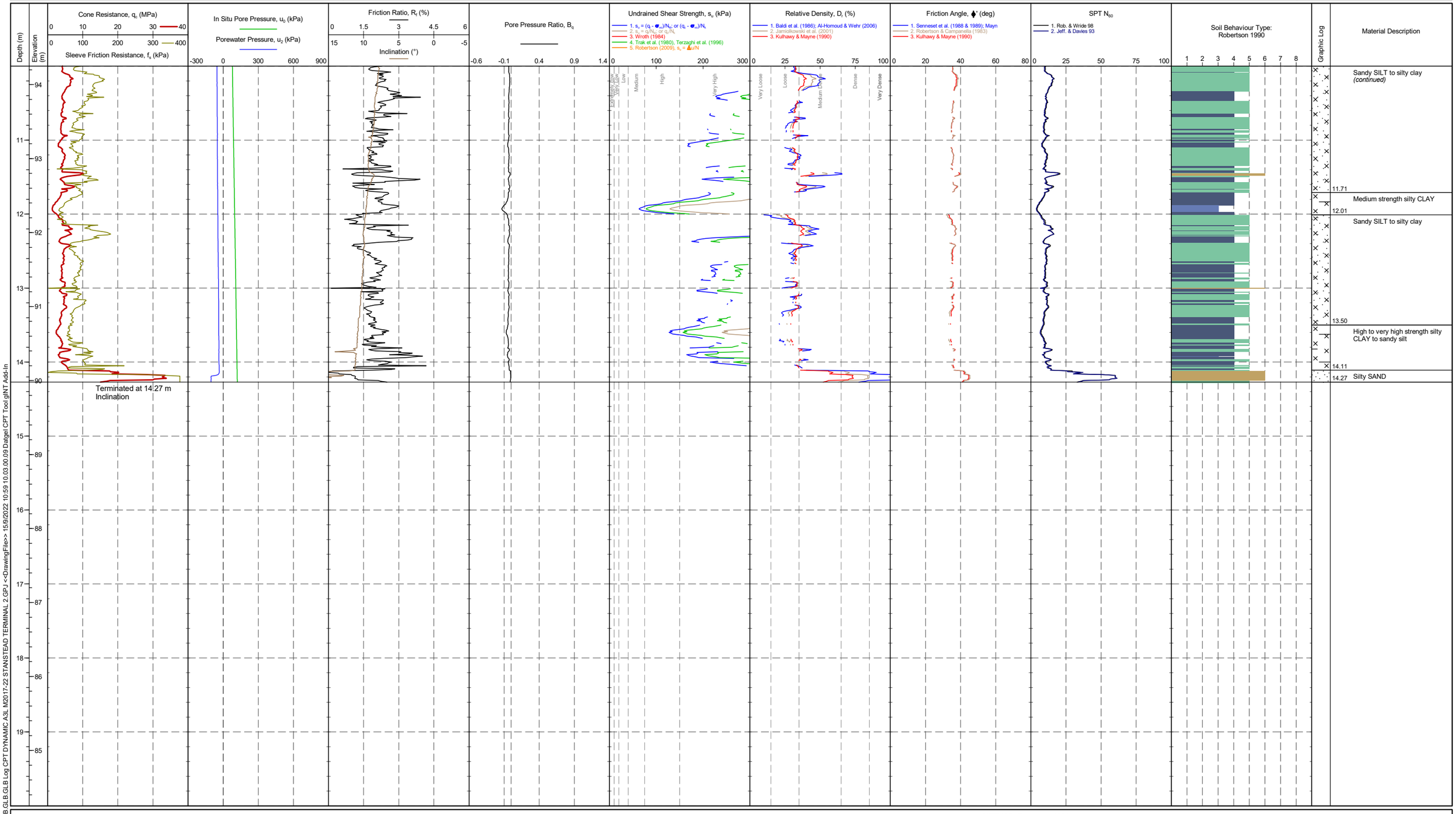


SOCOTEC

CPT LOG

PointID
CPT09

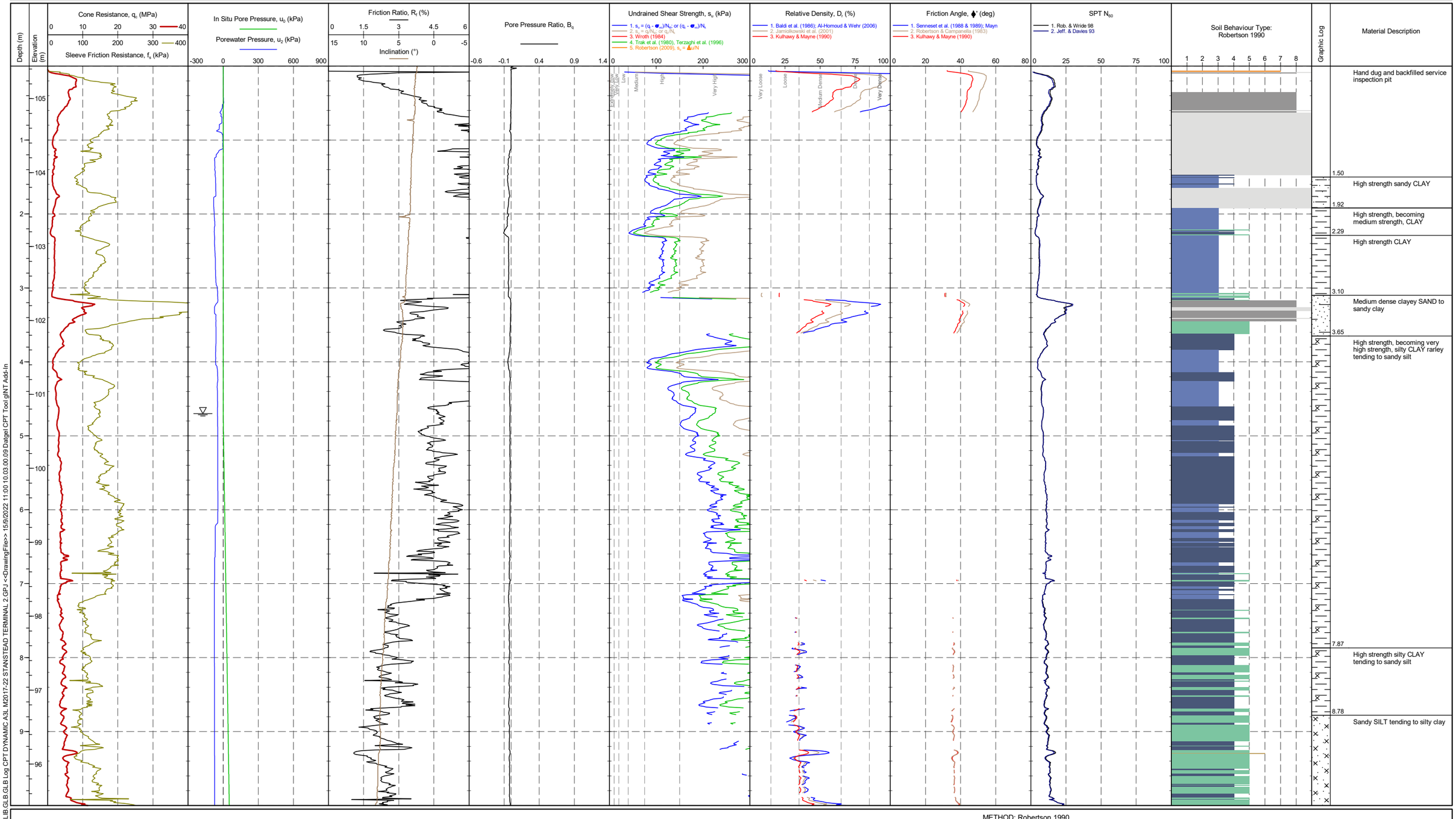
CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 556029.6 m NORTHING : 224186.5 m COORD. SYS. : OSGB ELEVATION : 104.25 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 5/7/2022



CPT LOG

PointID **CPT10**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555981.7 m NORTHING : 224098.0 m COORD. SYS. : OSGB ELEVATION : 105.44 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 1/7/2022

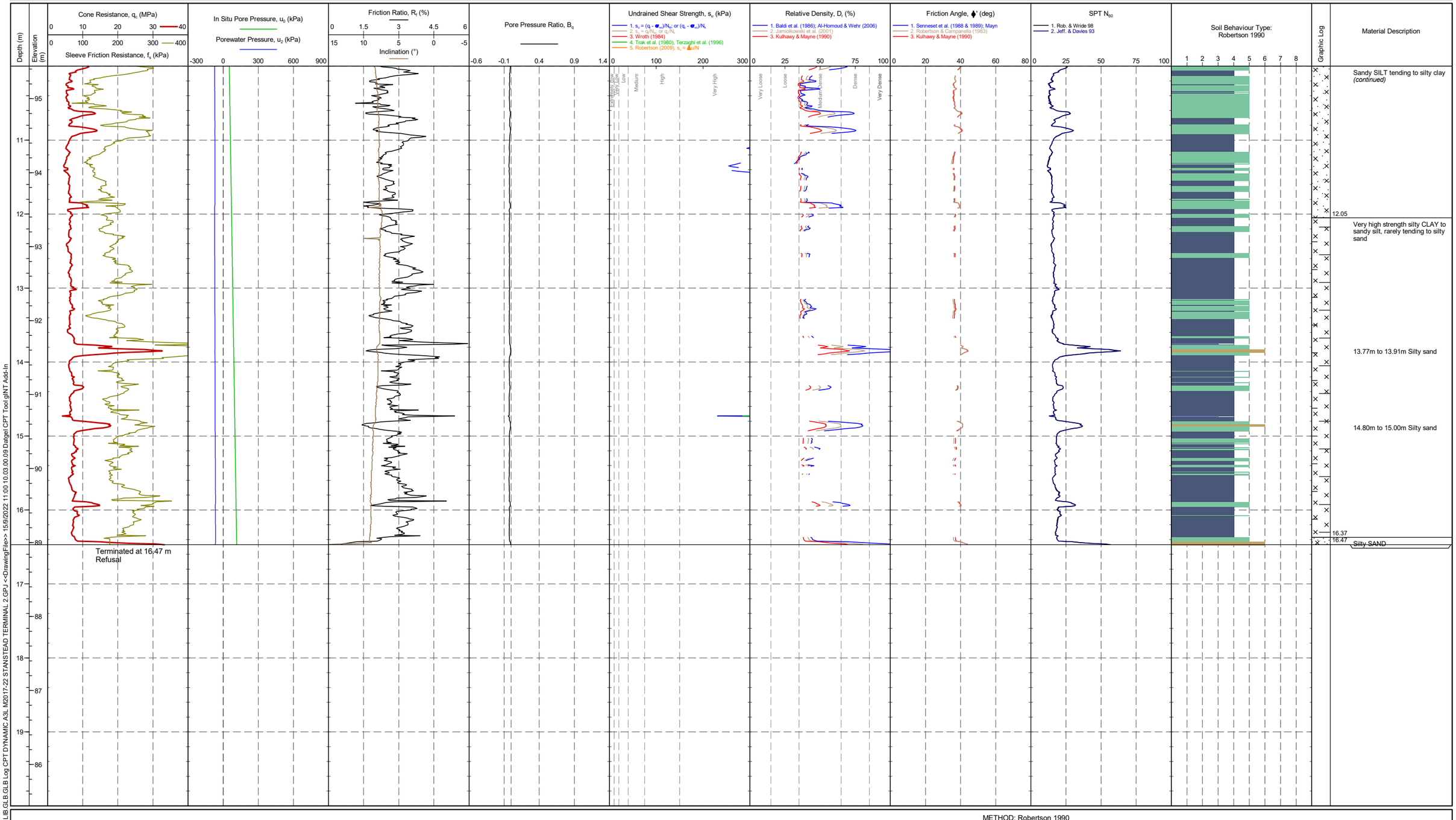


SOCOTEC

CPT LOG

PointID
CPT10

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555981.7 m NORTHING : 224098.0 m COORD. SYS. : OSGB ELEVATION : 105.44 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 1/7/2022

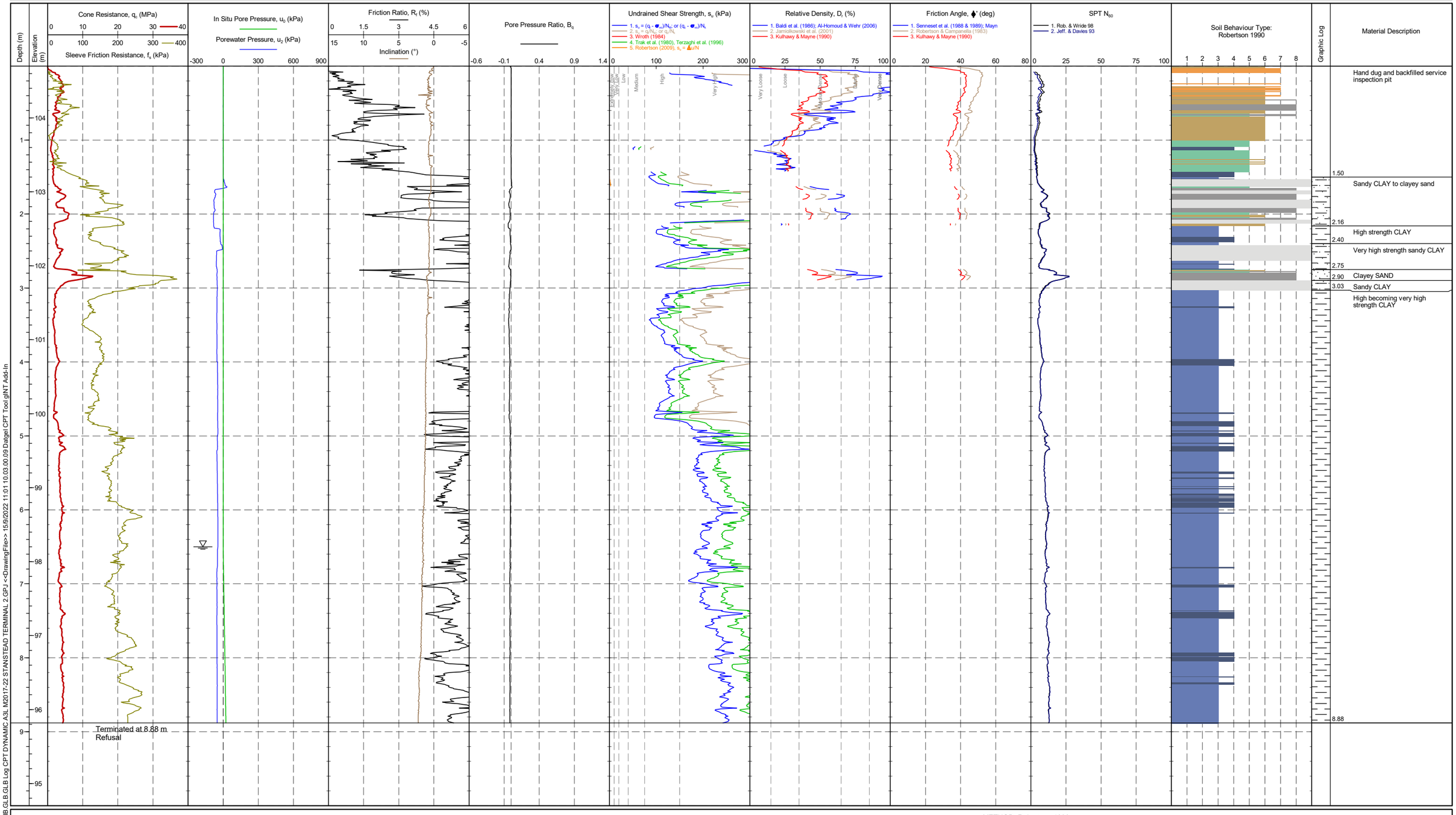


SOCOTEC

CPT LOG

PointID
CPT11

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555918.0 m NORTHING : 224123.8 m COORD. SYS. : OSGB ELEVATION : 104.70 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 30/6/2022



METHOD: Robertson 1990

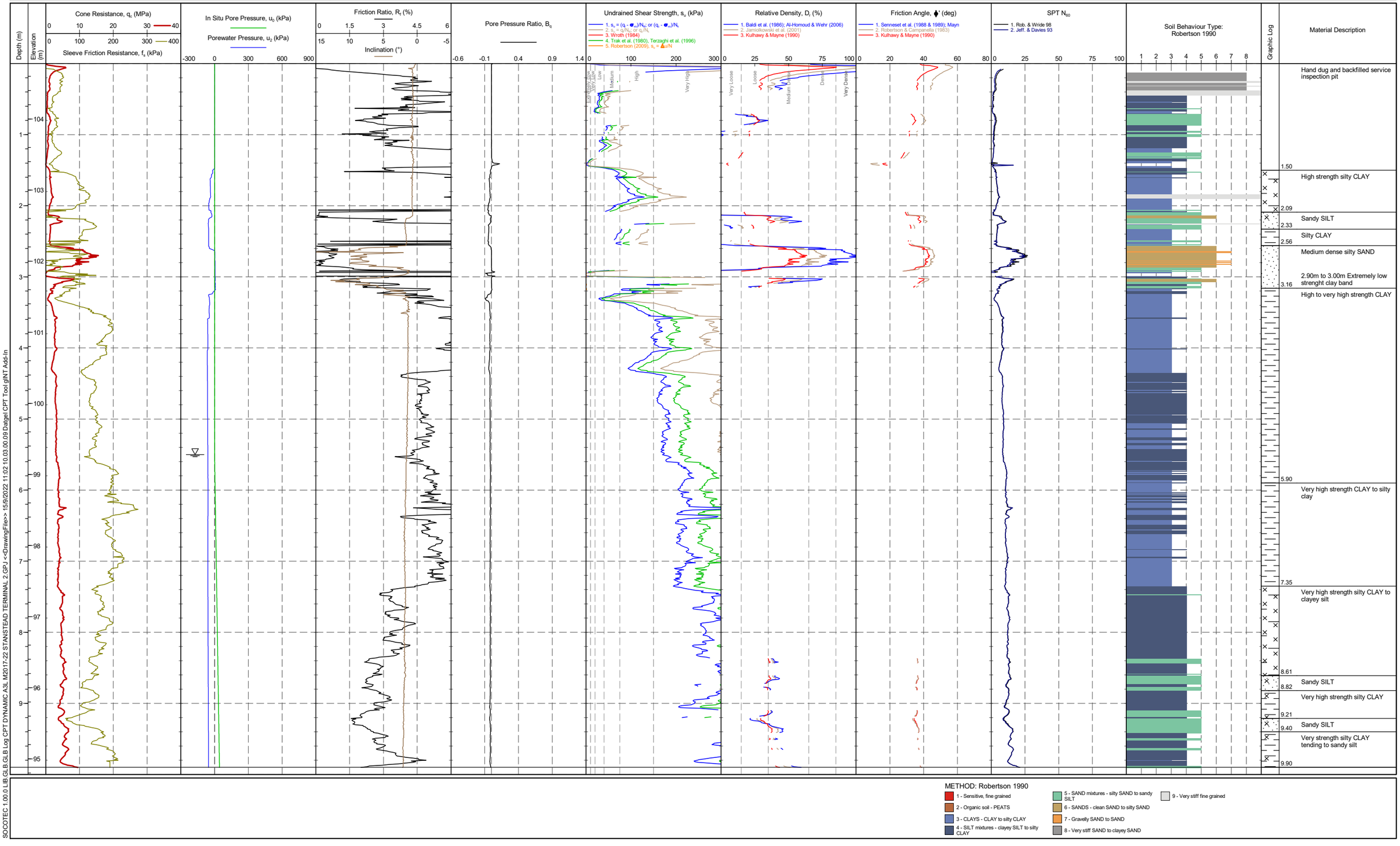
- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

SOCOTEC

CPT LOG

PointID
CPT12

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555903.2 m NORTHING : 224085.1 m COORD. SYS. : OSGB ELEVATION : 104.78 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT12, coordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 30/6/2022



SOCOTEC 1.00.0 LIB GLB GLB Log CPT DYNAMIC A3L M2017-22 STANSTEAD TERMINAL 2.GPJ <<DrawingFile>> 15/9/2022 11:02 10.03.00.09 Datgel CPT Tool gINT Add-In

SOCOTEC

CPT LOG

PointID **CPT12**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555903.2 m NORTHING : 224085.1 m COORD. SYS. : OSGB ELEVATION : 104.78 m	RIG : 20 Tonne tracked rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Test carried out at opposite end of 1m long inspection pit from SCPT12, coordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 30/6/2022

Depth (m) | Elevation (m)

Cone Resistance, q_c (MPa): 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa): 0 100 200 300 400
In Situ Pore Pressure, u_0 (kPa)
Porewater Pressure, u_2 (kPa): -300 0 300 600 900
Friction Ratio, R_f (%): 0 1.5 3 4.5 6
Inclination (°): 15 10 5 0 -5
Pore Pressure Ratio, B_q: -0.6 -0.1 0.4 0.9 1.4
Undrained Shear Strength, s_u (kPa): 0 100 200 300
1. $s_u = (q_t - \sigma_{vo})/N_k$, or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q/N_k$, or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = \Delta u/N$
Relative Density, D, (%): 0 25 50 75 100
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
Friction Angle, ϕ' (deg): 0 20 40 60 80
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)
SPT N_{60}: 0 25 50 75 100
1. Rob. & Wride 98
2. Jeff. & Davies 93
Soil Behaviour Type: Robertson 1990: 1 2 3 4 5 6 7 8
Graphic Log
Material Description

Terminated at 9.90 m
Refusal

Undrained Shear Strength: Extremely low, Very Low, Low, Medium, High, Very High
Relative Density: Very Loose, Loose, Medium Dense, Dense, Very Dense

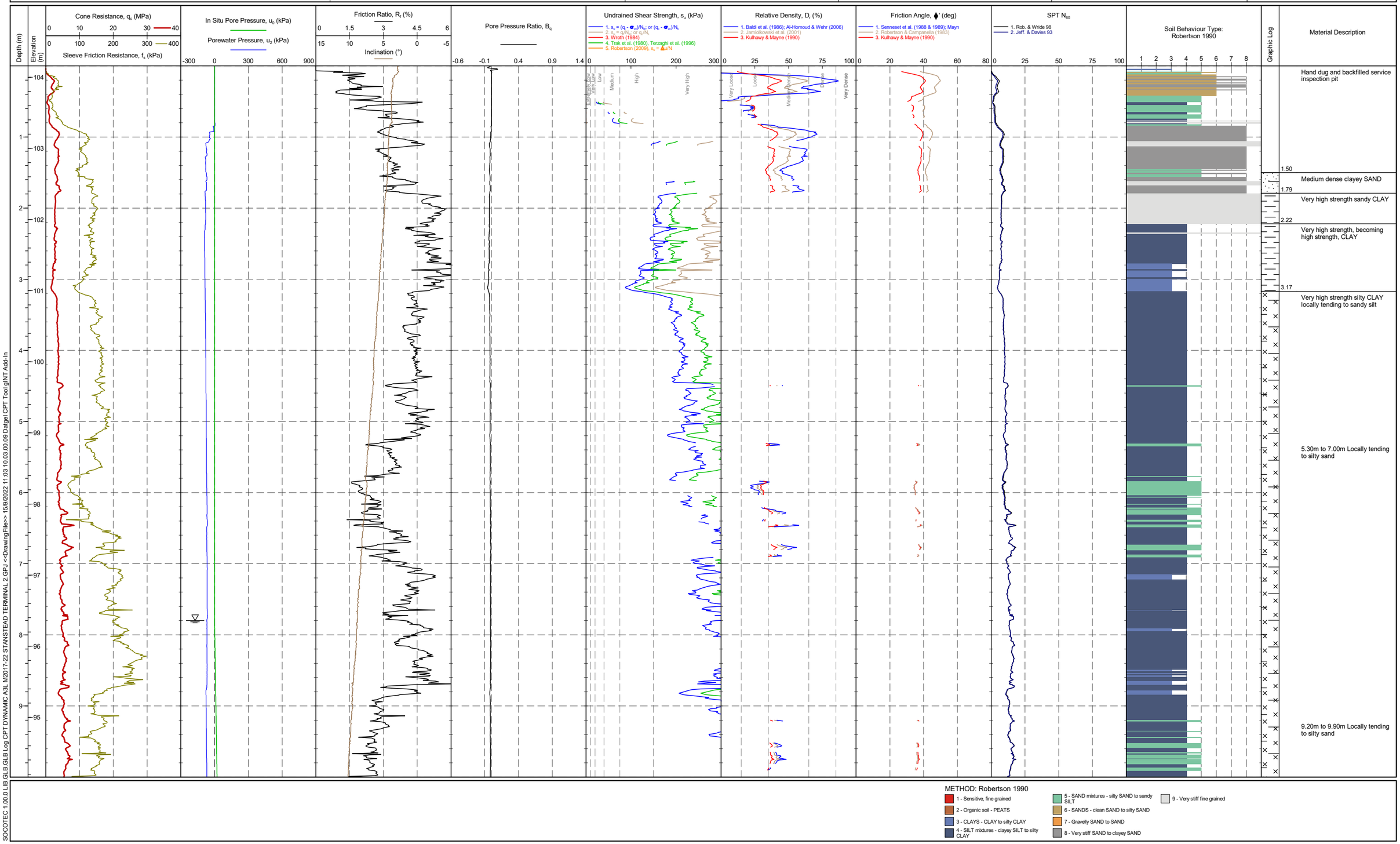
Depth (m)	Elevation (m)
11	94
12	93
13	92
14	91
15	90
16	89
17	88
18	87
19	86
	85

METHOD: Robertson 1990
- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

CPT LOG

PointID
CPT13

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555890.8 m NORTHING : 224008.2 m COORD. SYS. : OSGB ELEVATION : 104.16 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 6/7/2022



CPT LOG

PointID **CPT13**

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555890.8 m NORTHING : 224008.2 m COORD. SYS. : OSGB ELEVATION : 104.16 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 6/7/2022

Depth (m) / Elevation (m)

Cone Resistance, q_c (MPa) 0 10 20 30 40
Sleeve Friction Resistance, f_s (kPa) 0 100 200 300 400

In Situ Pore Pressure, u_0 (kPa) -300 0 300 600 900
Porewater Pressure, u_2 (kPa)

Friction Ratio, R_f (%) 0 1.5 3 4.5 6
Inclination (°) 15 10 5 0 -5

Pore Pressure Ratio, B_q -0.6 -0.1 0.4 0.9 1.4

Undrained Shear Strength, s_u (kPa) 0 100 200 300
1. $s_u = (q_t - \sigma_{vo})/N_{kt}$ or $(q_t - \sigma_{vo})/N_k$
2. $s_u = (q_t/N_{kt})$ or q_t/N_k
3. Wroth (1984)
4. Trak et al. (1980), Terzaghi et al. (1996)
5. Robertson (2009), $s_u = \Delta u/N$
Extremely low / Very low / Low / Medium / High / Very High

Relative Density, D, (%) 0 25 50 75 100
1. Baldi et al. (1986); Al-Homoud & Wehr (2006)
2. Jamiolkowski et al. (2001)
3. Kulhawy & Mayne (1990)
Very Loose / Loose / Medium Dense / Dense / Very Dense

Friction Angle, ϕ' (deg) 0 20 40 60 80
1. Senneset et al. (1988 & 1989); Mayn
2. Robertson & Campanella (1983)
3. Kulhawy & Mayne (1990)

SPT N_{60} 0 25 50 75 100
1. Rob. & Wride 98
2. Jeff. & Davies 93

Soil Behaviour Type: Robertson 1990 1 2 3 4 5 6 7 8

Graphic Log

Material Description

94 / 11 — Very high strength silty CLAY locally tending to sandy silt *(continued)*
10.20m to 10.30m Locally tending to silty sand

10.60m to 10.80m Locally tending to silty sand

11.11

93 / 12 — Sandy SILT to silty clay

92 / 13

13.40

91 / 14 — Sandy SILT

14.30

90 — Medium dense silty SAND

14.62

Terminated at 14,62 m
Refusal

89 / 15
88 / 16
87 / 17
86 / 18
85 / 19

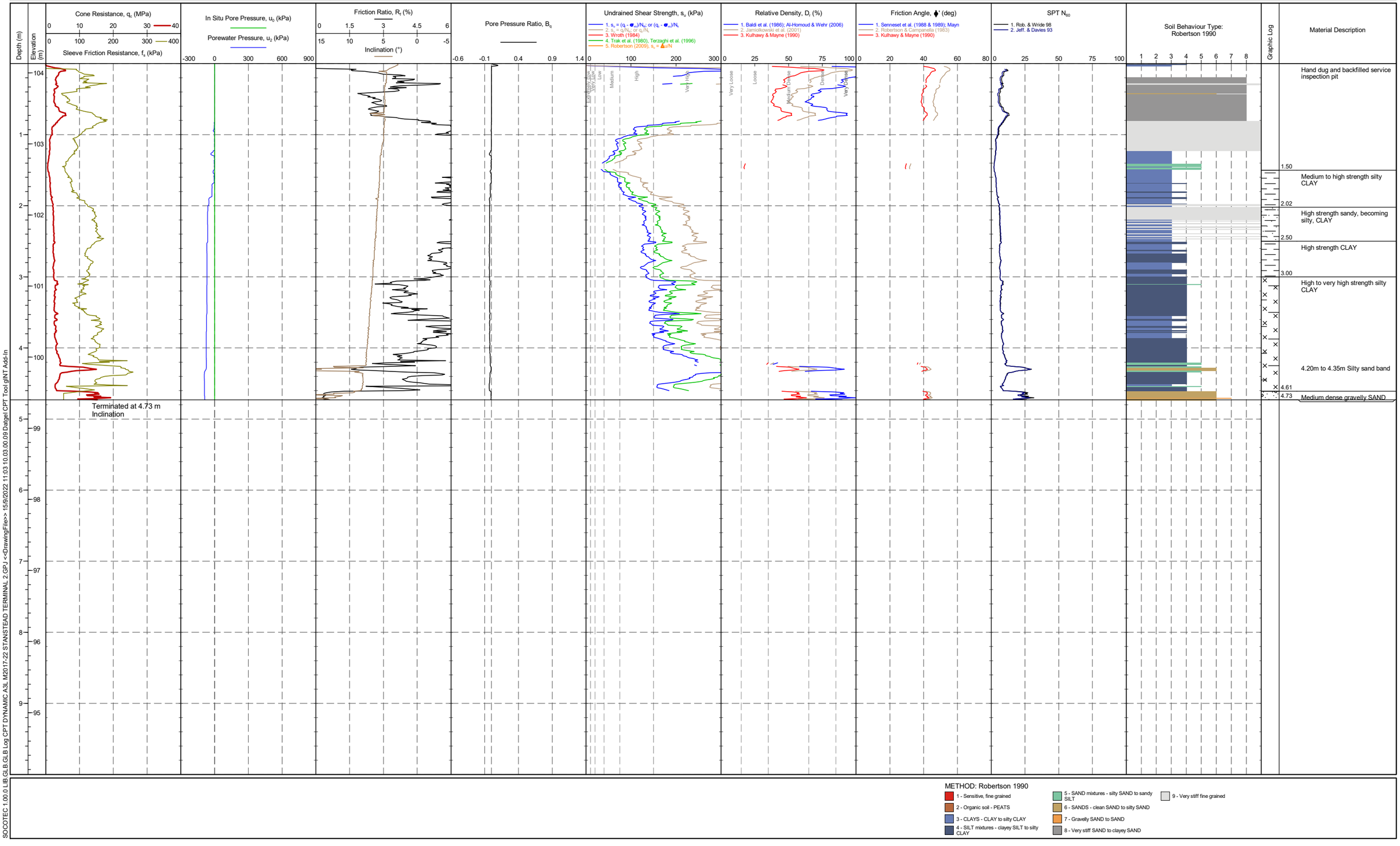
METHOD: Robertson 1990
1 - Sensitive, fine grained
2 - Organic soil - PEATS
3 - CLAYS - CLAY to silty CLAY
4 - SILT mixtures - clayey SILT to silty CLAY
5 - SAND mixtures - silty SAND to sandy SILT
6 - SANDS - clean SAND to silty SAND
7 - Gravelly SAND to SAND
8 - Very stiff SAND to clayey SAND
9 - Very stiff fine grained

SOCOTEC 1.00.0 LIB:GLB.GLB Log CPT DYNAMIC A3L M2017-22 STANSTEAD TERMINAL 2.GPJ <<DrawingFile>> 15/8/2022 11:03 10.03.00.09 Datgel CPT Tool gINT Add-In

CPT LOG

PointID
CPT14

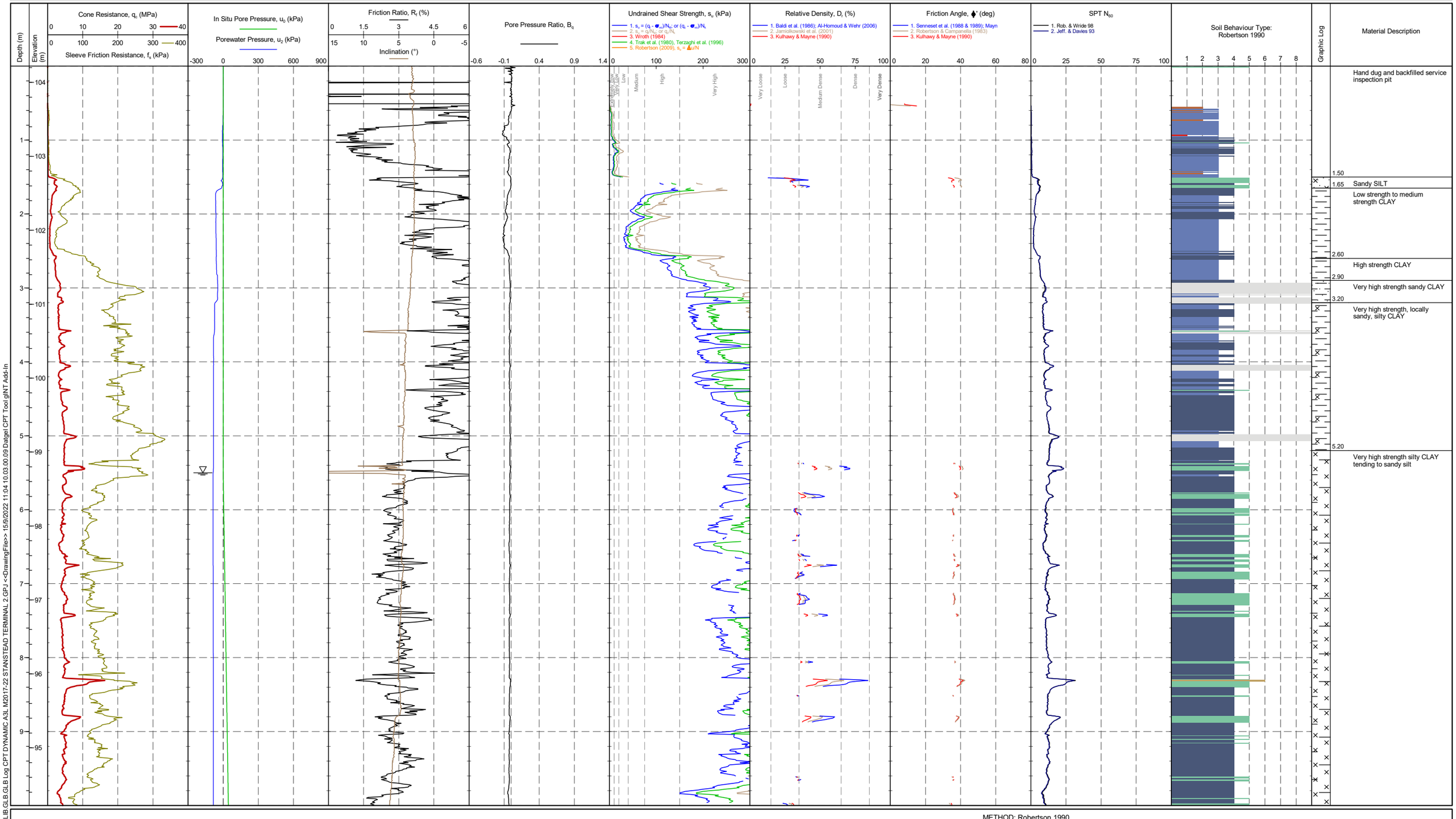
CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555859.4 m NORTHING : 224036.8 m COORD. SYS. : OSGB ELEVATION : 104.13 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 1 STATUS : Final DATE : 6/7/2022



CPT LOG

PointID
CPT15

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555834.9 m NORTHING : 224061.3 m COORD. SYS. : OSGB ELEVATION : 104.22 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 1 OF 2 STATUS : Final DATE : 5/7/2022



METHOD: Robertson 1990

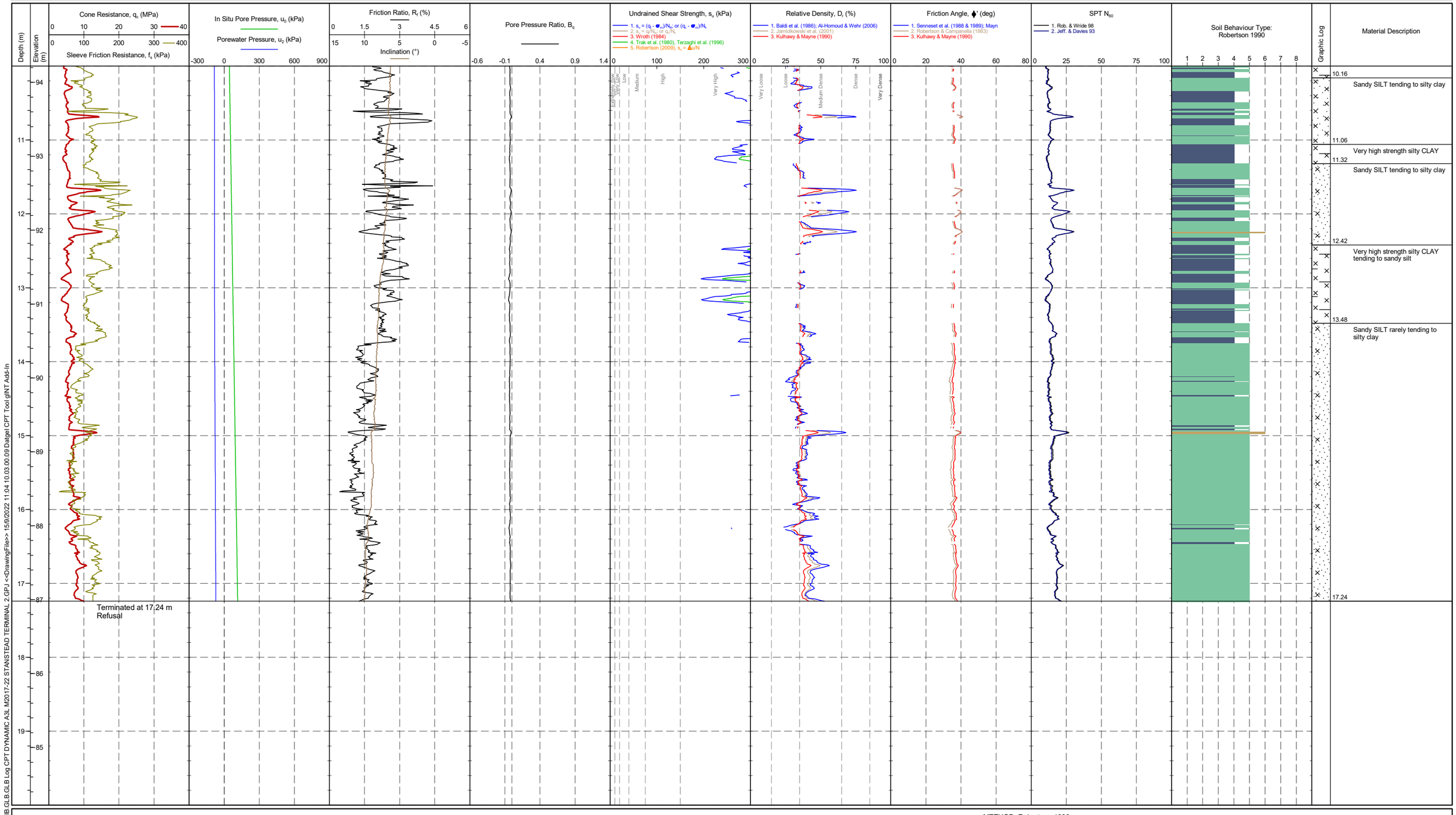
- 1 - Sensitive, fine grained
- 2 - Organic soil - PEATS
- 3 - CLAYS - CLAY to silty CLAY
- 4 - SILT mixtures - clayey SILT to silty CLAY
- 5 - SAND mixtures - silty SAND to sandy SILT
- 6 - SANDS - clean SAND to silty SAND
- 7 - Gravelly SAND to SAND
- 8 - Very stiff SAND to clayey SAND
- 9 - Very stiff fine grained

CPT LOG

SOCOTEC

PointID
CPT15

CLIENT : Marriott Civils ENGINEER : Mott MacDonald Limited PROJECT : STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION LOCATION : Stanstead, Essex PROJECT No. : M2017-22	AREA : EASTING : 555834.9 m NORTHING : 224061.3 m COORD. SYS. : OSGB ELEVATION : 104.22 m	RIG : 20 Tonne wheeled rig CONE TYPE : Subtraction CONE ID : S10-CFIIP.1681 OPERATOR : D Barnett	CHECKED BY : I Campbell CHECKED DATE : 21/7/2022 APPROVED BY : I Campbell APPROVED DATE : 24/8/2022	REMARK Cordinates for centre of inspection pit.	SHEET : 2 OF 2 STATUS : Final DATE : 5/7/2022



Seismic Cone Penetration Test Results

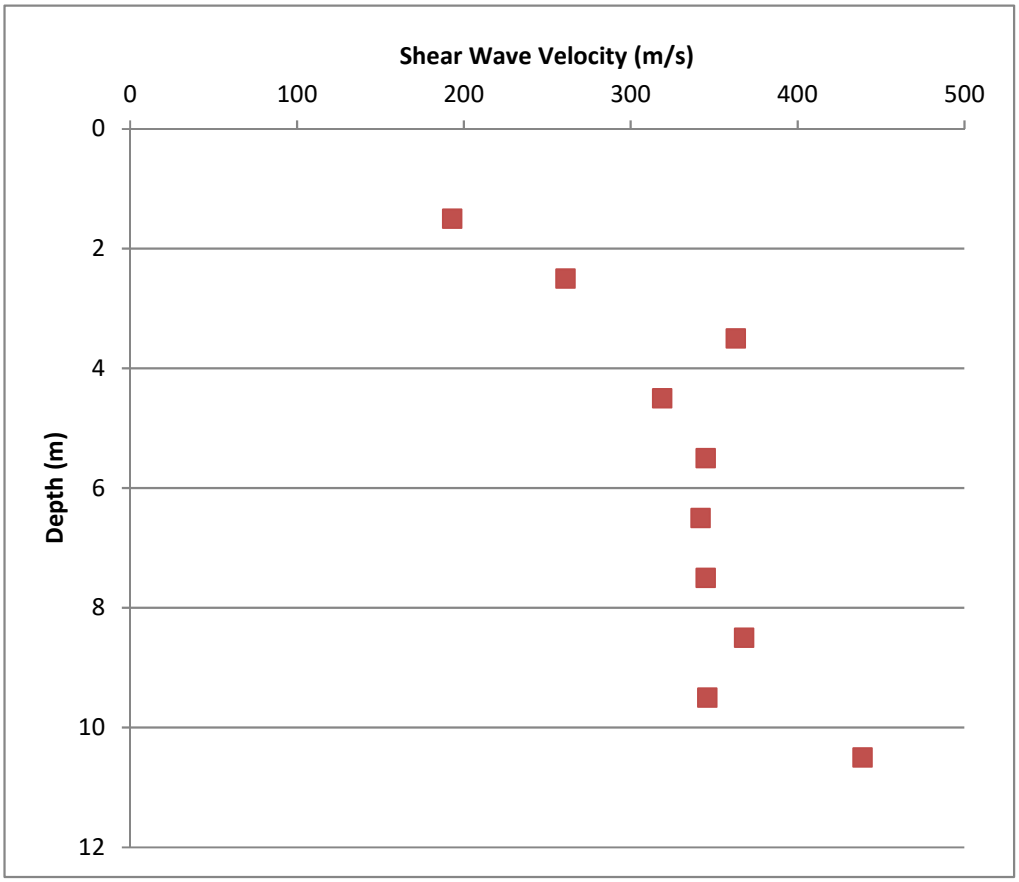
SOCOTEC

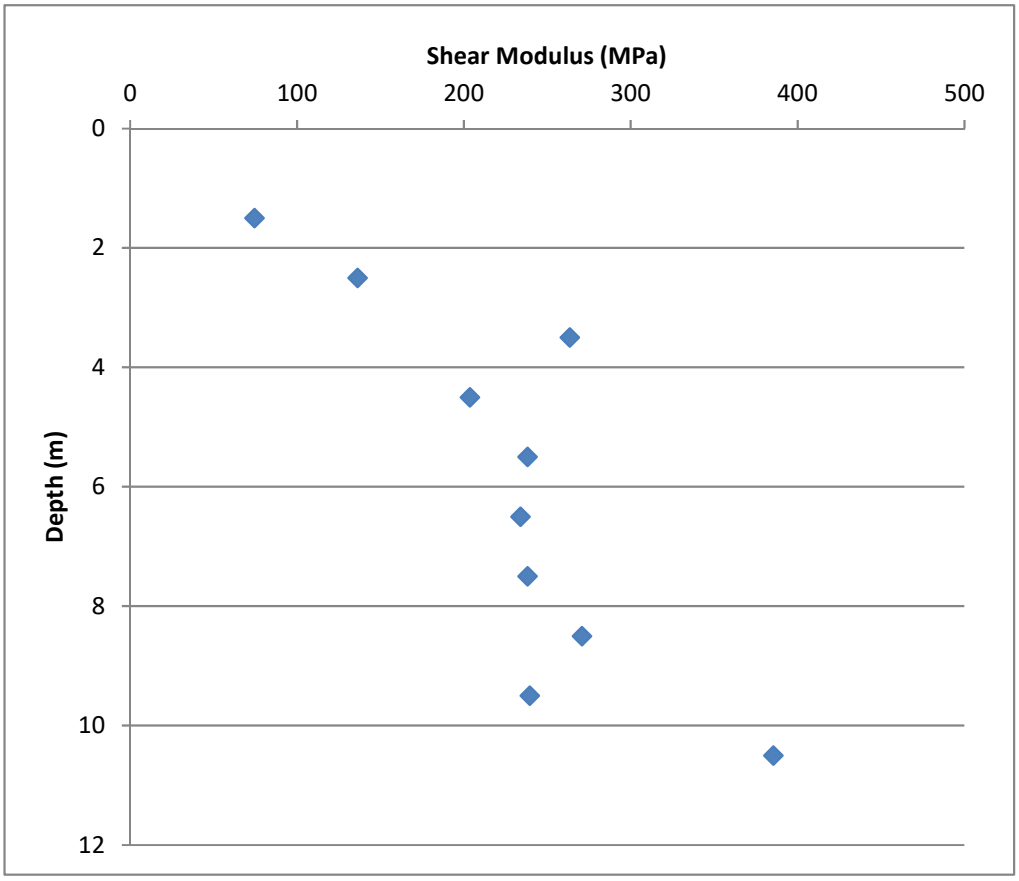
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	193	74.5
2.50	261	136.2
3.50	363	263.5
4.50	319	203.5
5.50	345	238.1
6.50	342	233.9
7.50	345	238.1
8.50	368	270.8
9.50	346	239.4
10.50	439	385.4

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





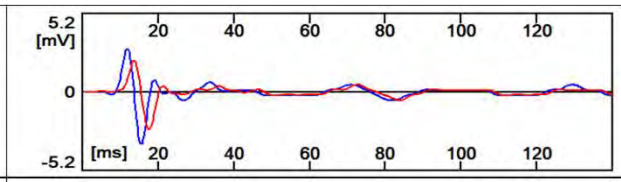
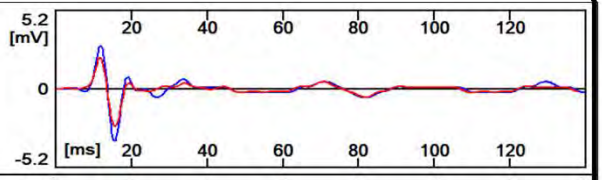
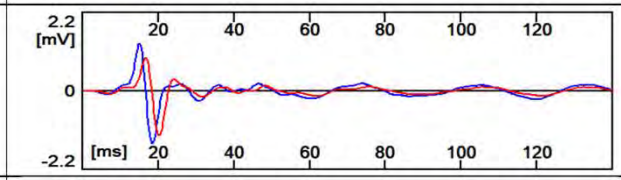
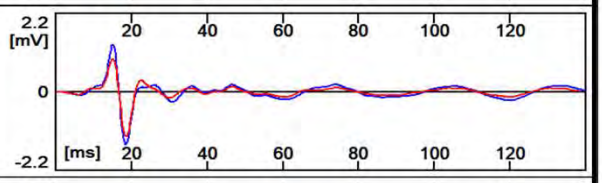
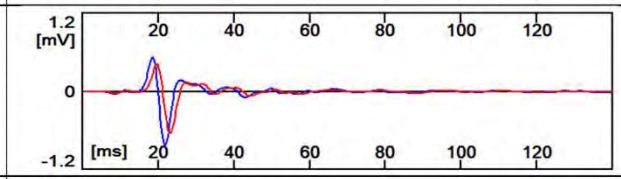
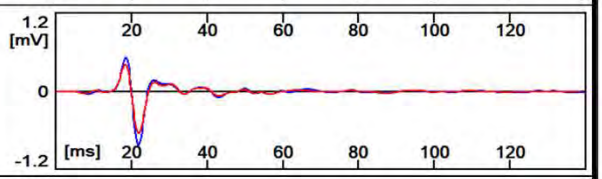
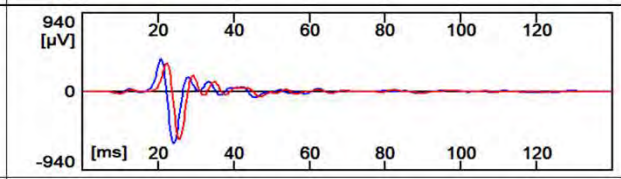
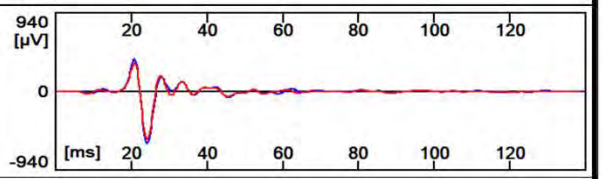
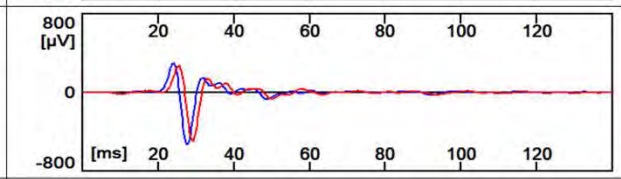
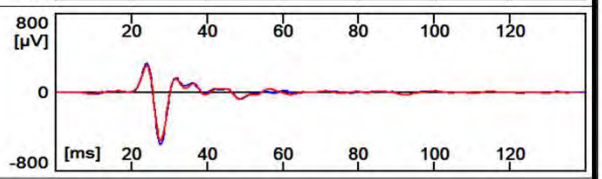
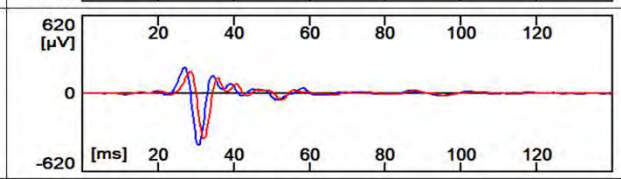
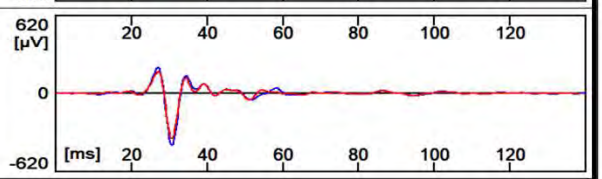
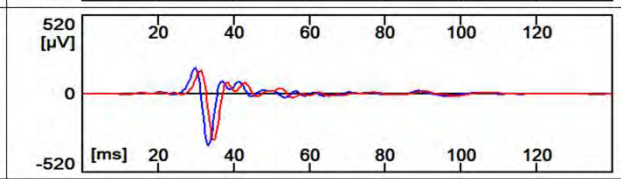
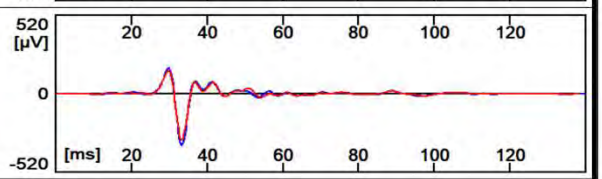
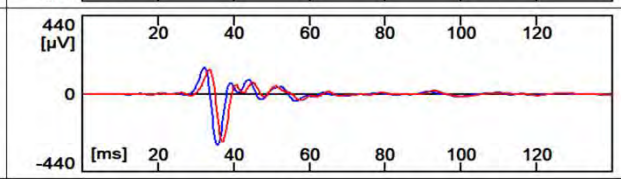
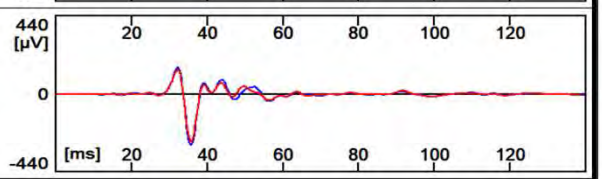
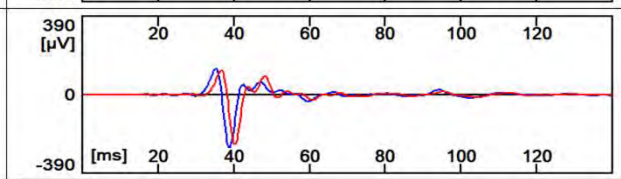
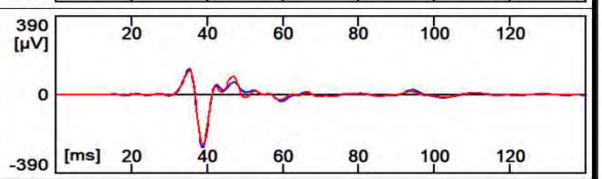
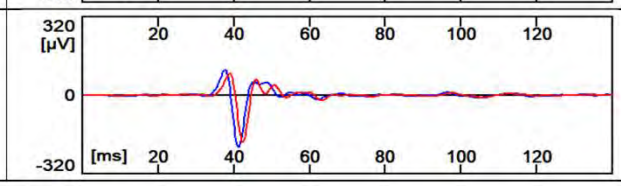
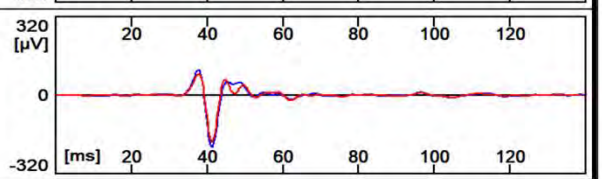
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 01

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 1.50 m Ds = 0.37 m Dt = 1.94 ms Vs = 191 m/s 28 JUN 2022 11:16:26		
Z = 2.50 m Ds = 0.44 m Dt = 1.67 ms Vs = 263 m/s 28 JUN 2022 11:25:27		
Z = 3.50 m Ds = 0.47 m Dt = 1.28 ms Vs = 364 m/s 28 JUN 2022 11:31:38		
Z = 4.50 m Ds = 0.48 m Dt = 1.50 ms Vs = 319 m/s 28 JUN 2022 11:38:21		
Z = 5.50 m Ds = 0.49 m Dt = 1.41 ms Vs = 344 m/s 28 JUN 2022 11:44:49		
Z = 6.50 m Ds = 0.49 m Dt = 1.44 ms Vs = 340 m/s 28 JUN 2022 11:53:37		
Z = 7.50 m Ds = 0.49 m Dt = 1.43 ms Vs = 344 m/s 28 JUN 2022 12:00:08		
Z = 8.50 m Ds = 0.49 m Dt = 1.34 ms Vs = 368 m/s 28 JUN 2022 12:07:43		
Z = 9.50 m Ds = 0.50 m Dt = 1.44 ms Vs = 344 m/s 28 JUN 2022 12:14:10		
Z = 10.50 m Ds = 0.50 m Dt = 1.12 ms Vs = 441 m/s 28 JUN 2022 12:19:56		

Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 01

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

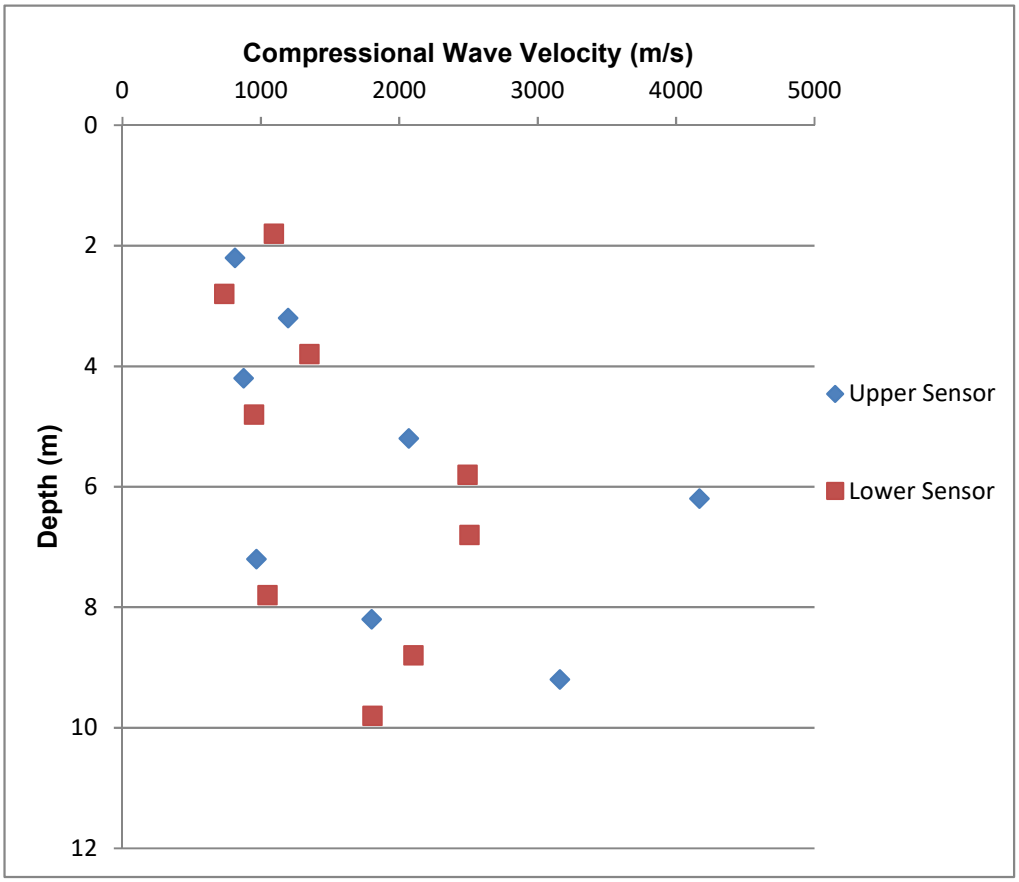
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	813
3.20	1197
4.20	875
5.20	2069
6.20	4168
7.20	967
8.20	1801
9.20	3159

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	1095
2.80	737
3.80	1352
4.80	951
5.80	2495
6.80	2509
7.80	1049
8.80	2104
9.80	1807

Seismic Cone Penetration Test Results



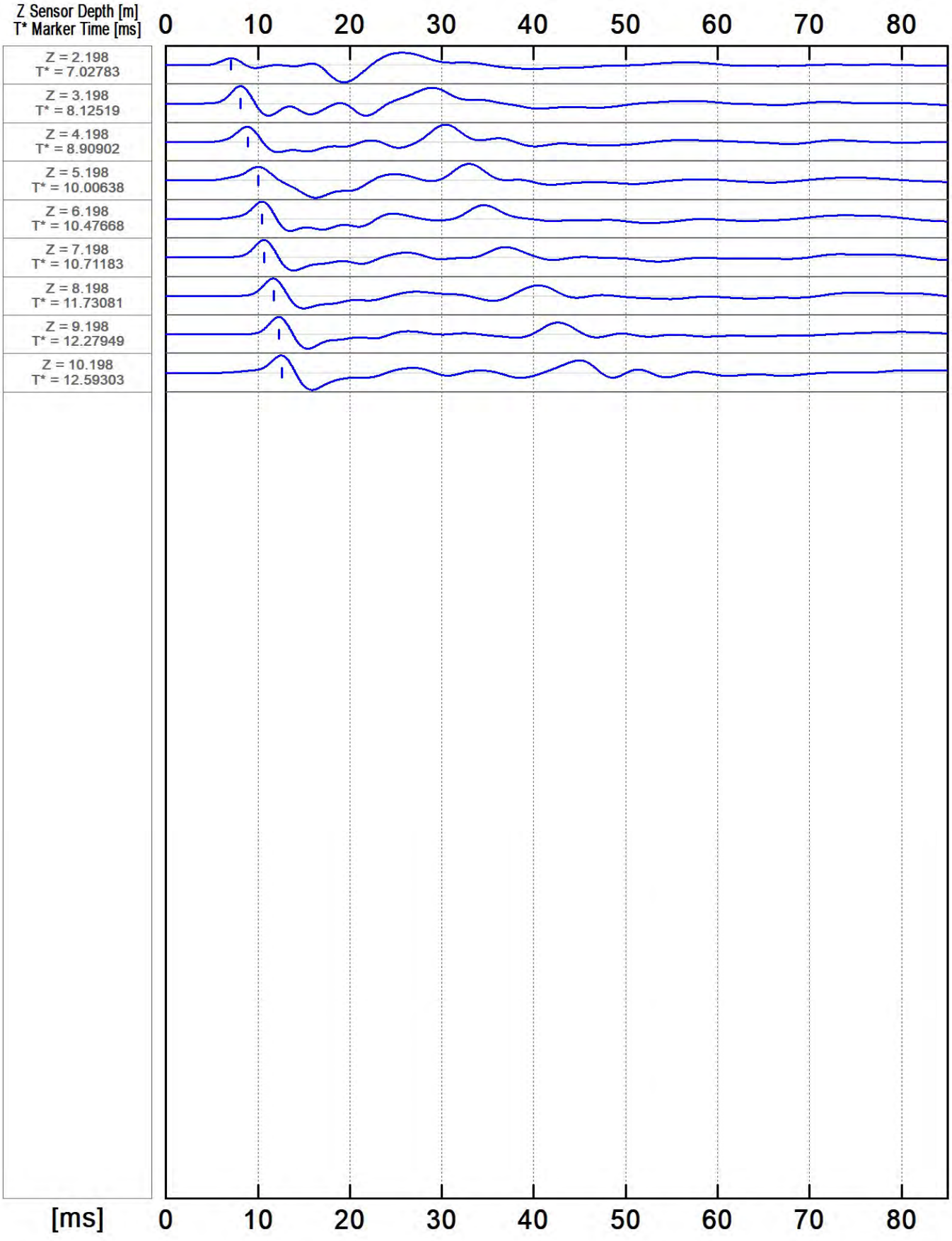
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.**	**SCPT 01**
Project No.	M2017-22		
Carried out for	Marriott Civils		

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

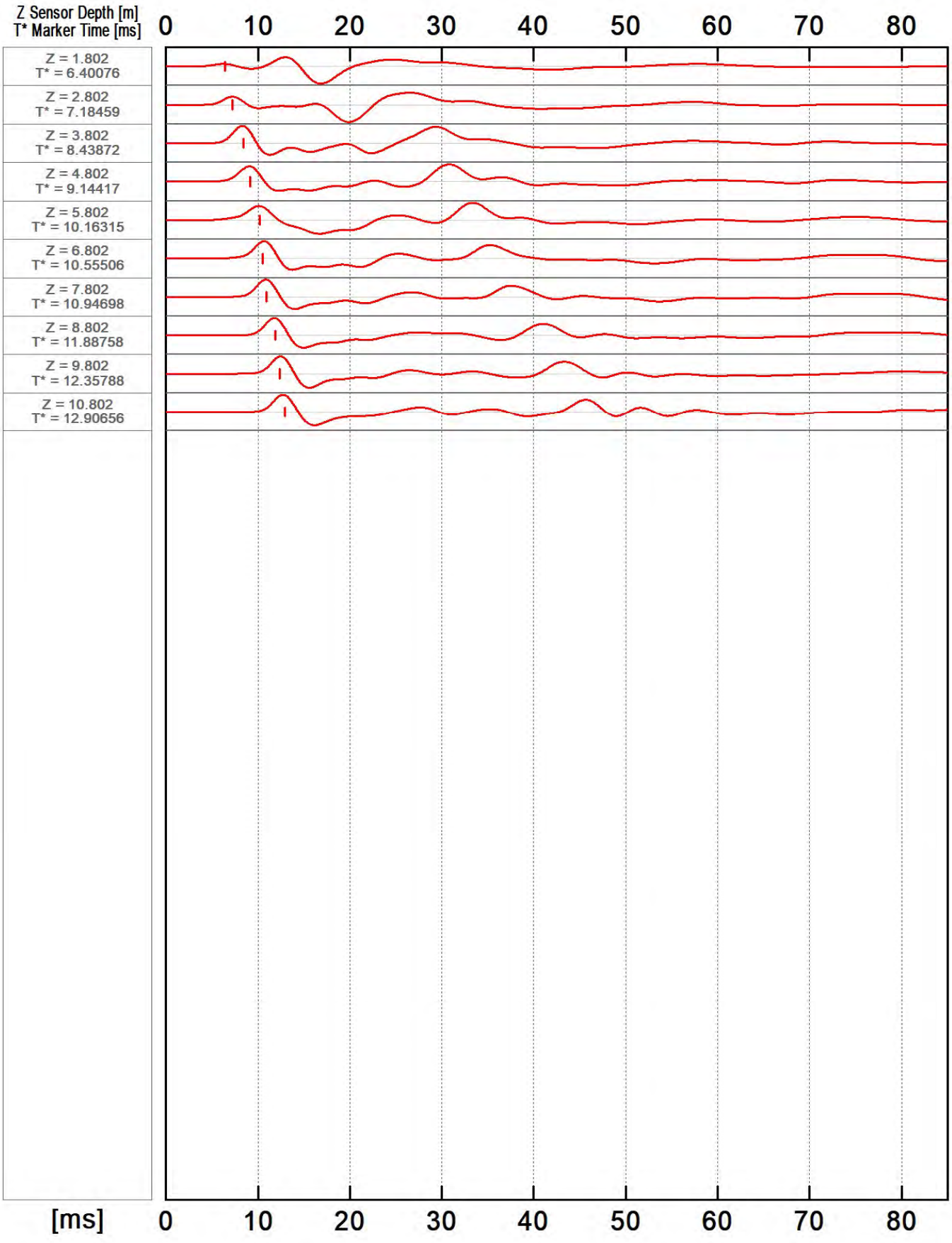
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 01

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 01

Seismic Cone Penetration Test Results

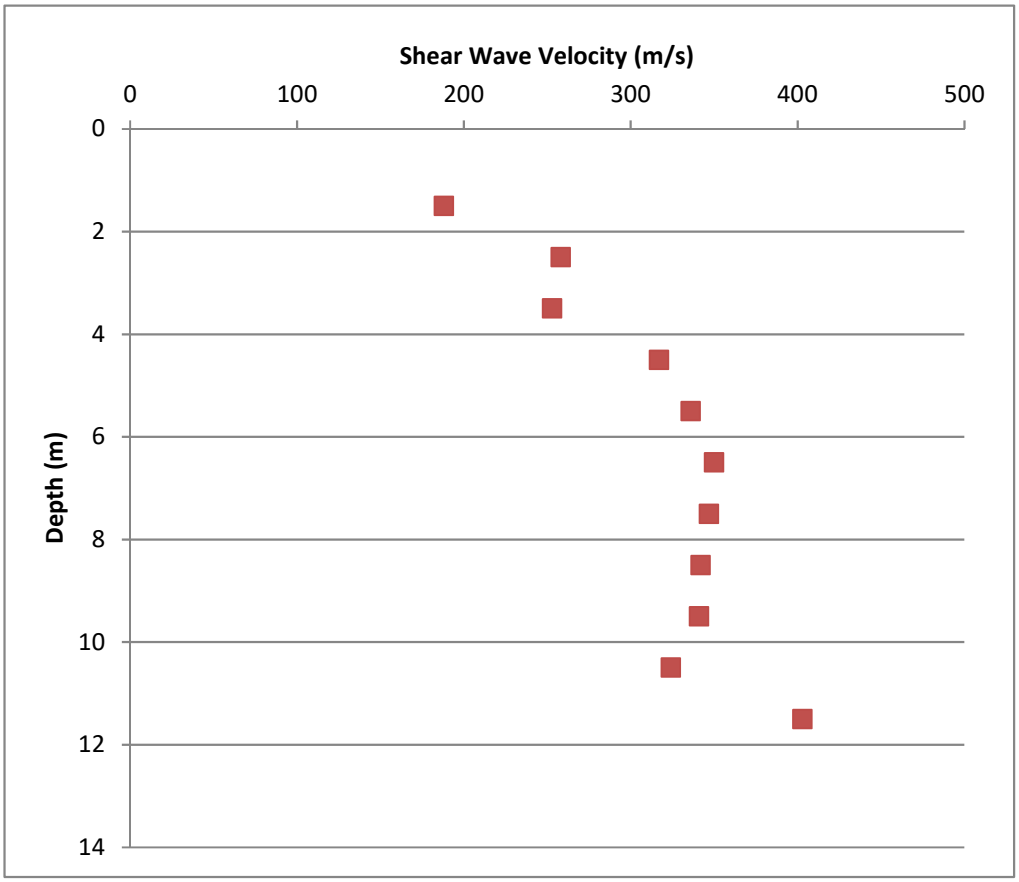
SOCOTEC

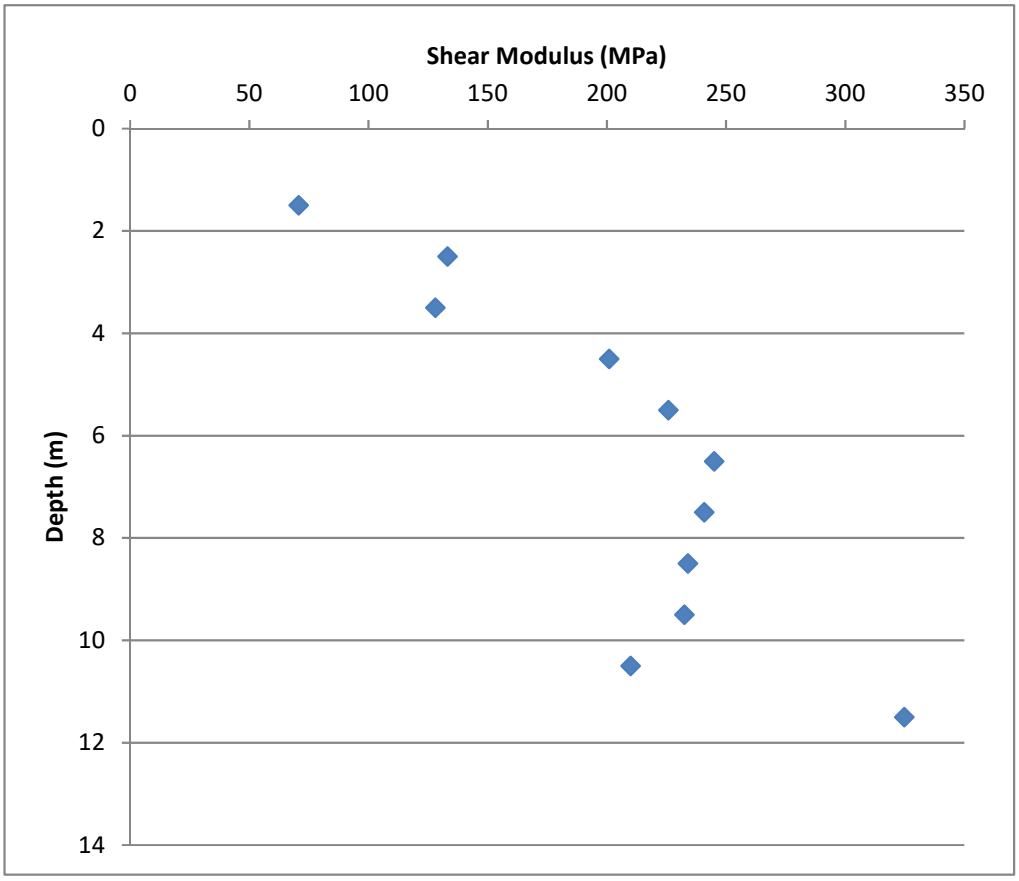
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	188	70.7
2.50	258	133.1
3.50	253	128.0
4.50	317	201.0
5.50	336	225.8
6.50	350	245.0
7.50	347	240.8
8.50	342	233.9
9.50	341	232.6
10.50	324	210.0
11.50	403	324.8

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





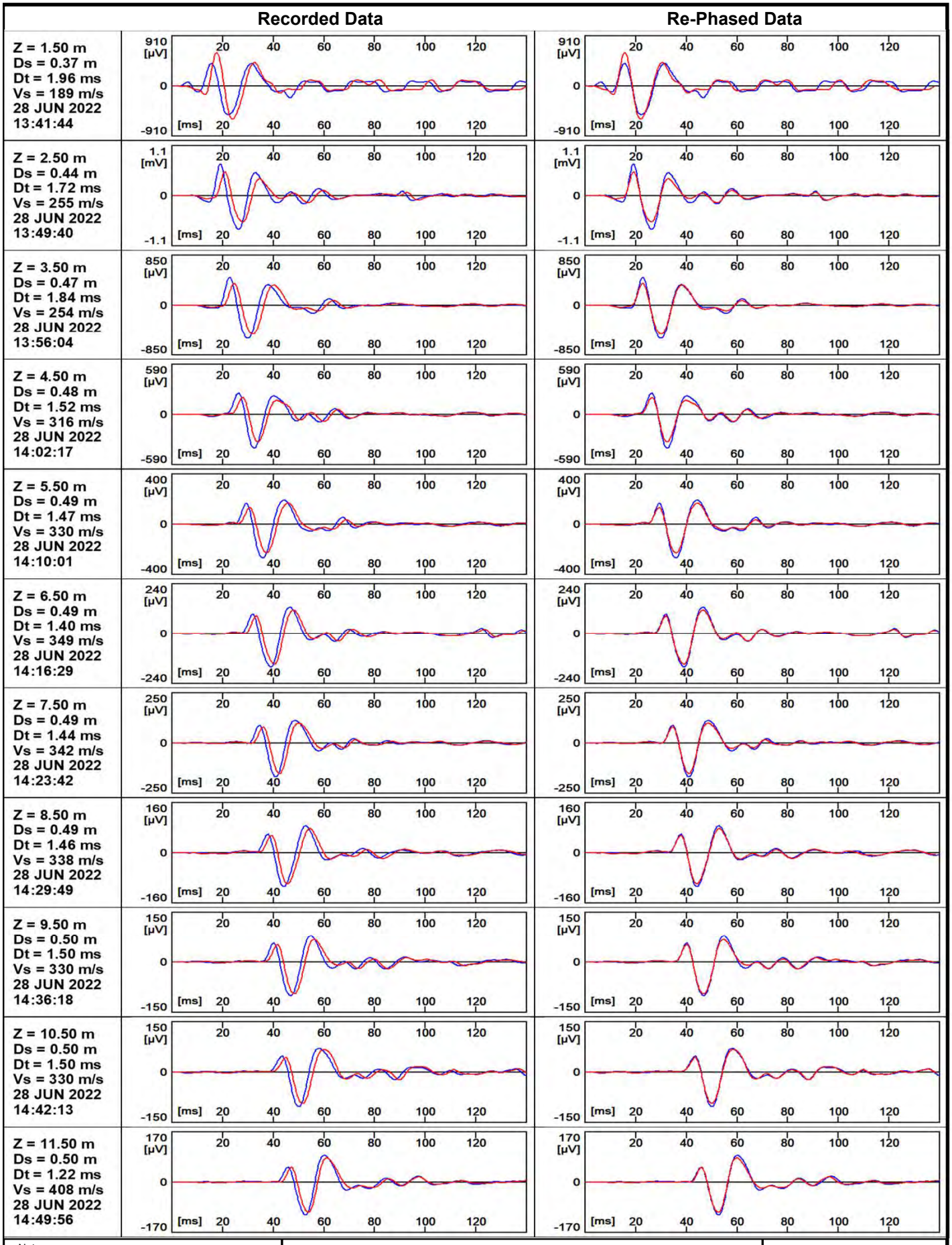
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 02

Seismic Cone Penetration Test Results

SOCOTEC



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 02

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

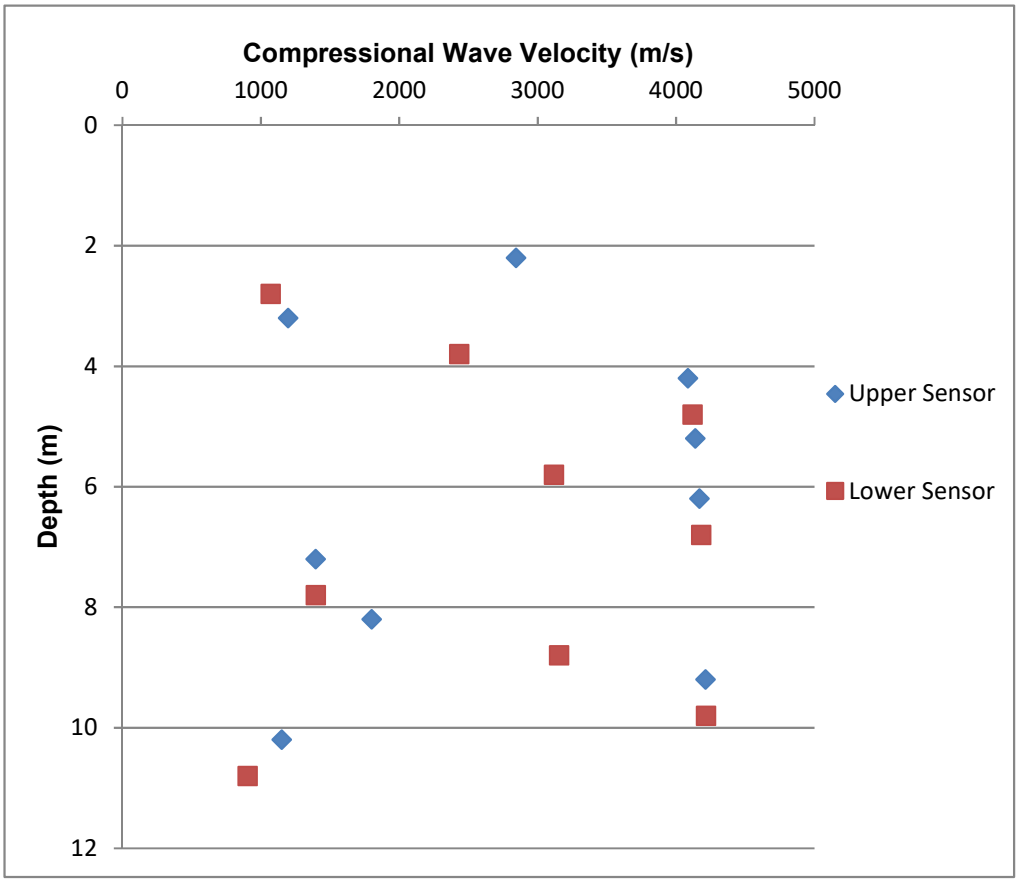
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	2844
3.20	1197
4.20	4085
5.20	4137
6.20	4168
7.20	1396
8.20	1801
9.20	4212
10.20	1151

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	-
2.80	1072
3.80	2433
4.80	4120
5.80	3118
6.80	4181
7.80	1399
8.80	3156
9.80	4216
10.80	905

Seismic Cone Penetration Test Results



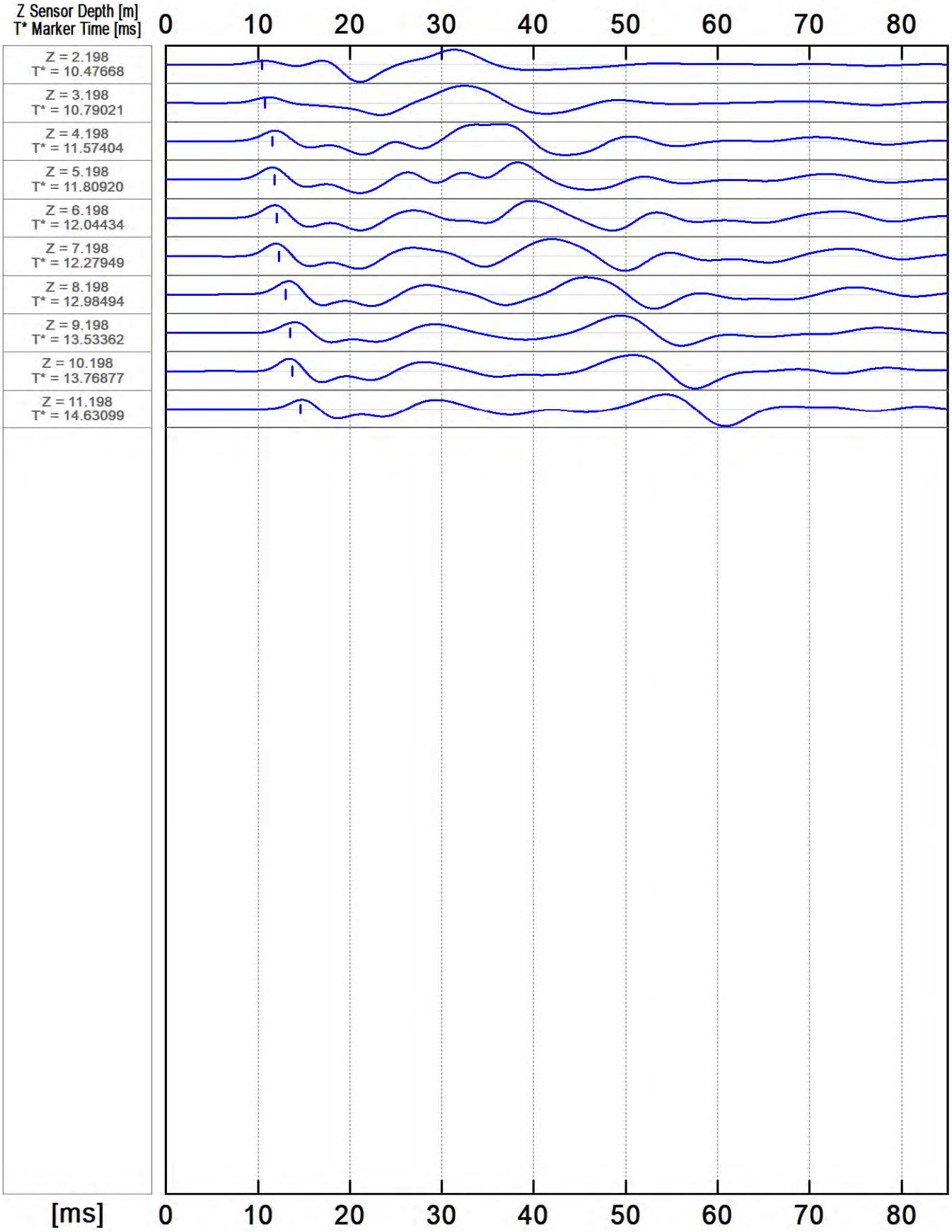
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.**	**SCPT 02**
Project No.	M2017-22		
Carried out for	Marriott Civils		

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms

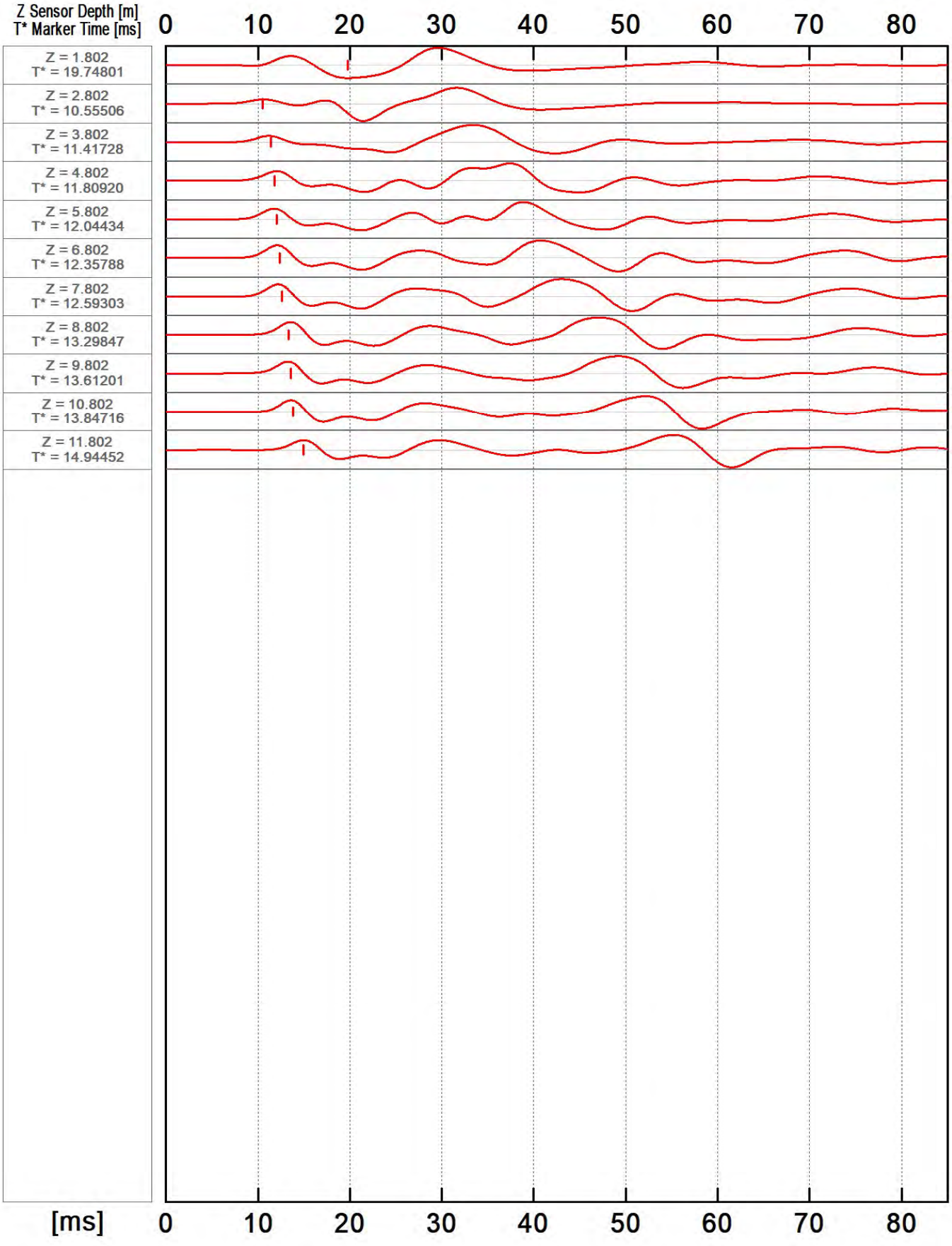


Notes:	**Project**	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.** SCPT 02
	Project No.	M2017-22	
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 02

Seismic Cone Penetration Test Results

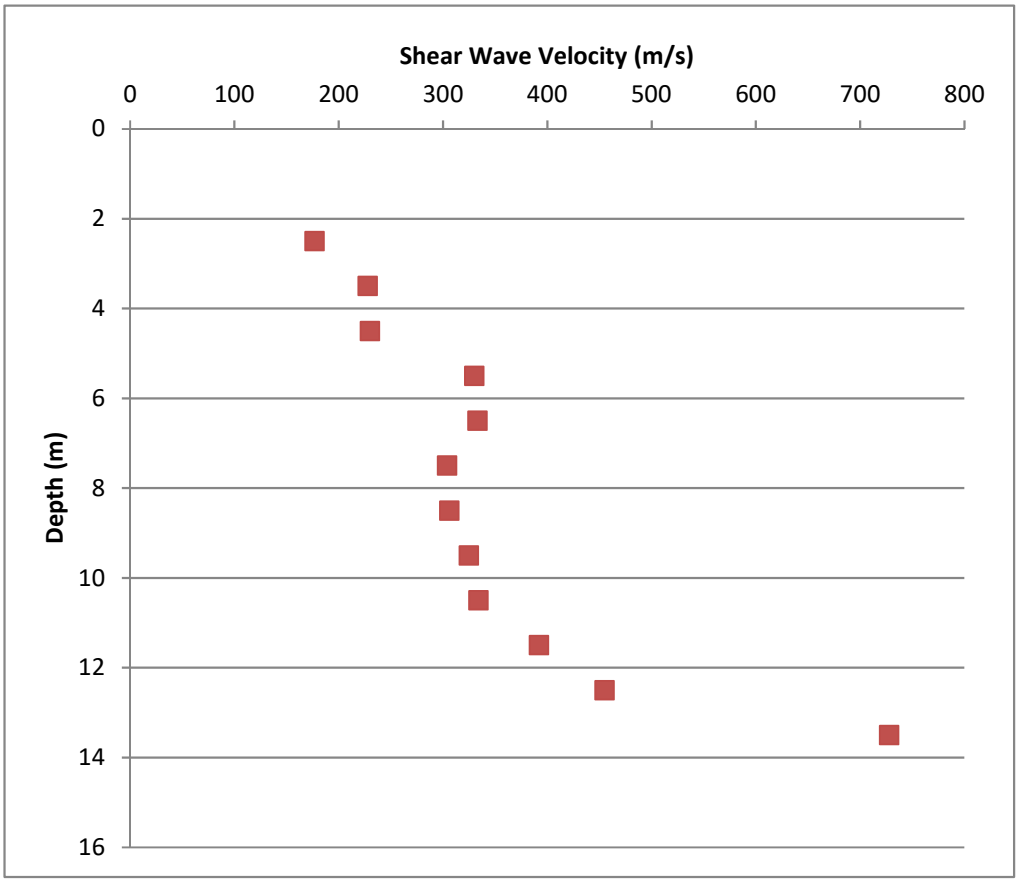
SOCOTEC

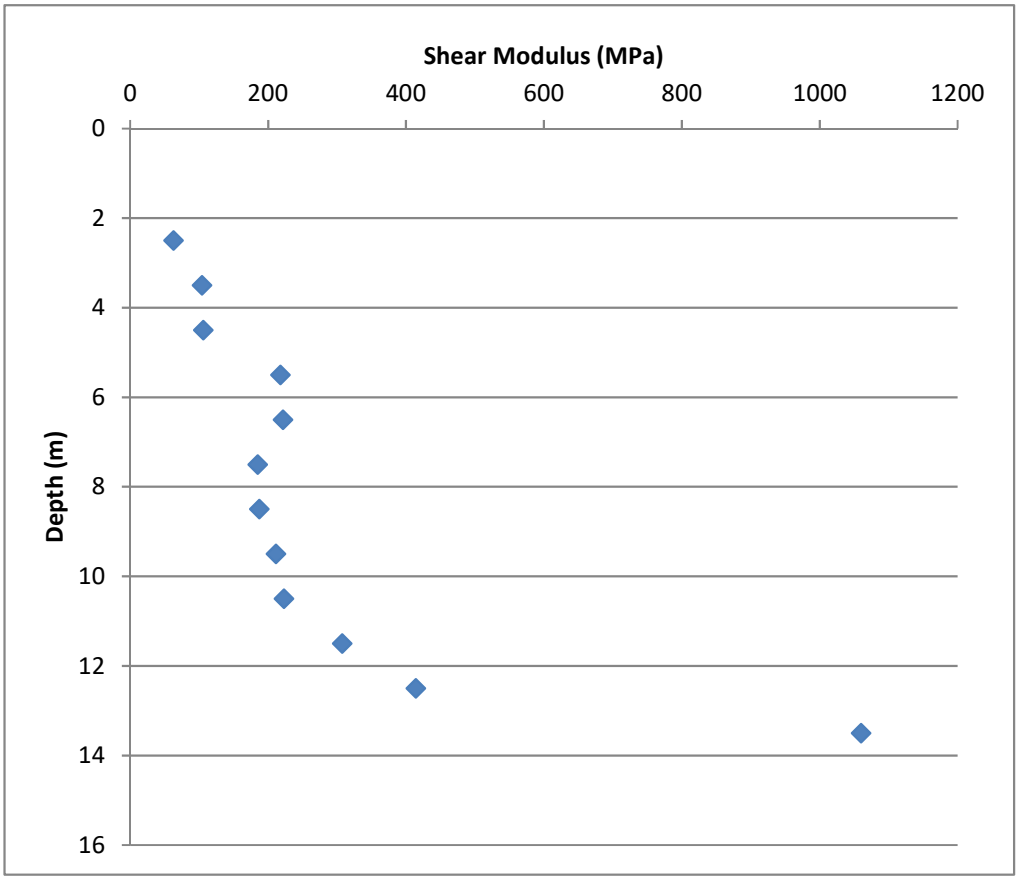
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
2.50	177	62.7
3.50	228	104.0
4.50	230	105.8
5.50	330	217.8
6.50	333	221.8
7.50	304	184.8
8.50	306	187.3
9.50	325	211.3
10.50	334	223.1
11.50	392	307.3
12.50	455	414.1
13.50	728	1060.0

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





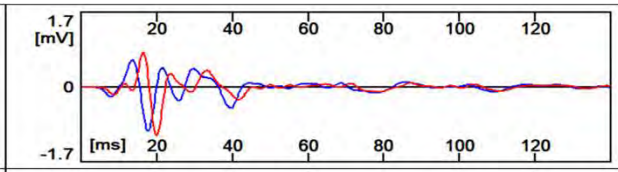
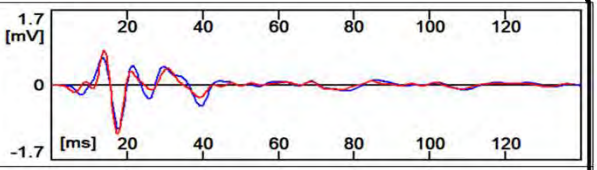
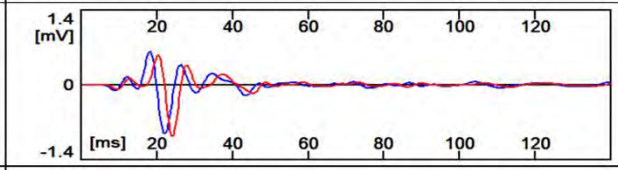
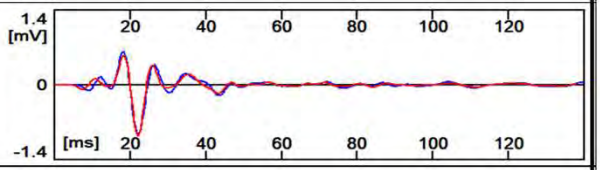
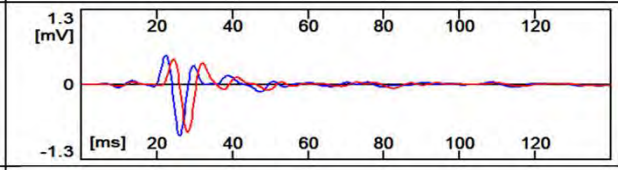
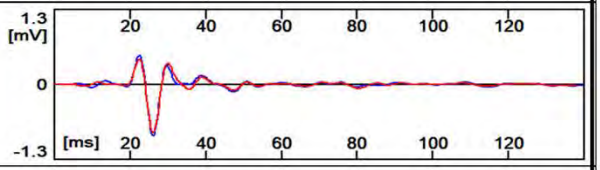
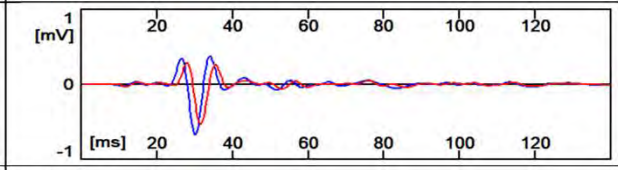
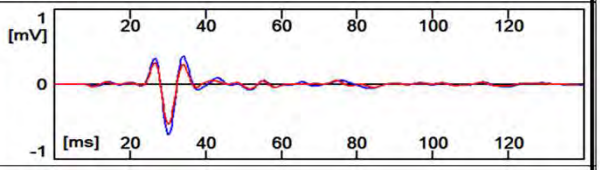
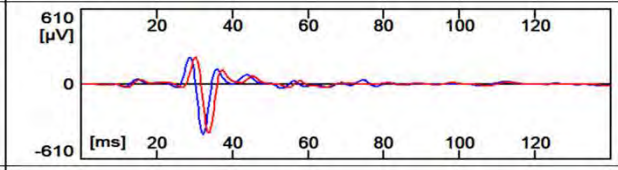
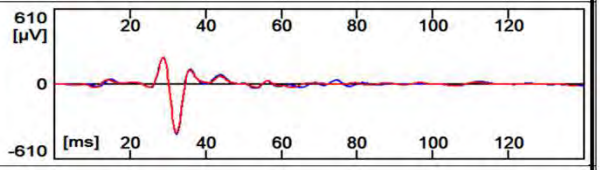
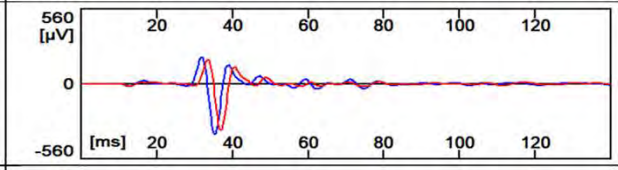
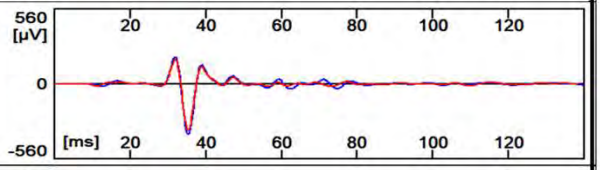
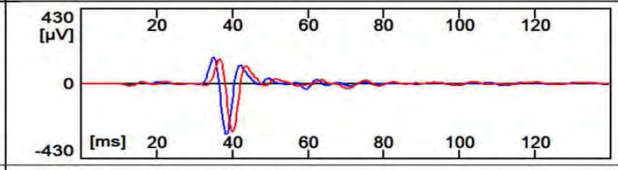
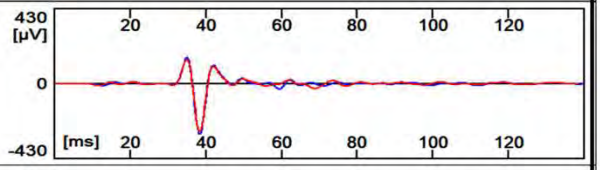
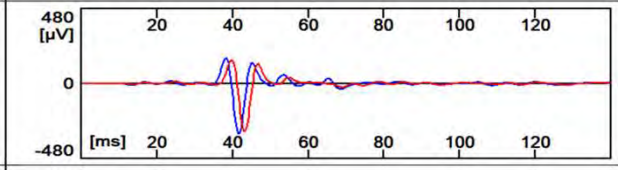
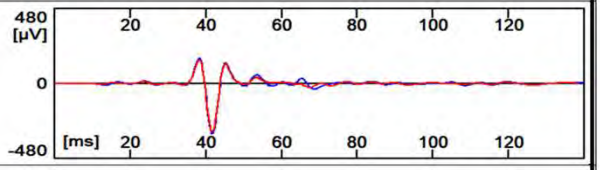
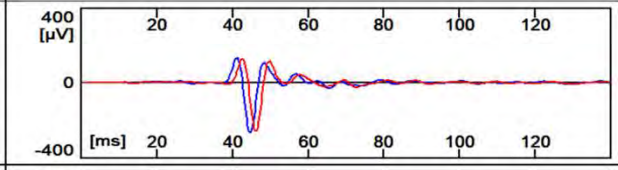
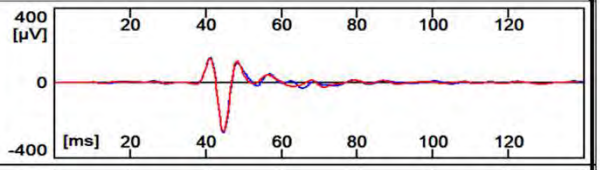
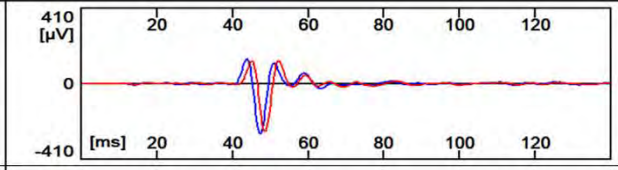
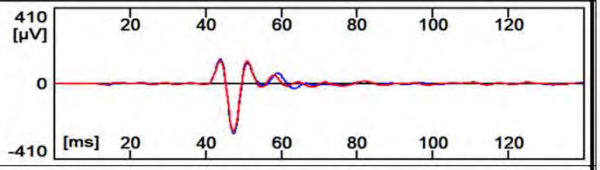
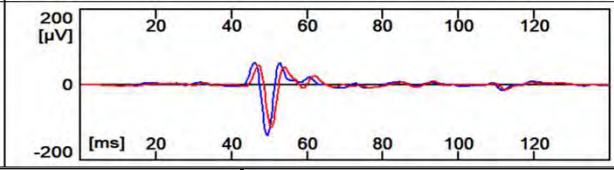
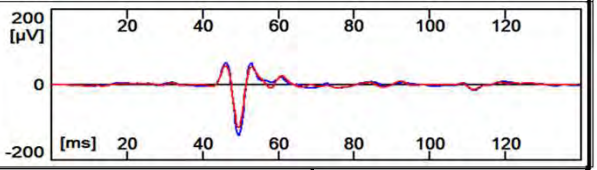
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 03

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 2.50 m Ds = 0.44 m Dt = 2.50 ms Vs = 176 m/s 23 JUN 2022 11:37:20		
Z = 3.50 m Ds = 0.47 m Dt = 2.05 ms Vs = 227 m/s 23 JUN 2022 11:42:41		
Z = 4.50 m Ds = 0.48 m Dt = 2.08 ms Vs = 231 m/s 23 JUN 2022 11:48:14		
Z = 5.50 m Ds = 0.49 m Dt = 1.47 ms Vs = 330 m/s 23 JUN 2022 11:53:49		
Z = 6.50 m Ds = 0.49 m Dt = 1.48 ms Vs = 331 m/s 23 JUN 2022 12:41:55		
Z = 7.50 m Ds = 0.49 m Dt = 1.63 ms Vs = 303 m/s 23 JUN 2022 12:46:40		
Z = 8.50 m Ds = 0.49 m Dt = 1.63 ms Vs = 303 m/s 23 JUN 2022 12:50:56		
Z = 9.50 m Ds = 0.50 m Dt = 1.54 ms Vs = 322 m/s 23 JUN 2022 12:56:31		
Z = 10.50 m Ds = 0.50 m Dt = 1.48 ms Vs = 335 m/s 23 JUN 2022 13:01:19		
Z = 11.50 m Ds = 0.50 m Dt = 1.26 ms Vs = 395 m/s 23 JUN 2022 13:06:31		
Z = 12.50 m Ds = 0.50 m Dt = 1.06 ms Vs = 468 m/s 23 JUN 2022 13:10:56		

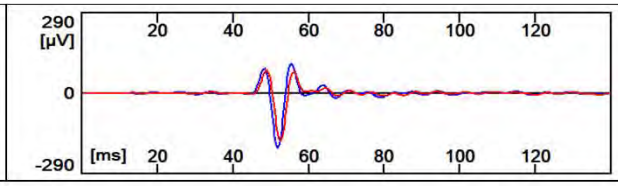
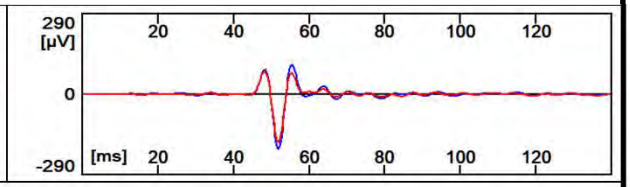
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 03

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 13.50 m Ds = 0.50 m Dt = 0.69 ms Vs = 724 m/s 23 JUN 2022 13:16:35		

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

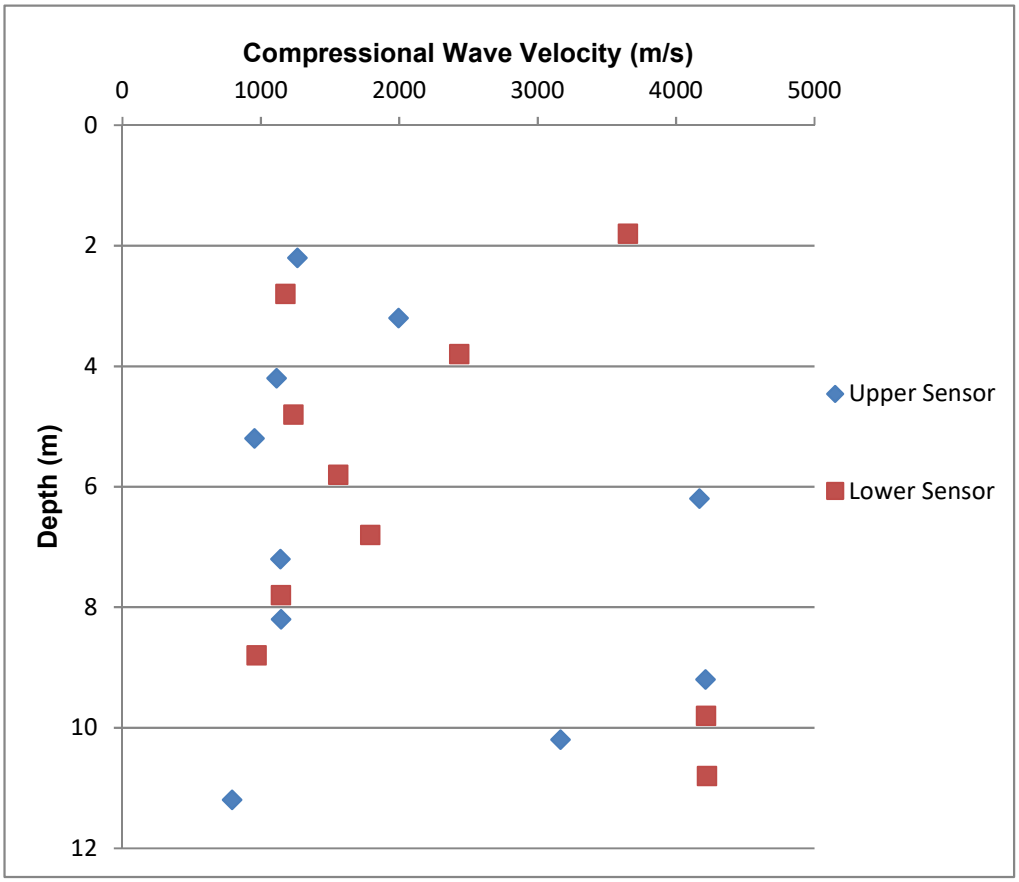
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	1264
3.20	1995
4.20	1114
5.20	955
6.20	4168
7.20	1142
8.20	1146
9.20	4212
10.20	3164
11.20	792
12.20	

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	3652
2.80	1179
3.80	2433
4.80	1236
5.80	1559
6.80	1792
7.80	1145
8.80	971
9.80	4217
10.80	4223
11.80	976
12.80	

Seismic Cone Penetration Test Results

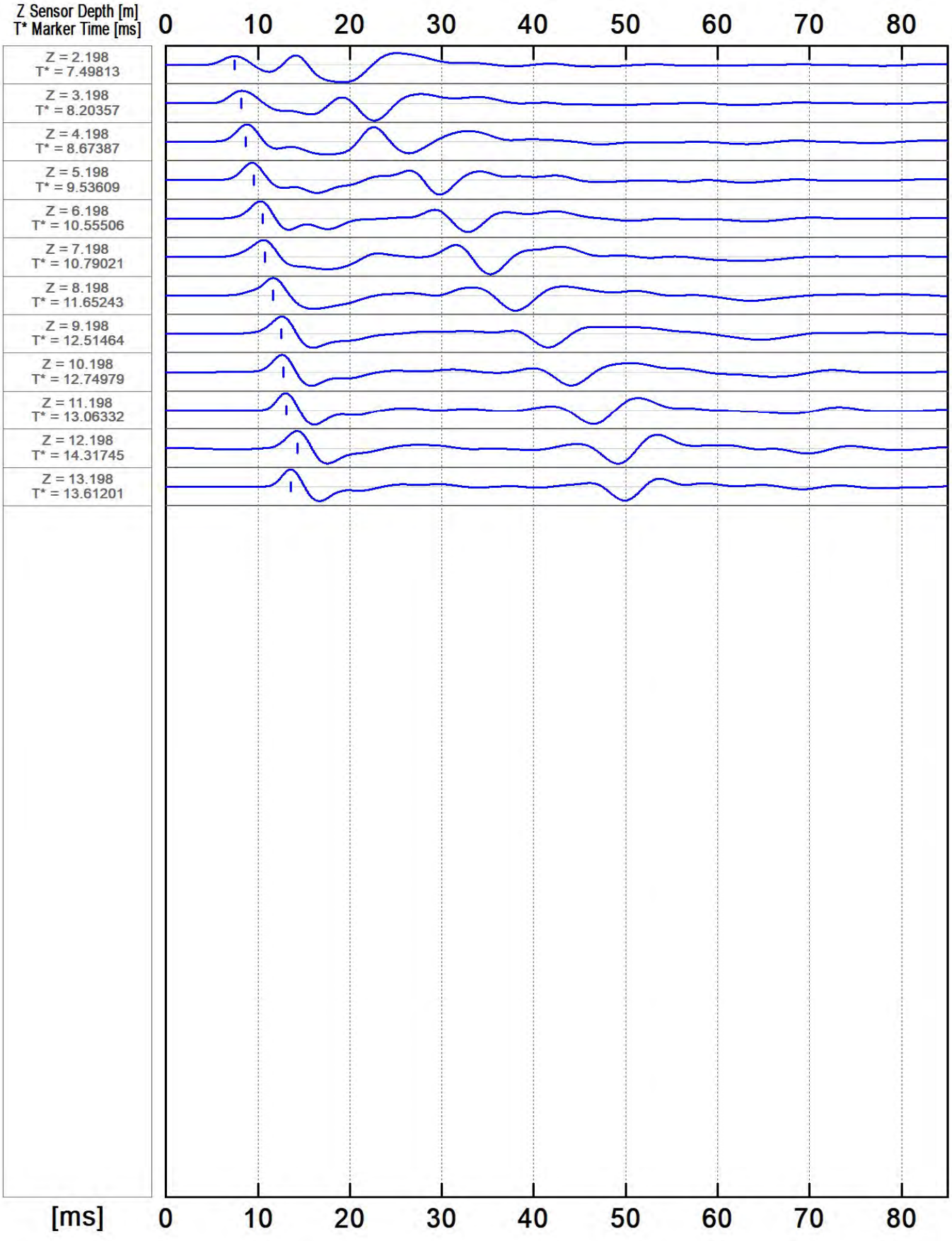


Notes:	**Project**	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.** **SCPT 03**
	Project No.	M2017-22	
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

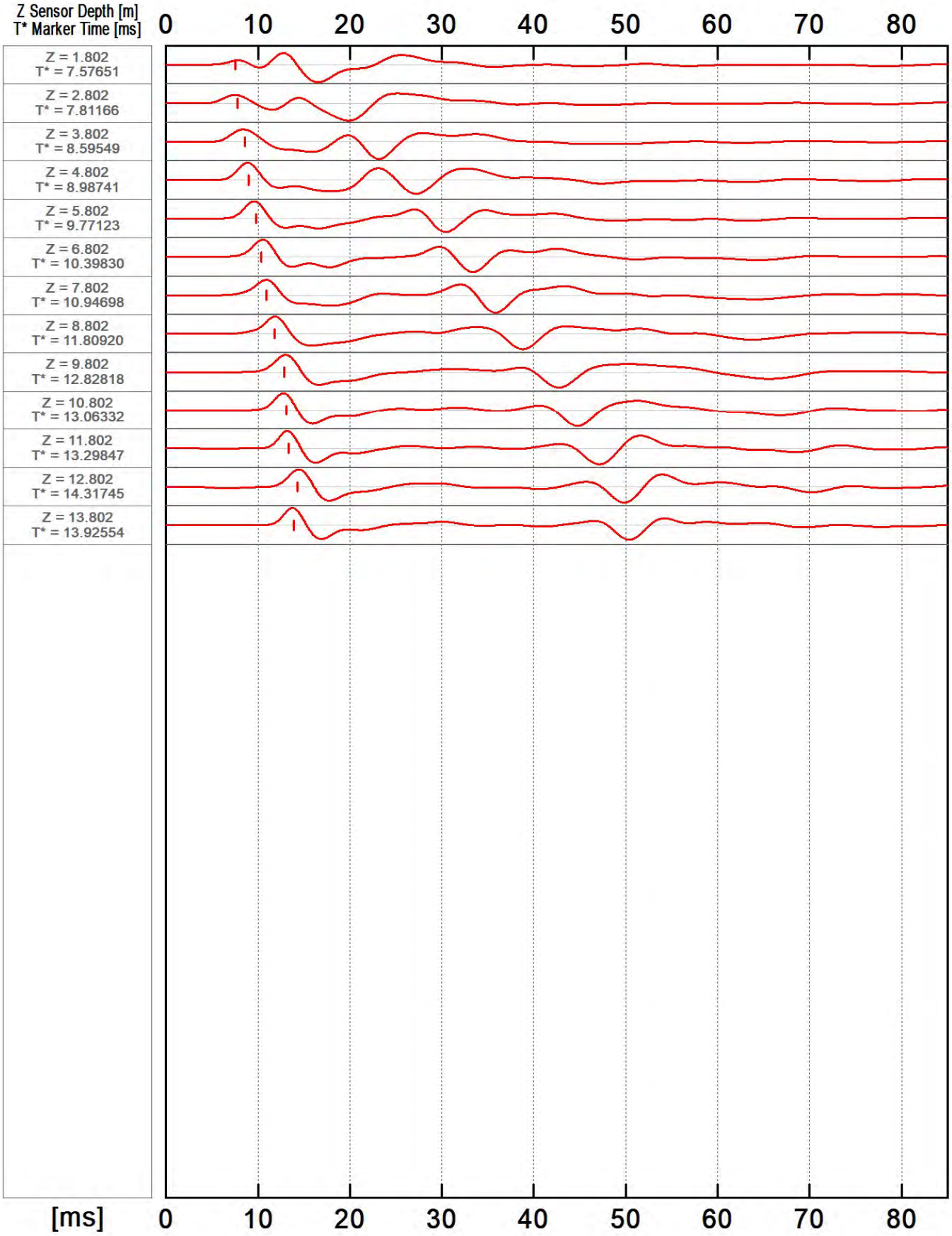
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 03

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 03

Seismic Cone Penetration Test Results

SOCOTEC

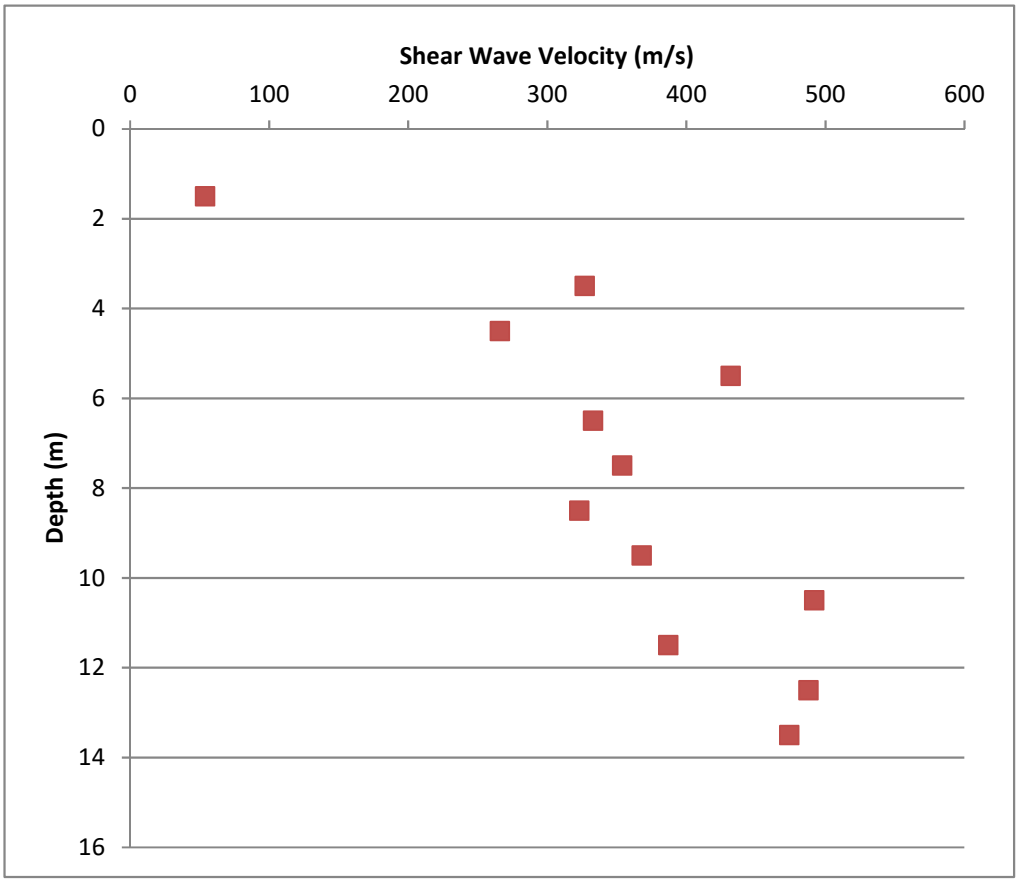
Shear Wave Velocity Data

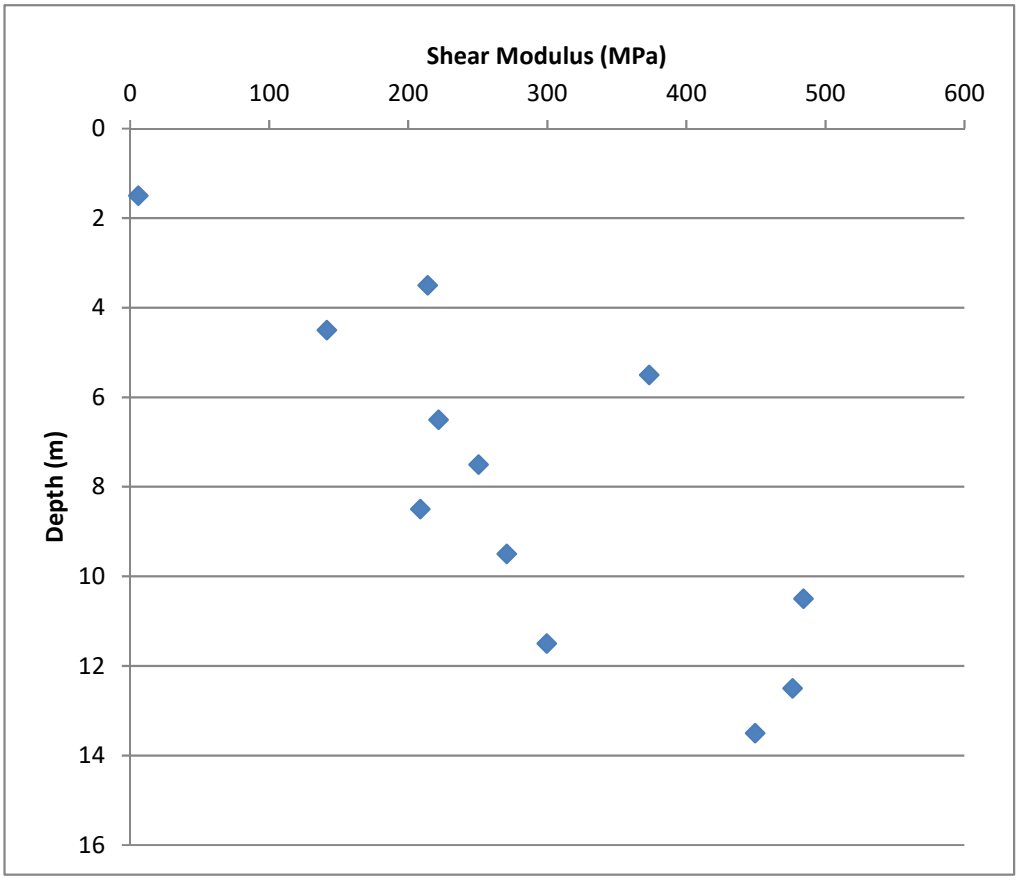
Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	54	5.8
3.50	327	213.9
4.50	266	141.5
5.50	432	373.2
6.50	333	221.8
7.50	354	250.6
8.50	323	208.7
9.50	368	270.8
10.50	492	484.1
11.50	387	299.5
12.50	488	476.3
13.50	474	449.4

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results

SOCOTEC

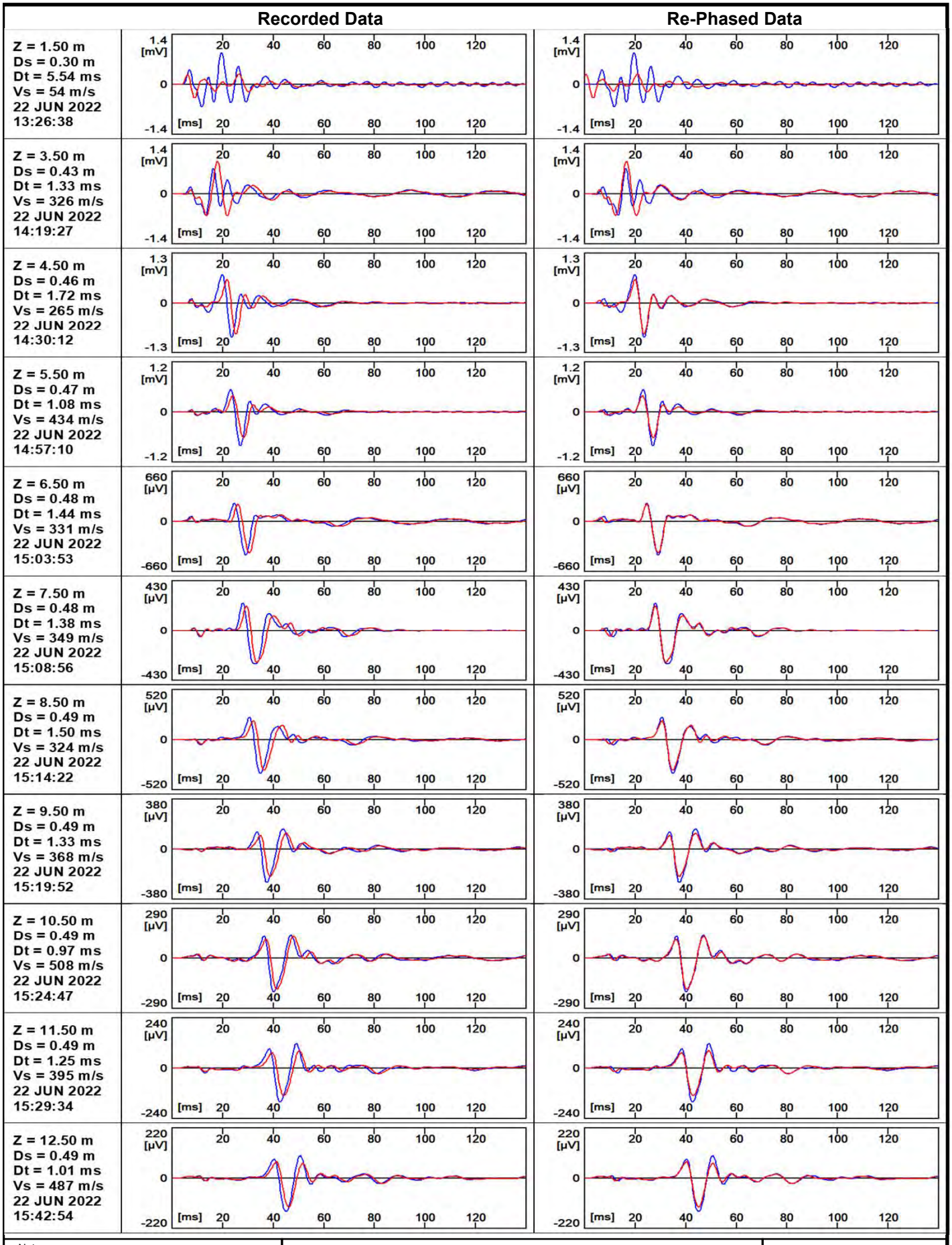




Notes:			
	Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.**
	Project No.	M2017-22	**SCPT 04**
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC



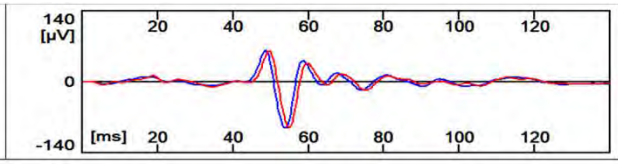
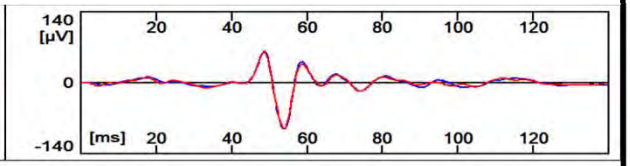
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 04

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 13.50 m Ds = 0.49 m Dt = 1.04 ms Vs = 474 m/s 23 JUN 2022 9:36:36		

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

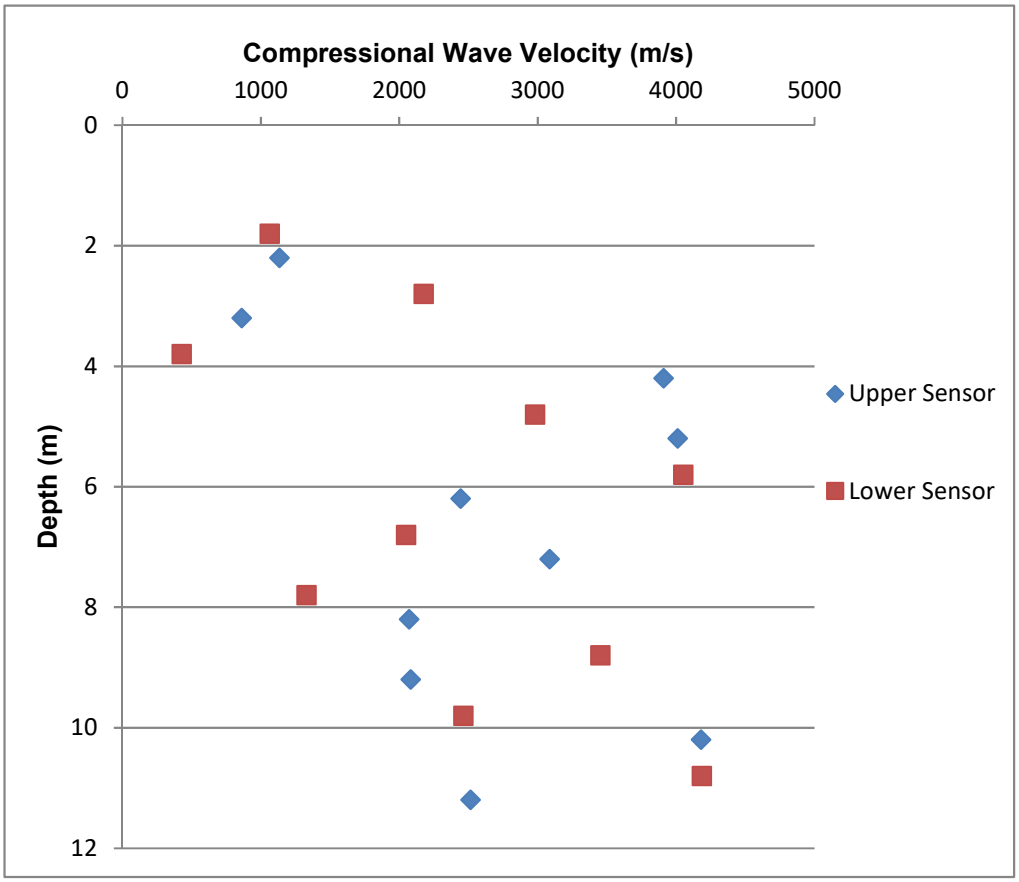
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	1134
3.20	862
4.20	3910
5.20	4011
6.20	2444
7.20	3087
8.20	2072
9.20	2082
10.20	4180
11.20	2515
12.20	2100

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	1064
2.80	2178
3.80	428
4.80	2983
5.80	4052
6.80	2050
7.80	1332
8.80	3453
9.80	2465
10.80	4187
11.80	3500
12.80	1281

Seismic Cone Penetration Test Results

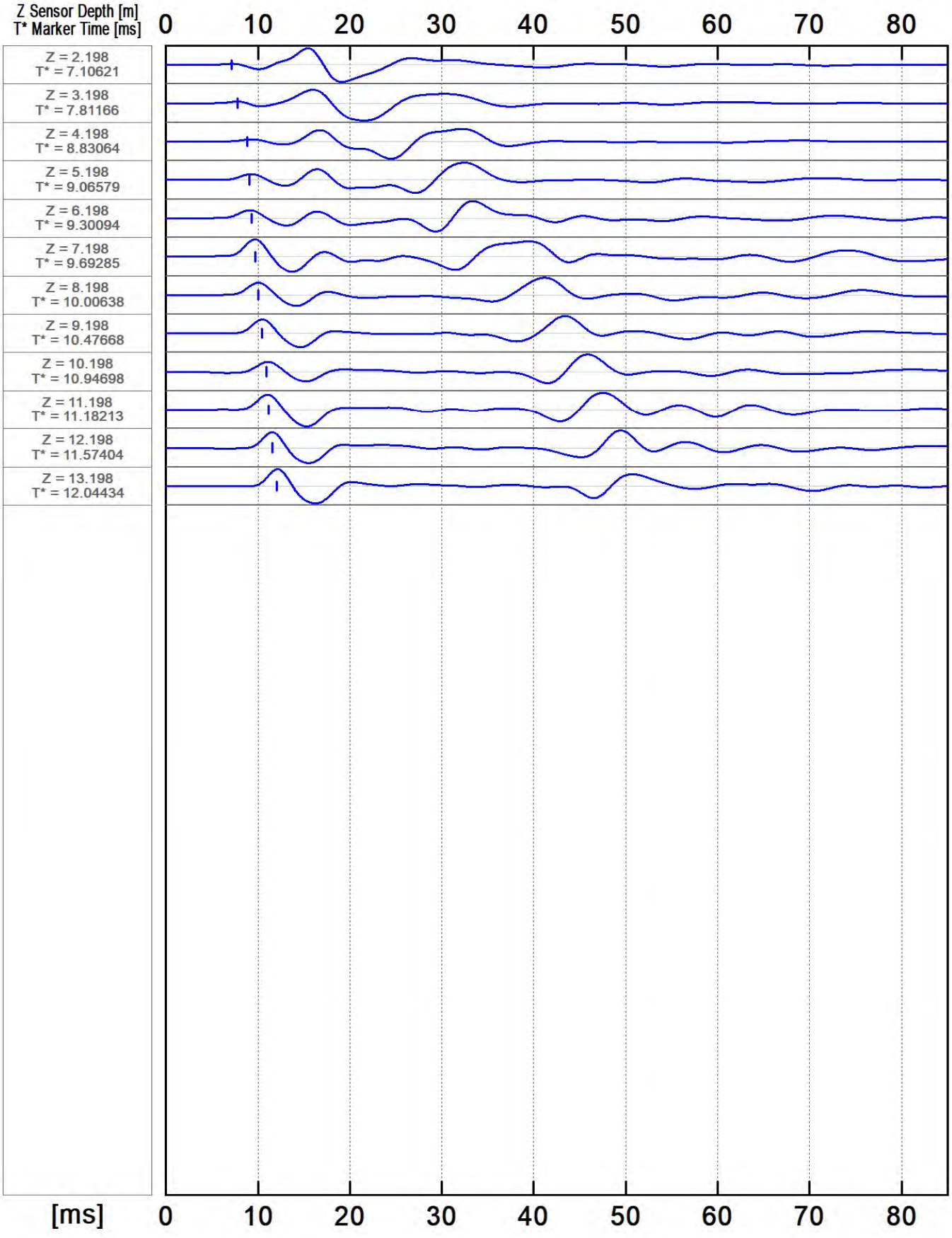


Notes:	Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	CPT No.
	Project No.	M2017-22	SCPT 04
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

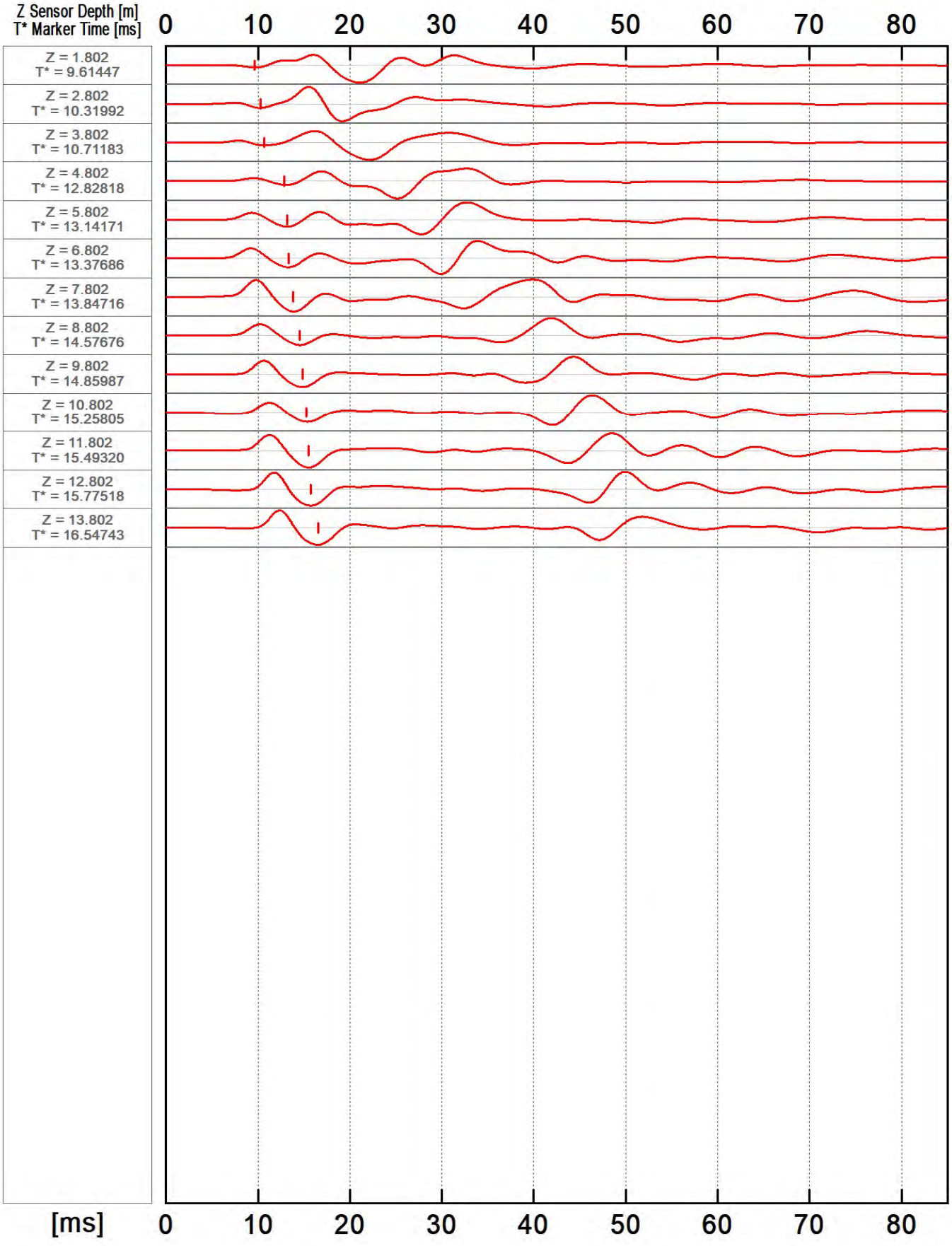
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 04

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 04

Seismic Cone Penetration Test Results

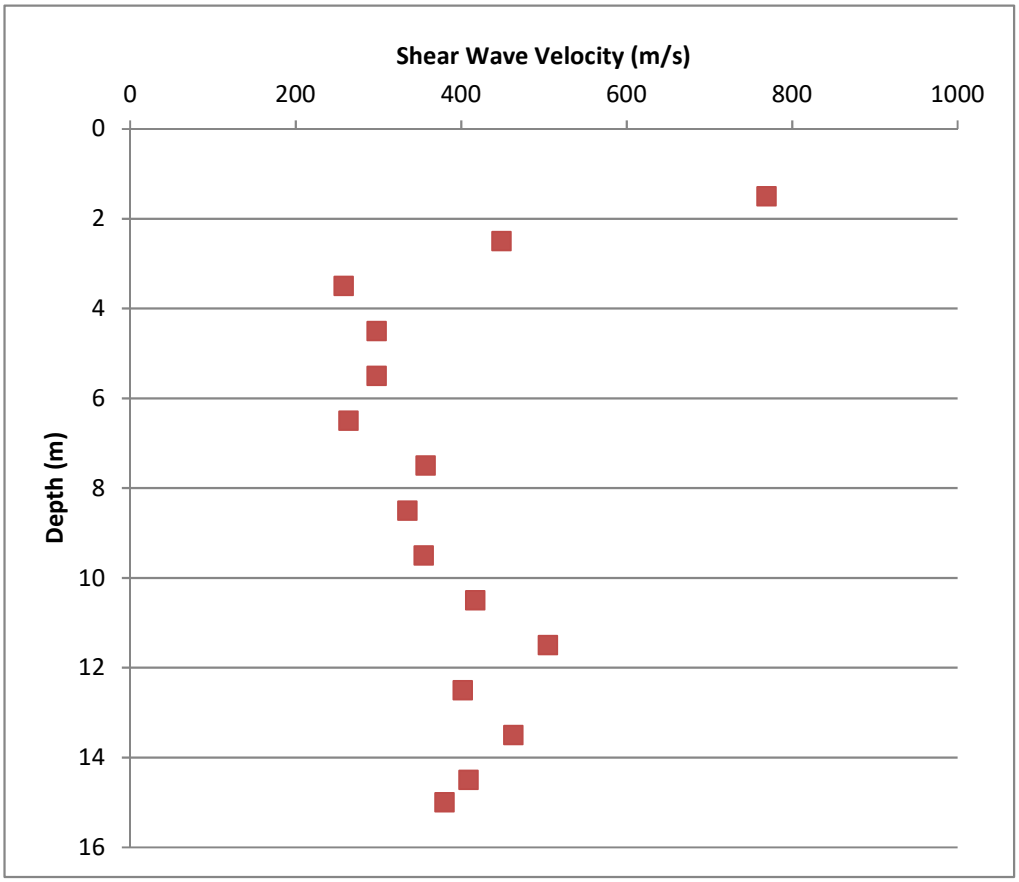
SOCOTEC

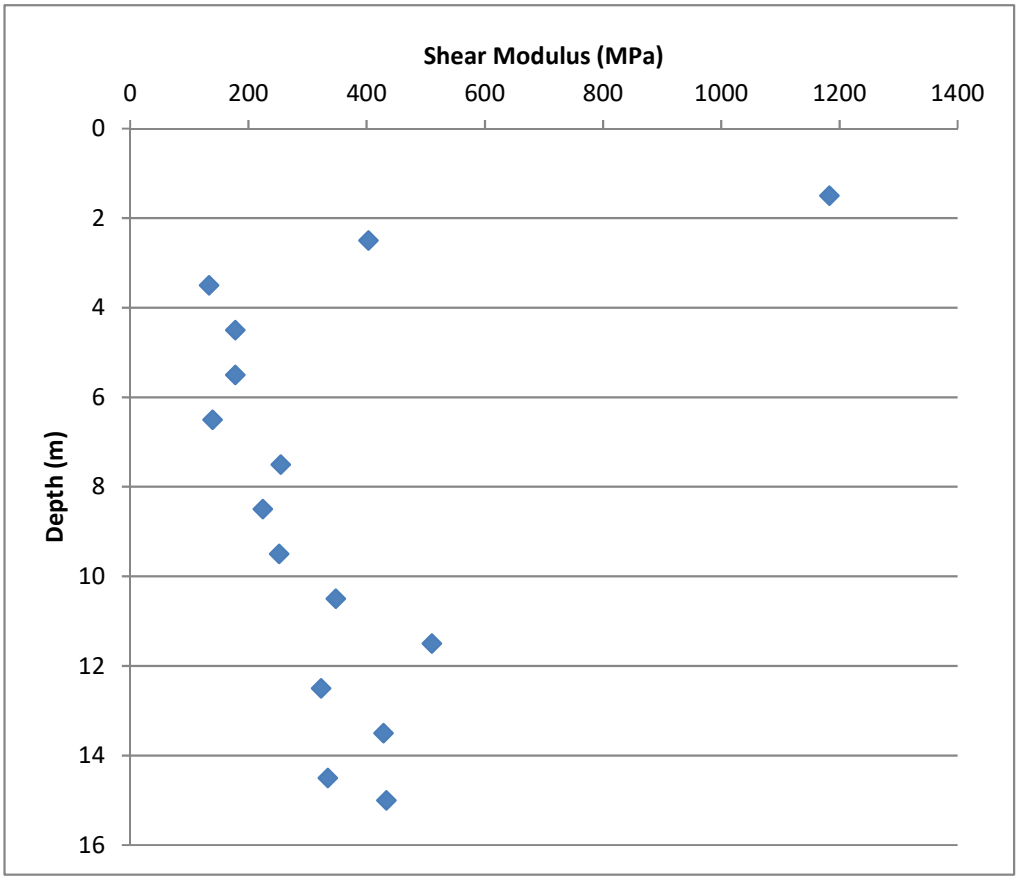
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	769	1182.7
2.50	449	403.2
3.50	258	133.1
4.50	298	177.6
5.50	298	177.6
6.50	264	139.4
7.50	357	254.9
8.50	335	224.5
9.50	355	252.1
10.50	417	347.8
11.50	505	510.1
12.50	402	323.2
13.50	463	428.7
14.50	409	334.6
15.00	380	433.2

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





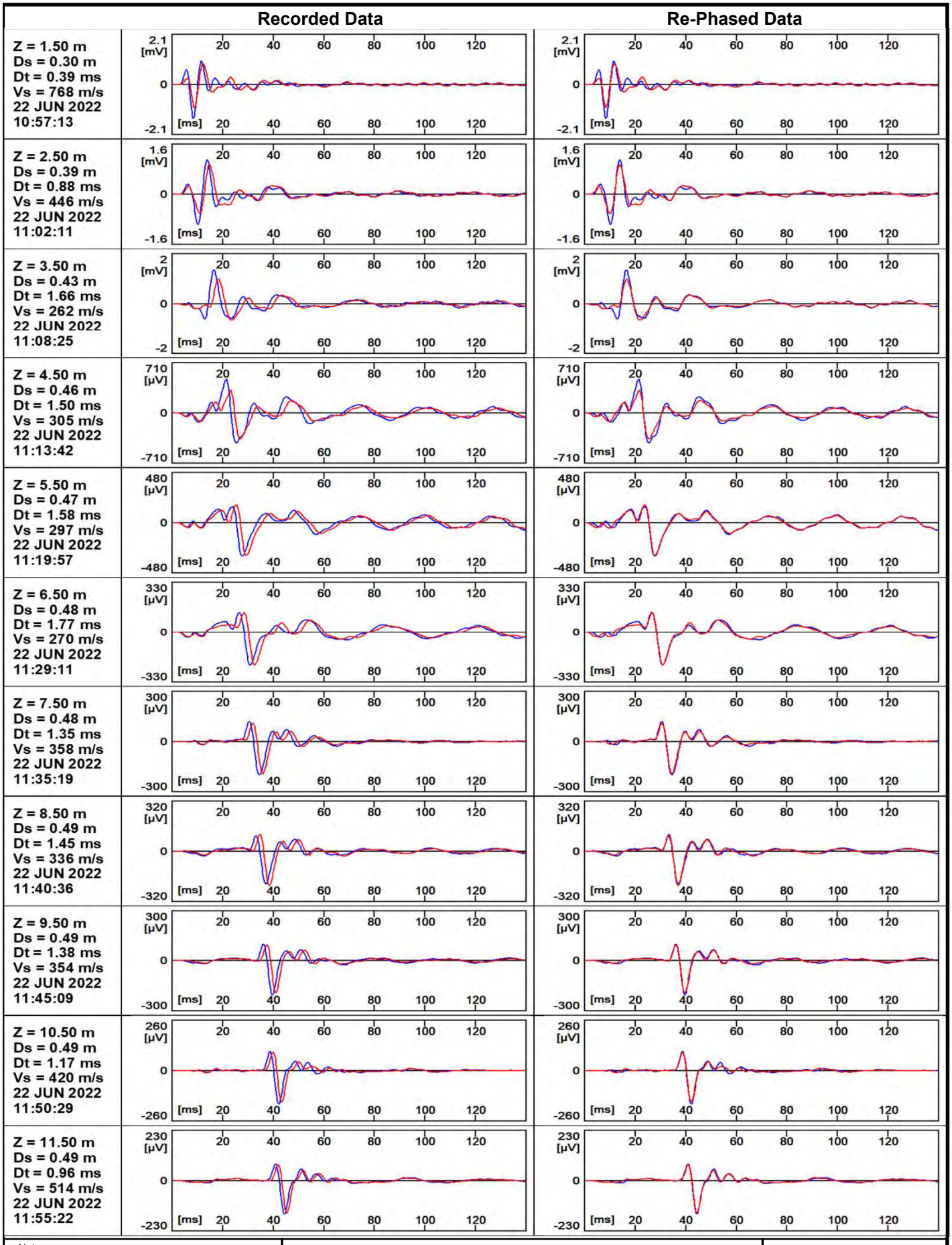
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 05

Seismic Cone Penetration Test Results

SOCOTEC



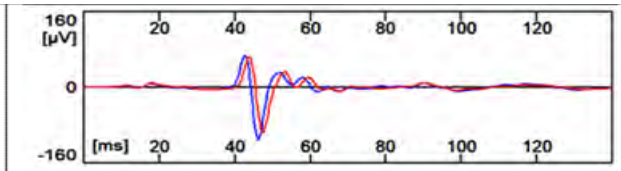
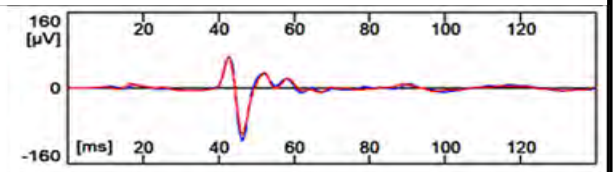
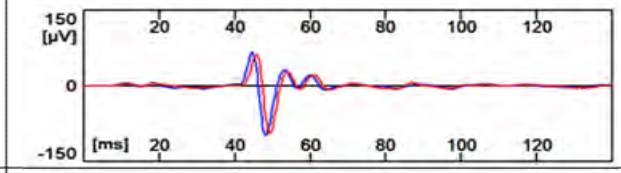
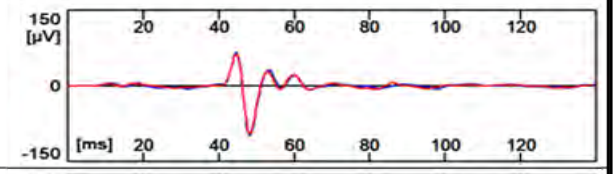
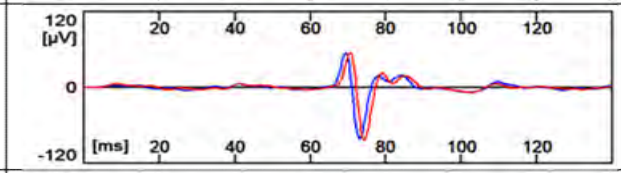
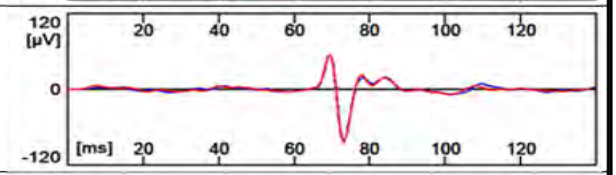
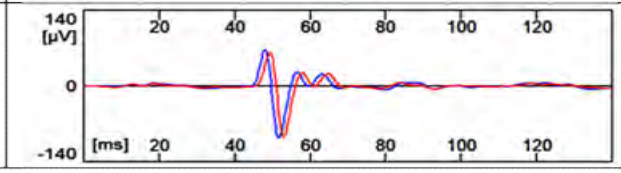
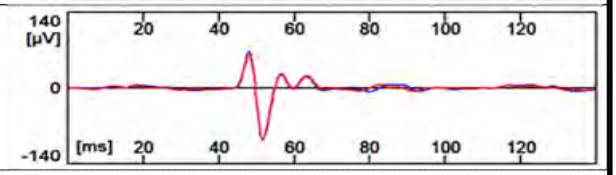
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 05

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 12.50 m Ds = 0.49 m Dt = 1.20 ms Vs = 411 m/s 22 JUN 2022 12:00:27		
Z = 13.50 m Ds = 0.49 m Dt = 1.08 ms Vs = 460 m/s 22 JUN 2022 12:05:18		
Z = 14.50 m Ds = 0.50 m Dt = 1.20 ms Vs = 413 m/s 22 JUN 2022 12:10:01		
Z = 15.00 m Ds = 0.50 m Dt = 1.28 ms Vs = 388 m/s 22 JUN 2022 12:15:51		

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

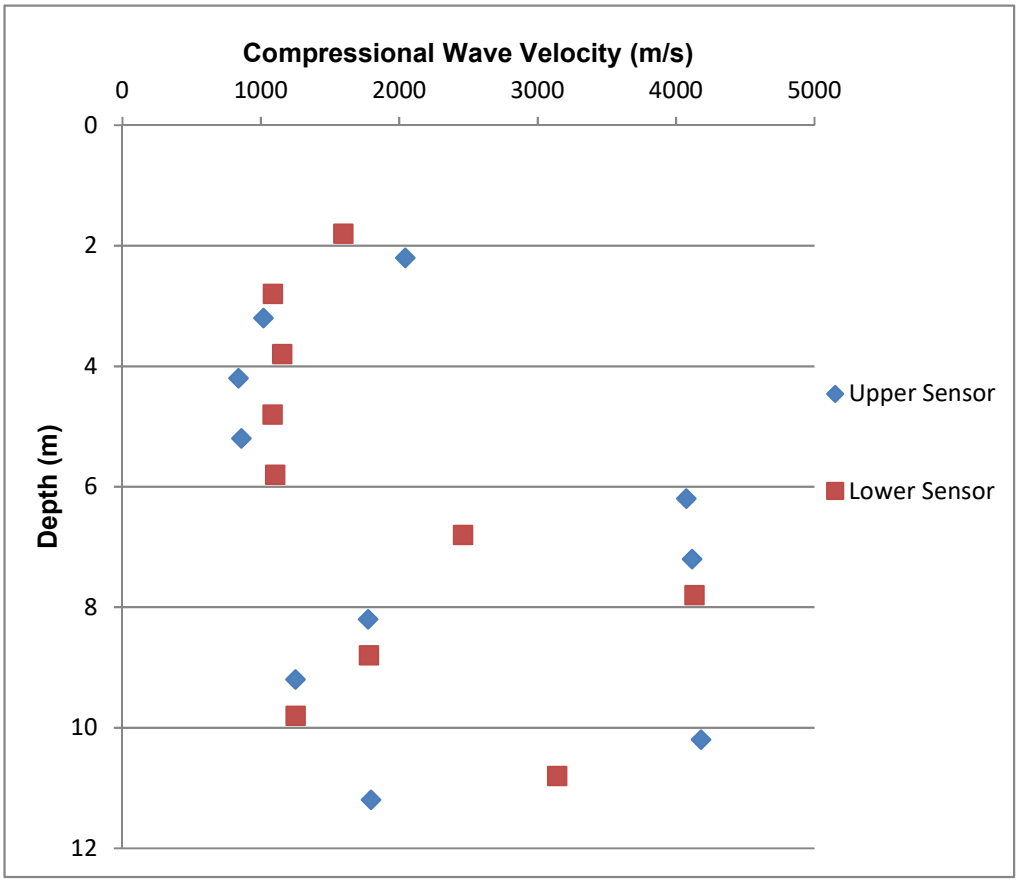
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	2042
3.20	1019
4.20	838
5.20	860
6.20	4074
7.20	4115
8.20	1776
9.20	1249
10.20	4180
11.20	1796
12.20	1146
13.20	4208
14.20	1264

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	1596
2.80	1089
3.80	1156
4.80	1085
5.80	1105
6.80	2461
7.80	4134
8.80	1782
9.80	1252
10.80	3141
11.80	1574
12.80	1402
13.80	4212
14.80	2108

Seismic Cone Penetration Test Results

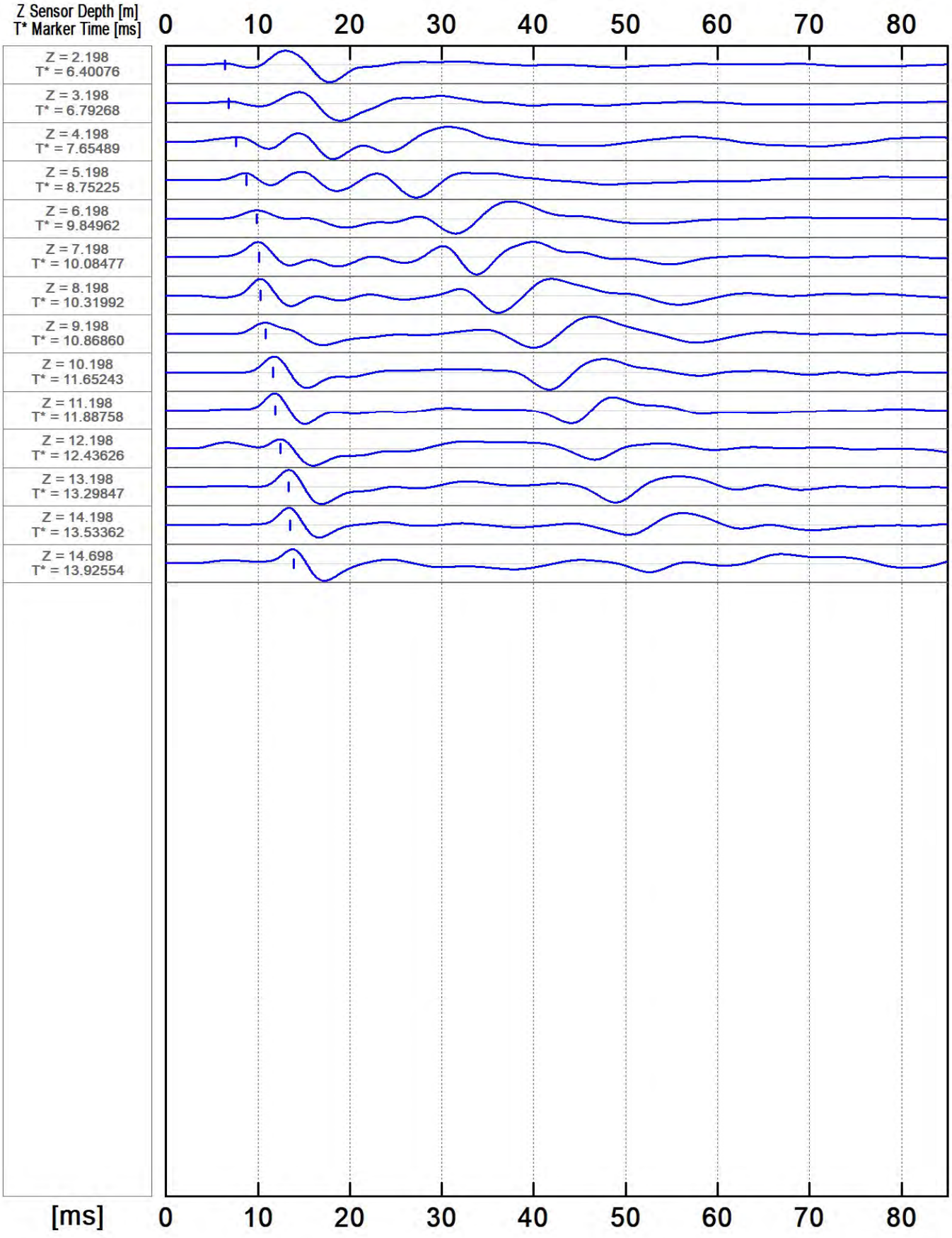


Notes:	**Project**	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.** **SCPT 05**
	Project No.	M2017-22	
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

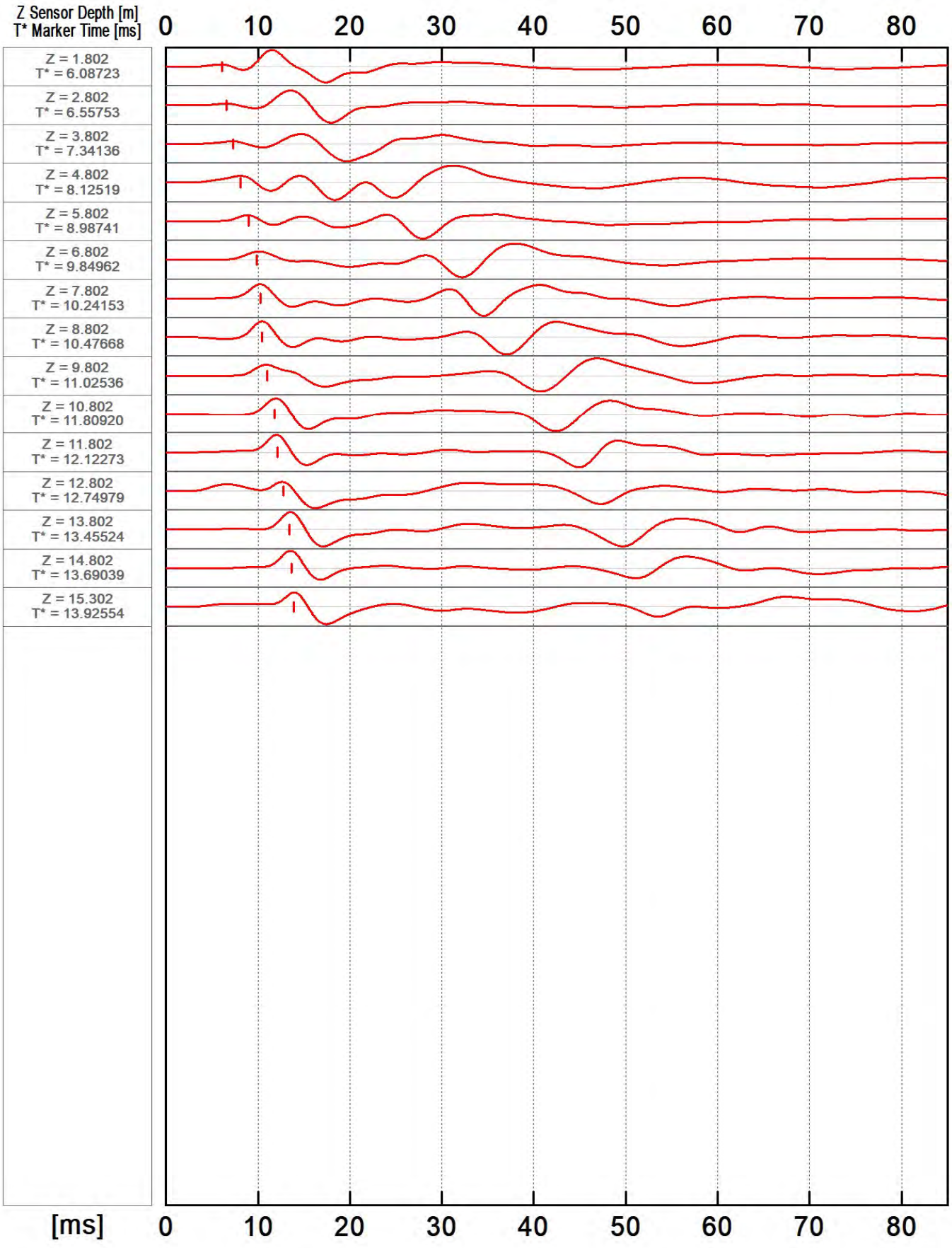
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 05

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 05

Seismic Cone Penetration Test Results

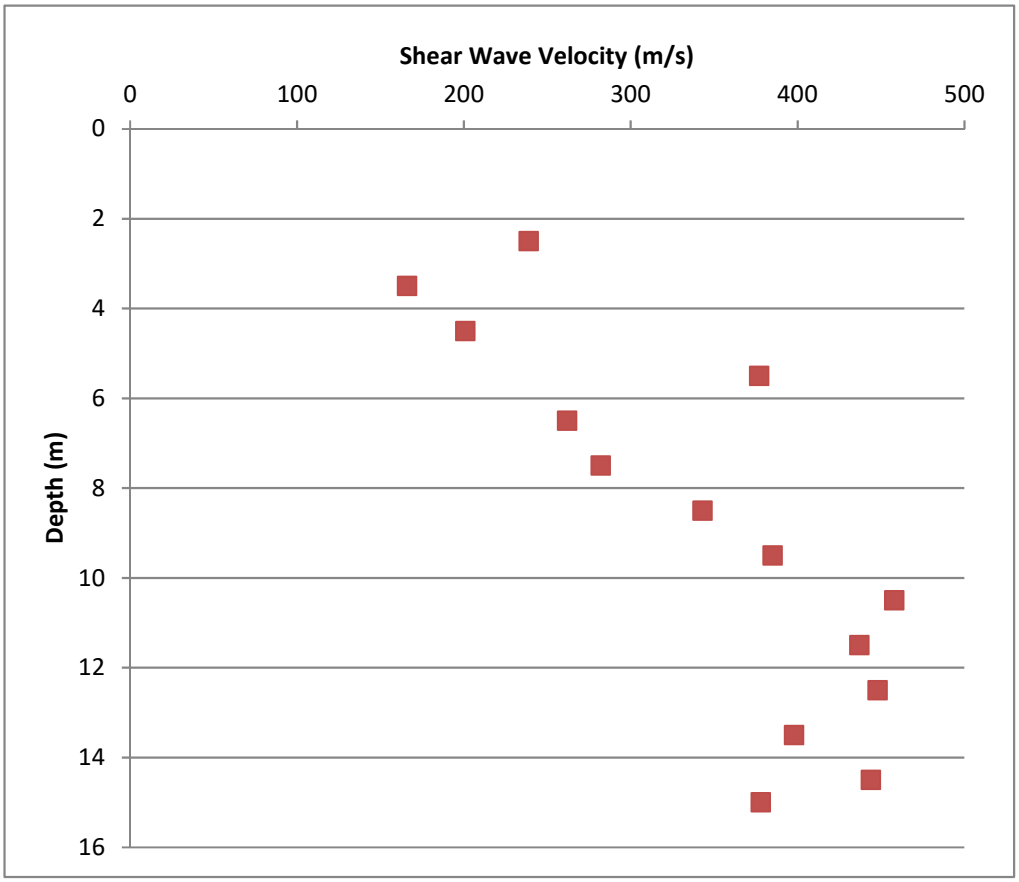
SOCOTEC

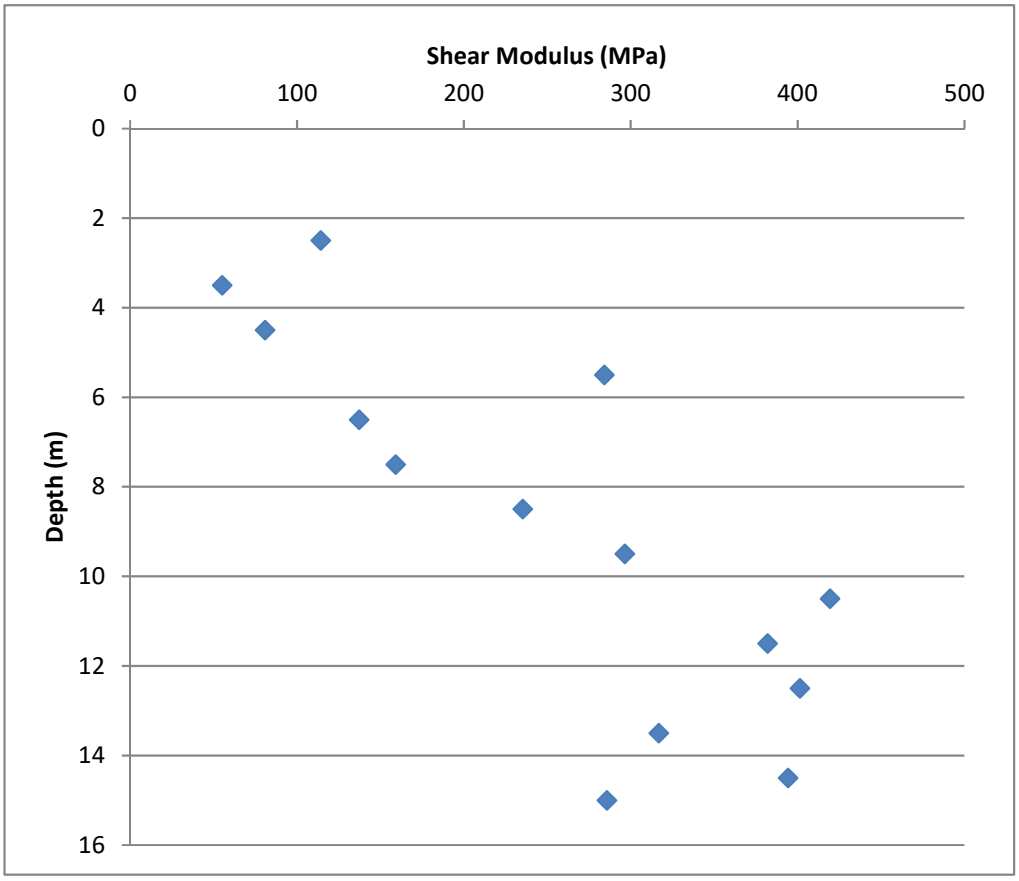
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
2.50	239	114.2
3.50	166	55.1
4.50	201	80.8
5.50	377	284.3
6.50	262	137.3
7.50	282	159.0
8.50	343	235.3
9.50	385	296.5
10.50	458	419.5
11.50	437	381.9
12.50	448	401.4
13.50	398	316.8
14.50	444	394.3
15.00	378	285.8

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





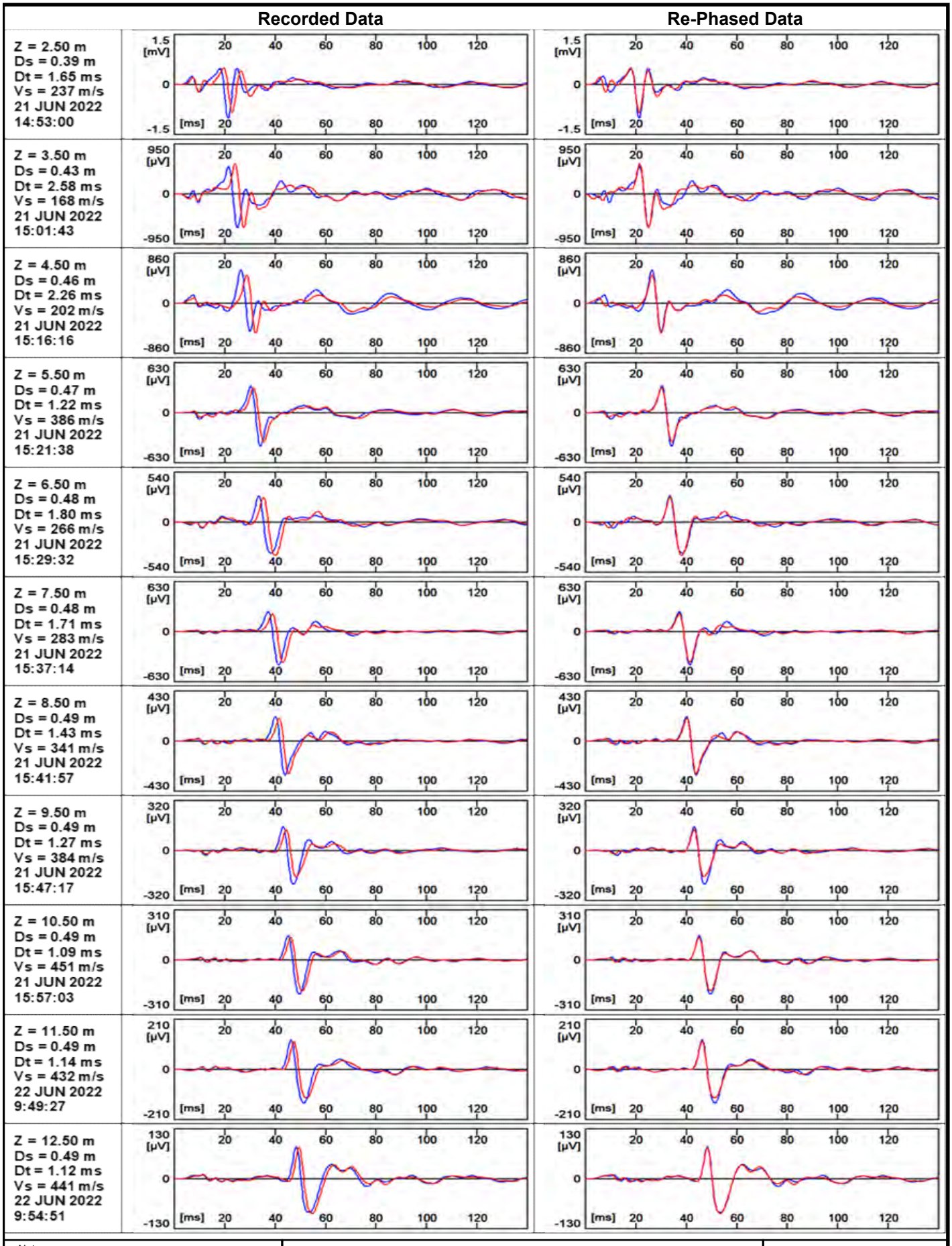
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 06

Seismic Cone Penetration Test Results

SOCOTEC

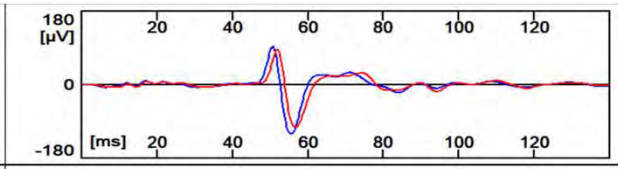
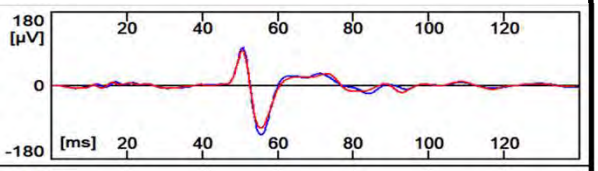
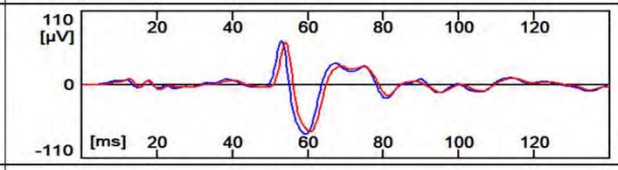
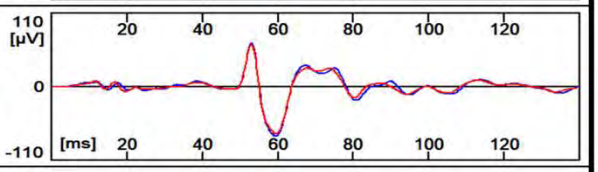
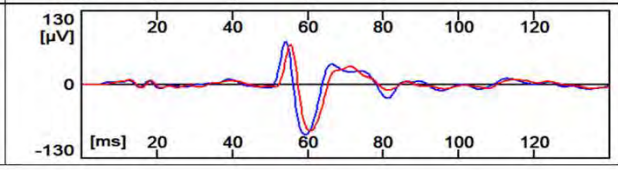
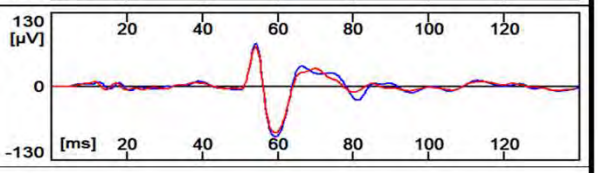


Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 06

Seismic Cone Penetration Test Results

	Recorded Data	Re-Phased Data
Z = 13.50 m Ds = 0.49 m Dt = 1.24 ms Vs = 400 m/s 22 JUN 2022 9:59:33		
Z = 14.50 m Ds = 0.50 m Dt = 1.12 ms Vs = 444 m/s 22 JUN 2022 10:05:04		
Z = 15.00 m Ds = 0.50 m Dt = 1.31 ms Vs = 380 m/s 22 JUN 2022 10:10:09		

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

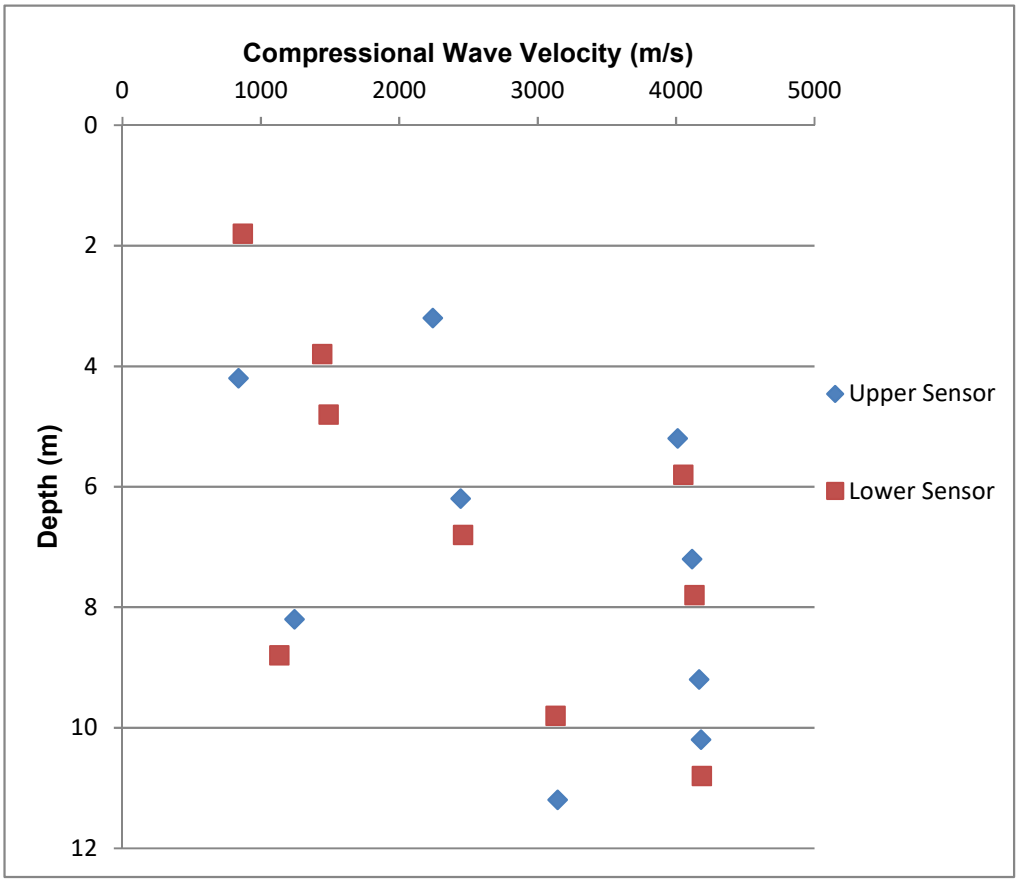
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	-
3.20	2241
4.20	838
5.20	4011
6.20	2444
7.20	4115
8.20	1243
9.20	4165
10.20	4180
11.20	3144
12.20	1575
13.20	1148
14.20	3159

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	870
2.80	-
3.80	1445
4.80	1491
5.80	4052
6.80	2461
7.80	4134
8.80	1134
9.80	3131
10.80	4187
11.80	2518
12.80	2523
13.80	1053
14.80	1581

Seismic Cone Penetration Test Results

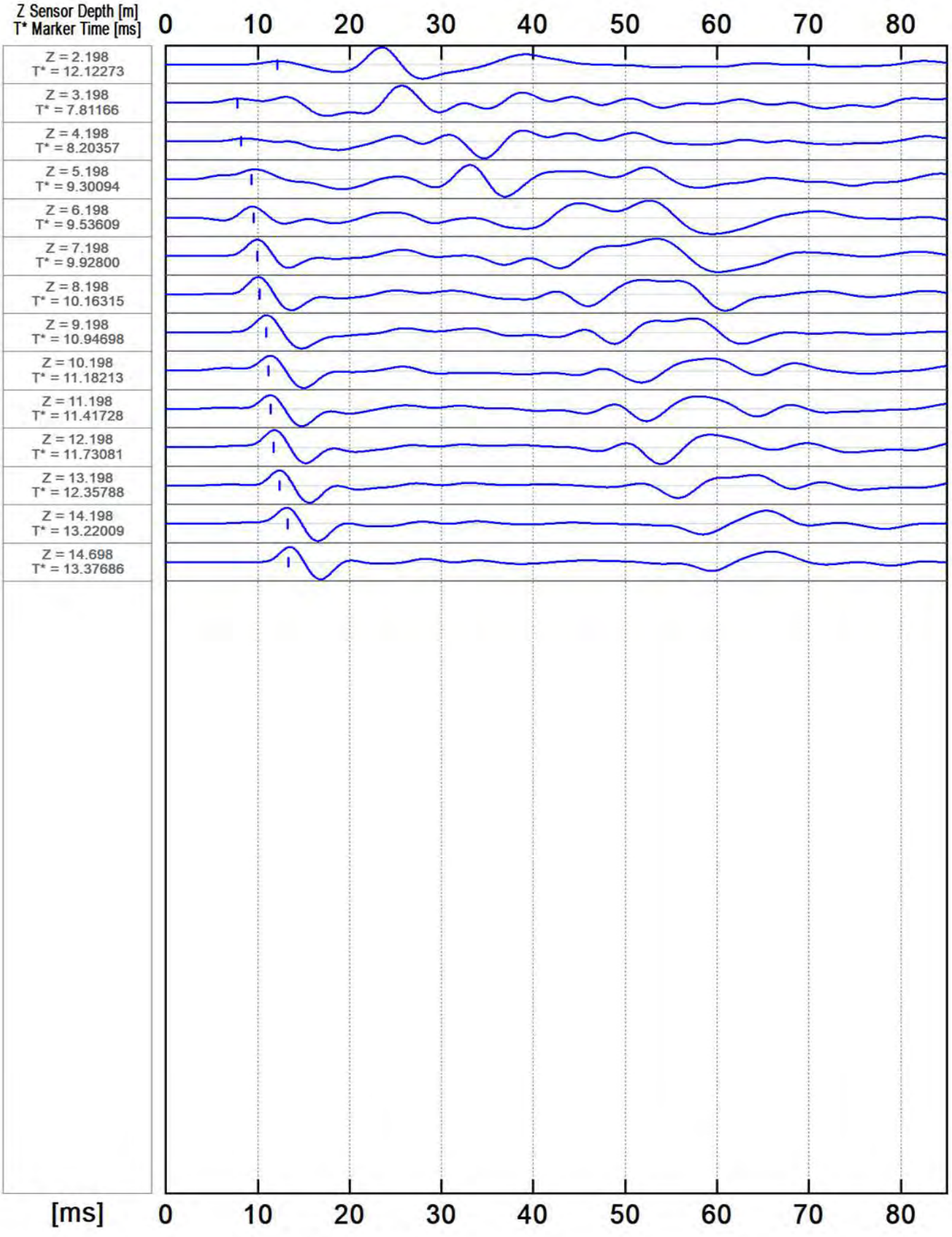


Notes:	**Project**	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.** **SCPT 06**
	Project No.	M2017-22	
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

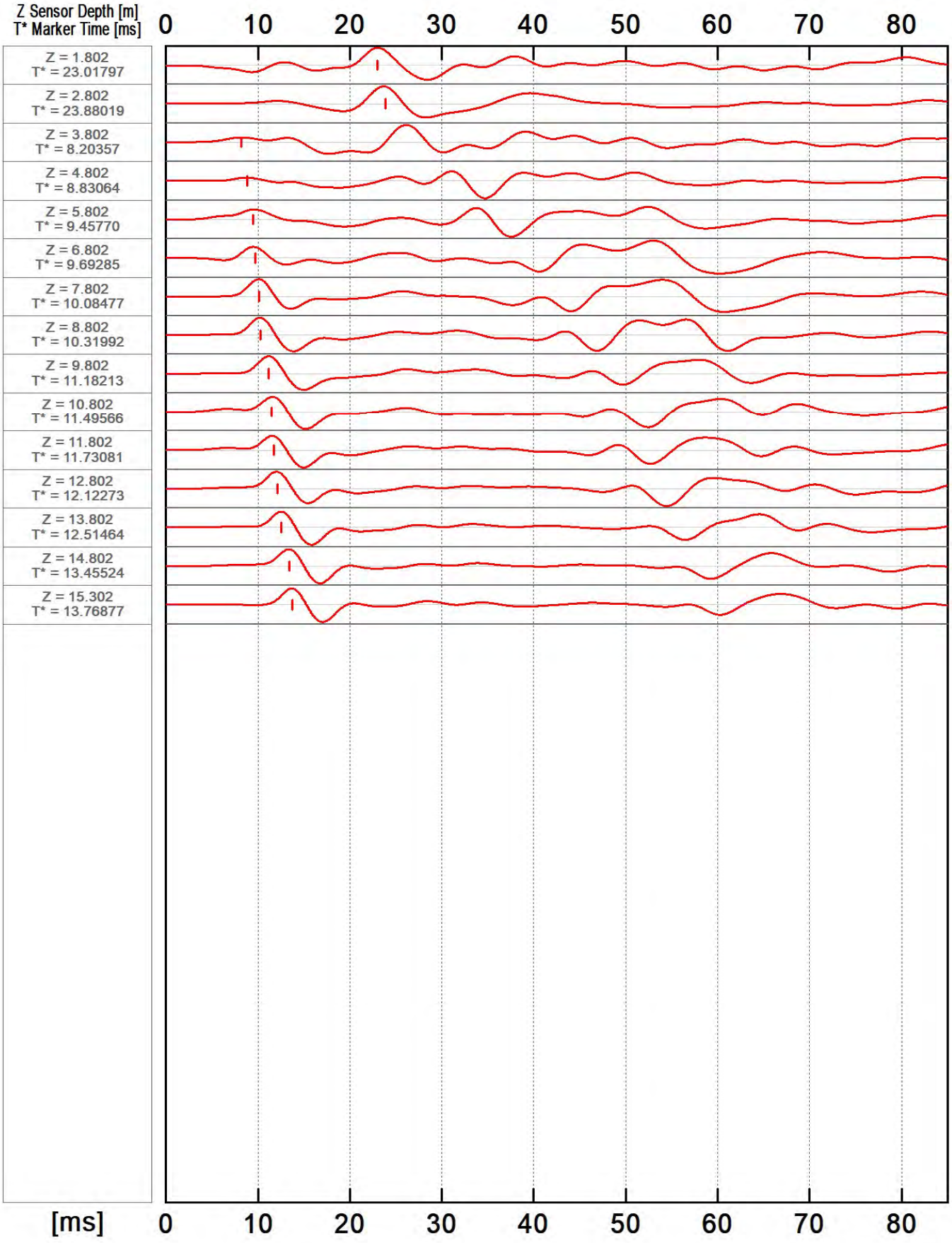
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 06

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 06

Seismic Cone Penetration Test Results

SOCOTEC

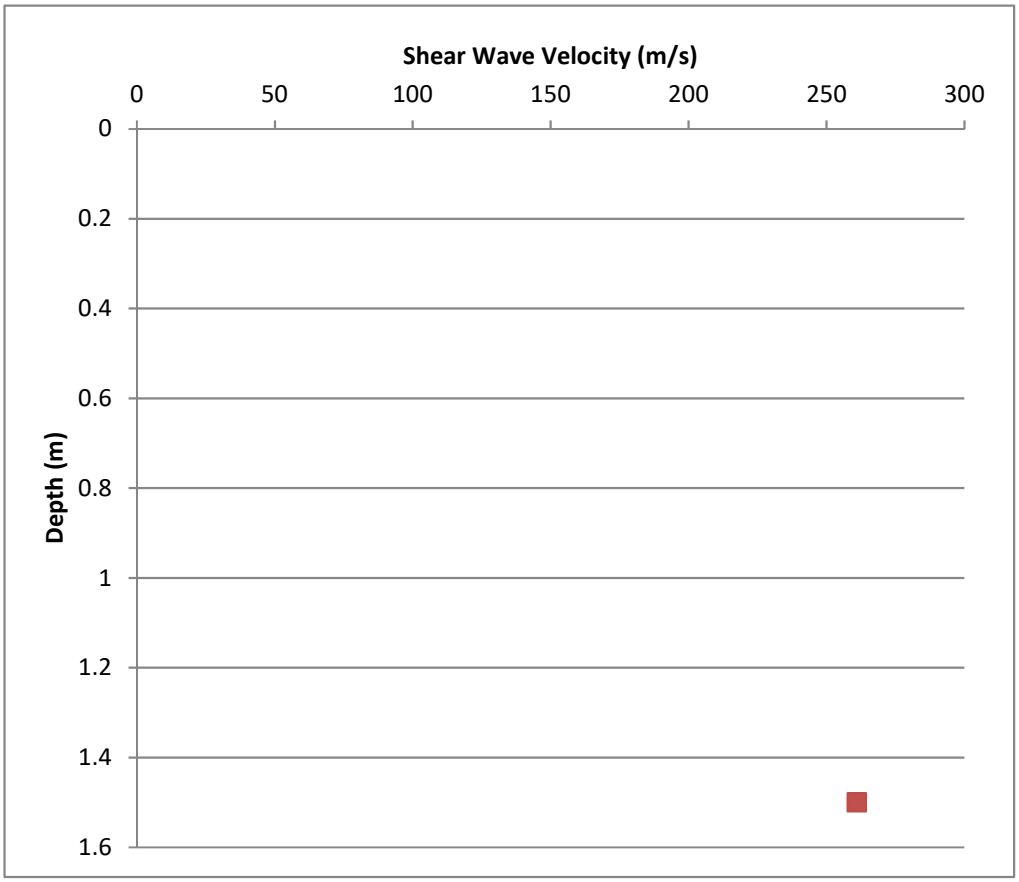
Shear Wave Velocity Data

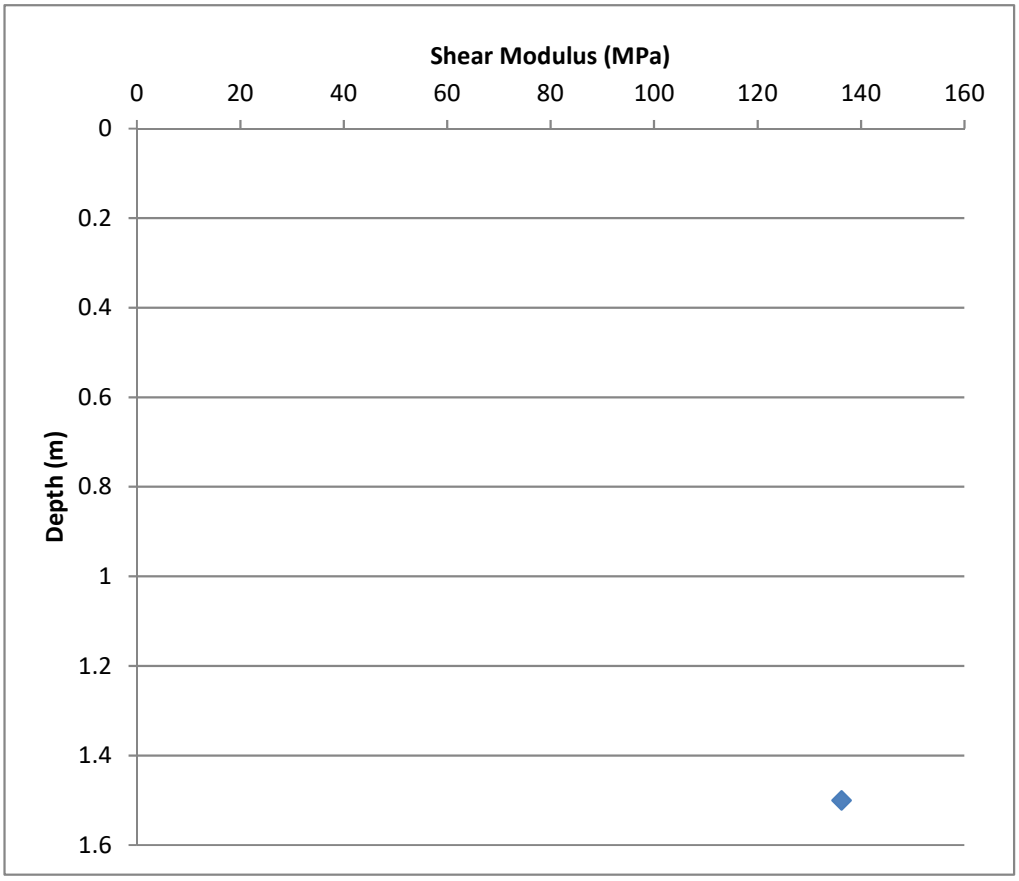
Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	261	136.2

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Notes: Test terminated shallow, no P Wave data	**Project**	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	**CPT No.** **SCPT 07**
	Project No.	M2017-22	
	Carried out for	Marriott Civils	

Seismic Cone Penetration Test Results





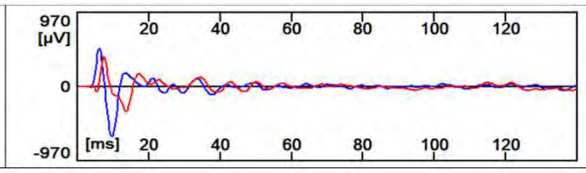
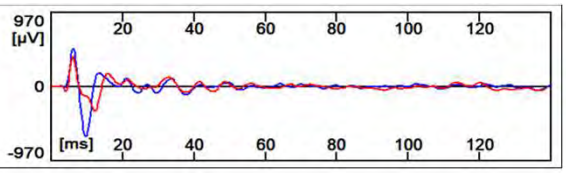
Notes: Test terminated shallow, no P Wave data

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 07

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 1.50 m Ds = 0.37 m Dt = 1.39 ms Vs = 266 m/s 23 JUN 2022 14:42:25		

Notes: Test terminated shallow, no P Wave data

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 07

Seismic Cone Penetration Test Results

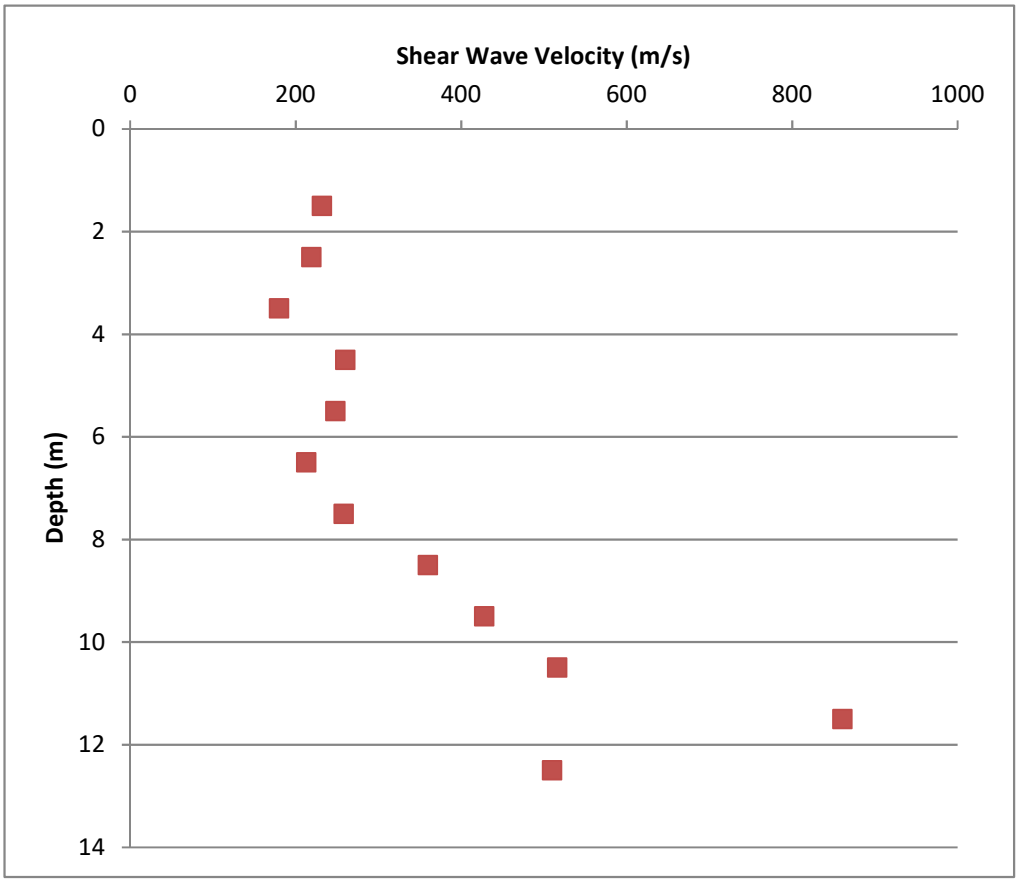
SOCOTEC

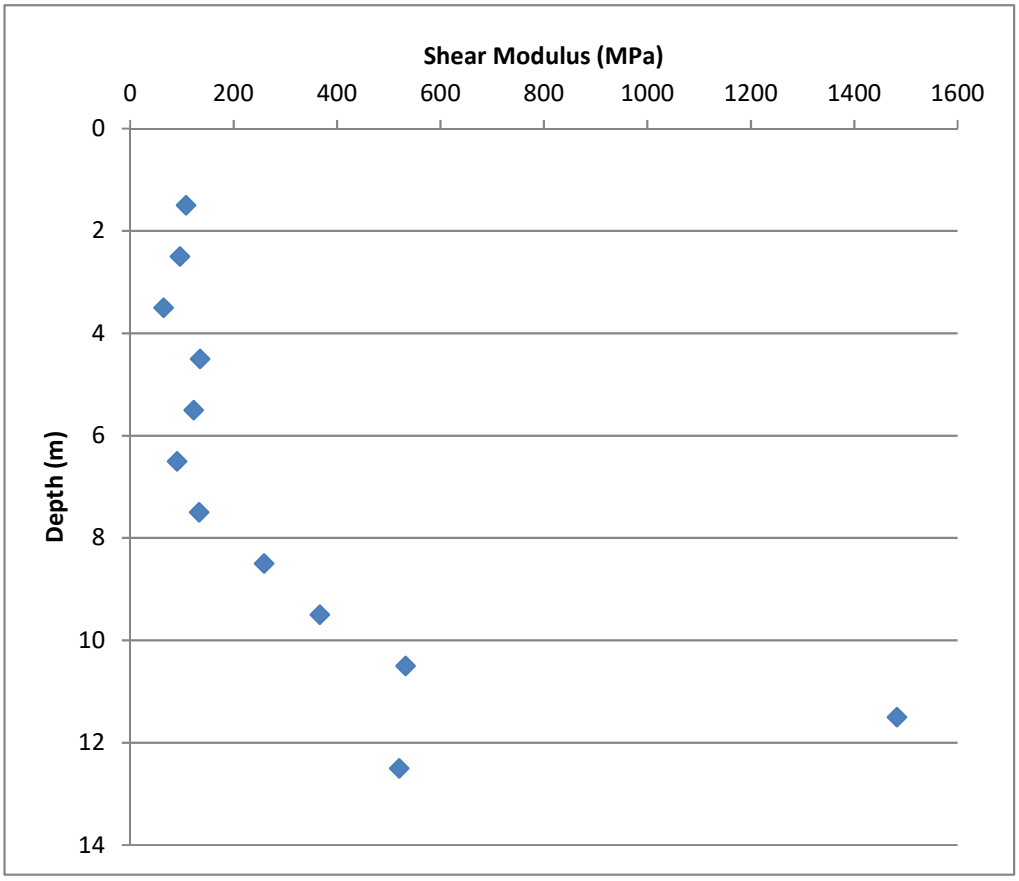
Shear Wave Velocity Data

Depth (m)	Shear Wave Velocity (m/s)	Shear Modulus (MPa)
1.50	232	107.6
2.50	219	95.9
3.50	180	64.8
4.50	260	135.2
5.50	248	123.0
6.50	213	90.7
7.50	258	133.1
8.50	360	259.2
9.50	428	366.4
10.50	516	532.5
11.50	861	1482.6
12.50	510	520.2

Shear Modulus, $G = \rho.Vs^2$ (ρ = bulk density - assumed to be 20 kN/m^3)

Seismic Cone Penetration Test Results





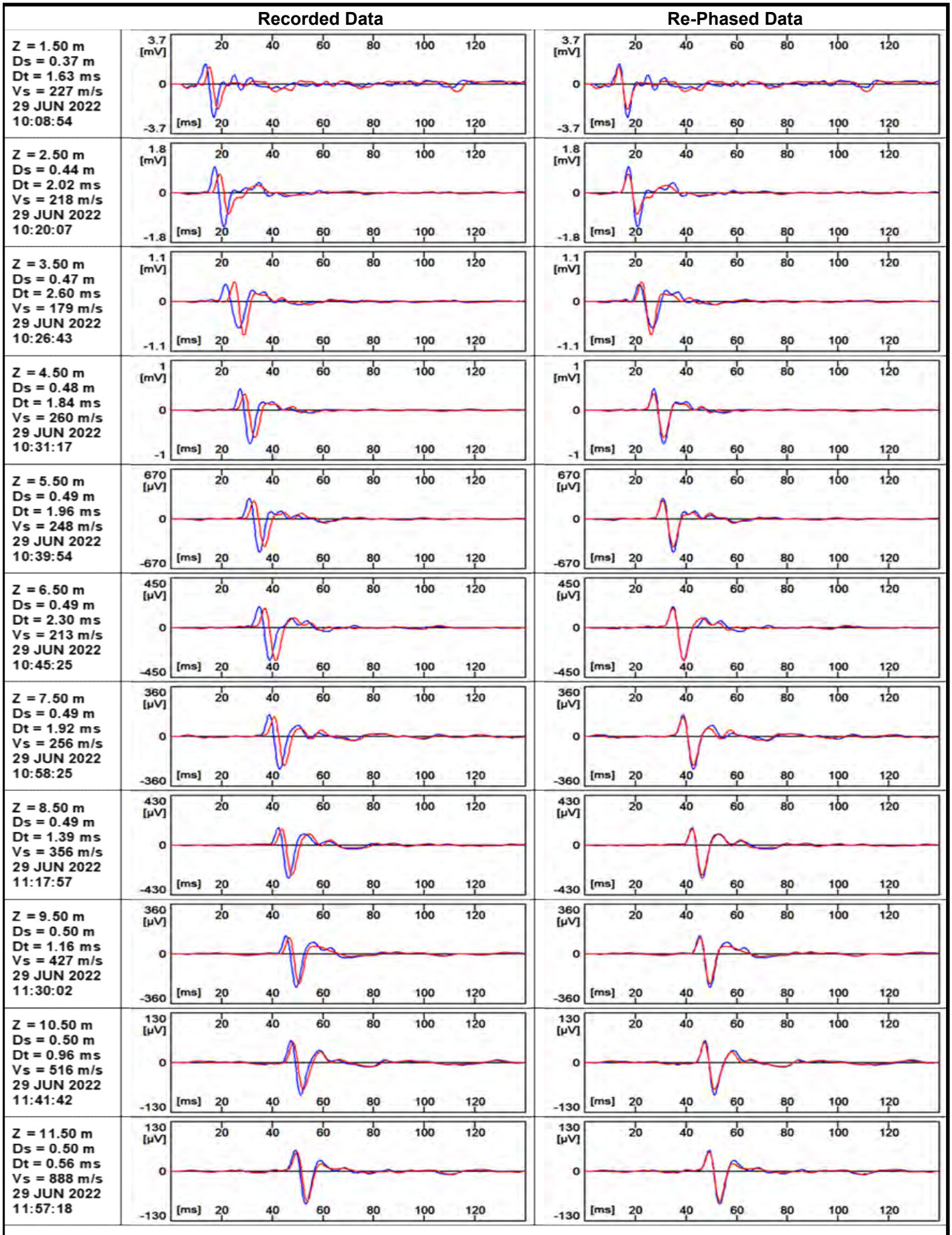
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 12

Seismic Cone Penetration Test Results

SOCOTEC



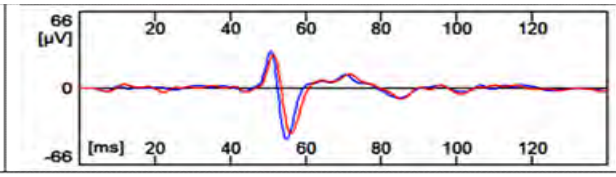
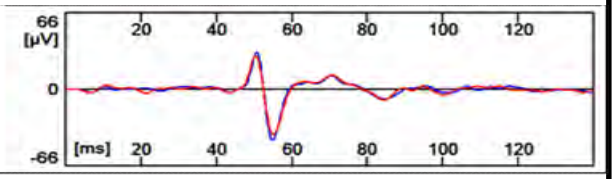
Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 12

Seismic Cone Penetration Test Results

SOCOTEC

	Recorded Data	Re-Phased Data
Z = 12.50 m Ds = 0.50 m Dt = 0.98 ms Vs = 508 m/s 29 JUN 2022 12:03:22		

Seismic Cone Penetration Test Results

SOCOTEC

Compressional Wave Data

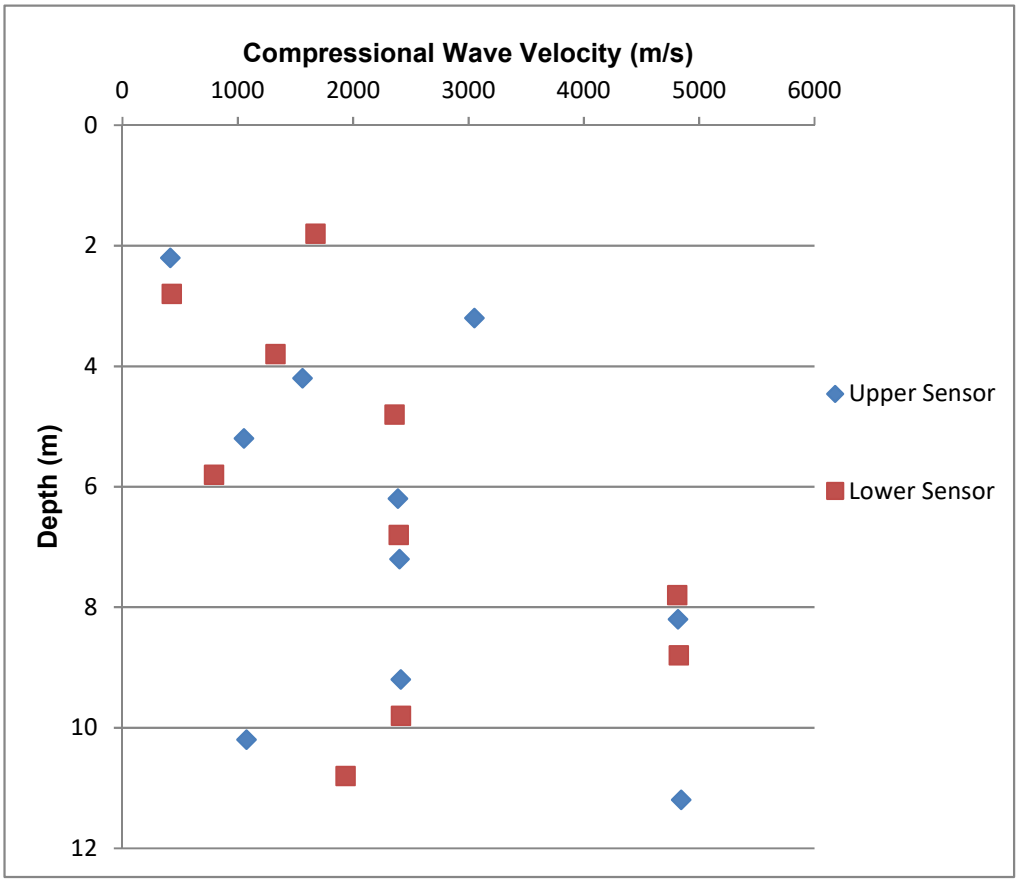
Upper Sensor

Depth (m)	Compressional Wave Velocity (m/s)
2.20	414
3.20	3050
4.20	1561
5.20	1054
6.20	2389
7.20	2401
8.20	4817
9.20	2414
10.20	1075
11.20	4843

Lower Sensor

Depth (m)	Compressional Wave Velocity (m/s)
1.80	1674
2.80	429
3.80	1328
4.80	2361
5.80	794
6.80	2397
7.80	4811
8.80	4824
9.80	2417
10.80	1936
11.80	1615

Seismic Cone Penetration Test Results

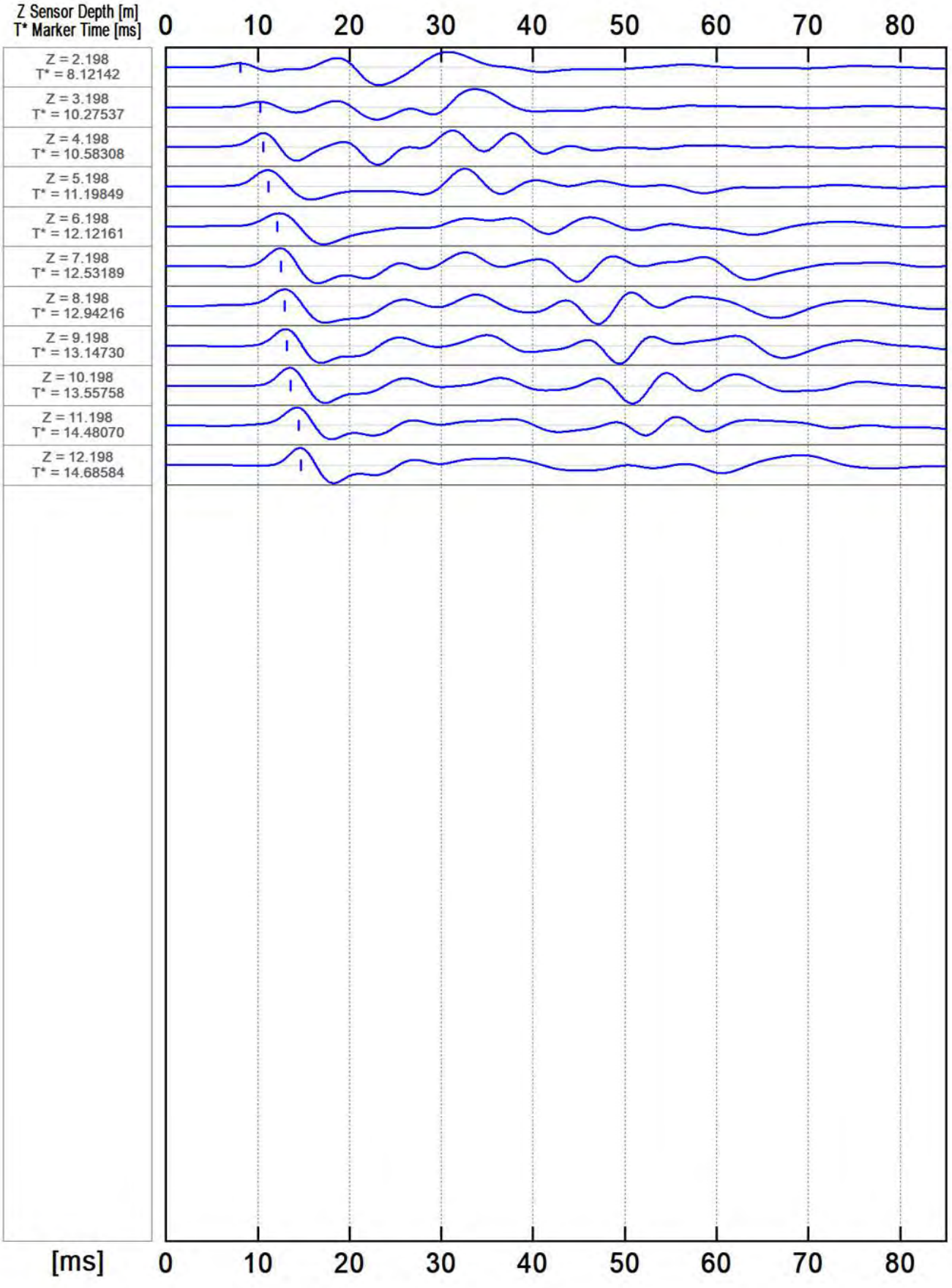


Notes:	Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION	CPT No.
	Project No.	M2017-22	SCPT 12
	Carried out for	Marriott Civils	Page 6 of 8

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Upper Sensor Seismograms



Notes:

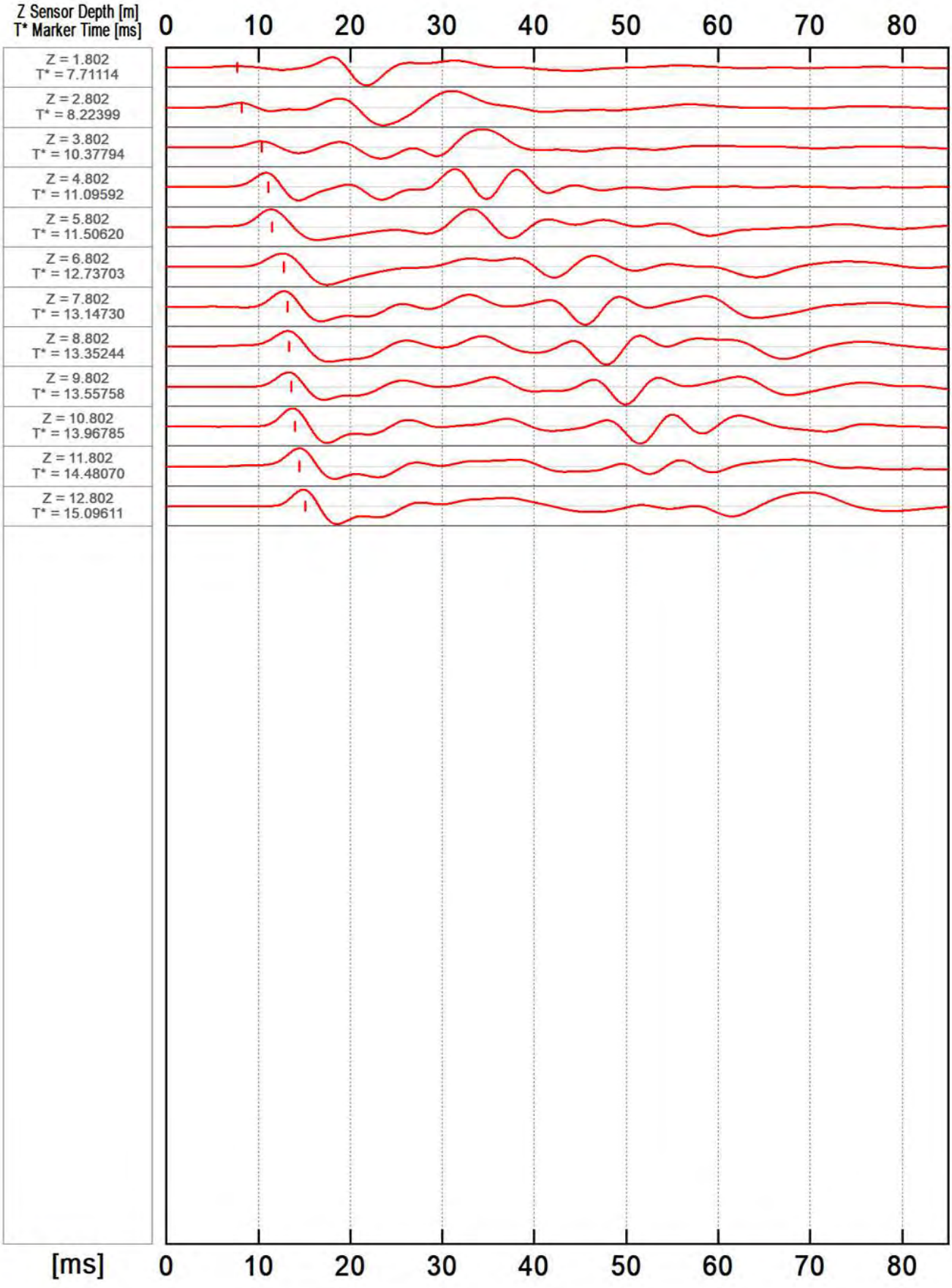
Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 12

Seismic Cone Penetration Test Results

SOCOTEC

P waves - Lower Sensor Seismograms



Notes:

Project	STANSTEAD TERMINAL 2 (ST2) GROUND INVESTIGATION
Project No.	M2017-22
Carried out for	Marriott Civils

CPT No.
SCPT 12

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Mohamed.Jaffer@socotec.com

SOCOTEC

UKAS TESTING
0001

TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0549912/340/M6**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	51069746/M3
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26711340**
		Test Number:	4
		Date Tested:	17 Jun 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	SITE
Location:	TP06A	Material Source:	SITE
		Kentledge Type:	360 EXC
Depth of Test (mm):	1.55 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly sandy gravelly clay		
Layer Thickness (mm):	N/A	Weather Conditions:	DRY

Results :

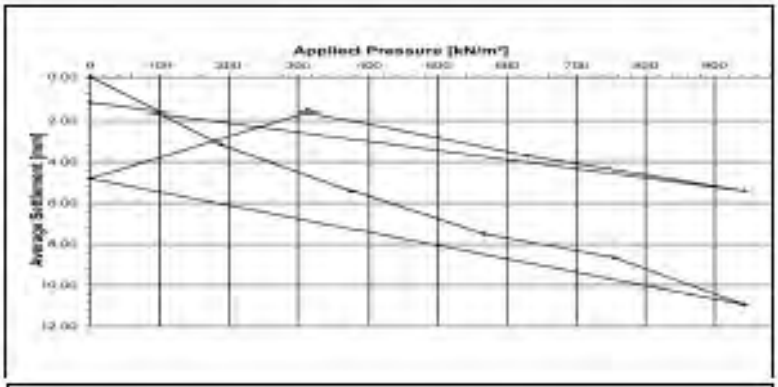
Maximum Deformation (mm): 11.0

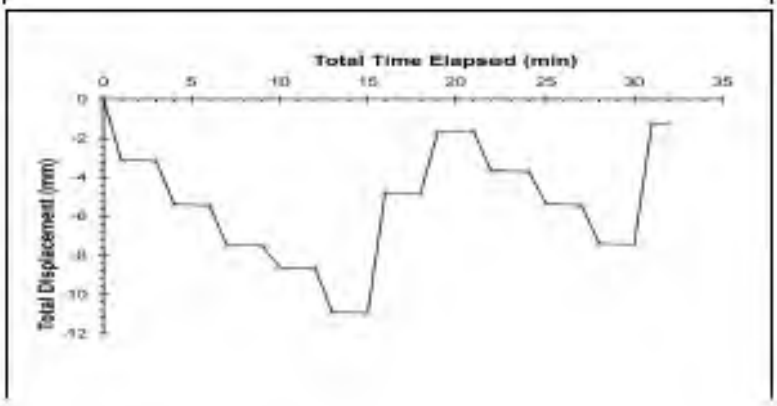
Corrected Applied Pressure: 947.3

Moisture Content (%): N/A

Modulus of Subgrade Reaction (MN/m³/m): 37

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	3.16
60.00	377	5.42
90.00	566	7.50
120.00	755	8.65
150.00	943	10.90
0.00	0	4.81
50.00	314	1.60
100.00	629	3.70
150.00	943	5.41
0.00	0	1.24





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

Mohamed Jaffer - Technical Manager
for and on behalf of SOCOTEC UK Limited

Form S55 ver15 12/21

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TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0549912/341/M6**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	51069746/M3
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26711341**
		Test Number:	5
		Date Tested:	17 Jun 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	SITE
Location:	TP07A	Material Source:	SITE
		Kentledge Type:	360 EXC
Depth of Test (mm):	1.55 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly sandy gravelly clay		
Layer Thickness (mm):	N/A	Weather Conditions:	DRY

Results :

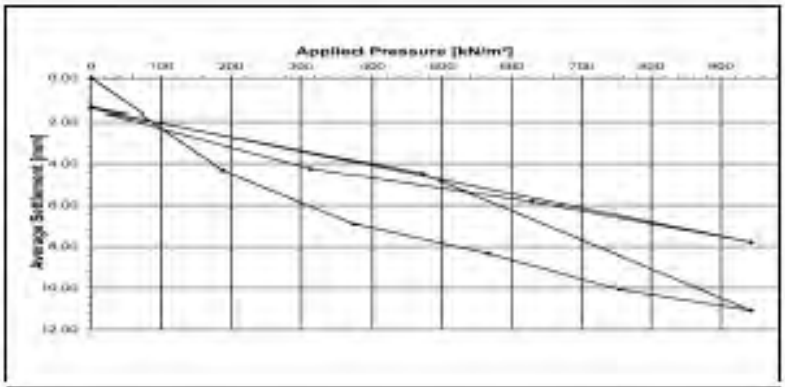
Maximum Deformation (mm): 11.1

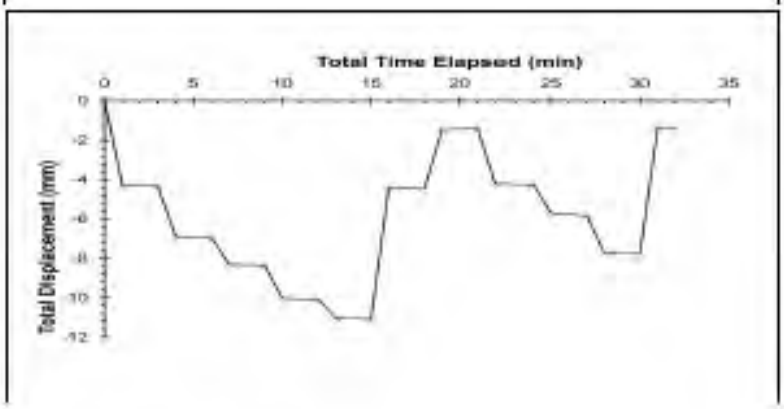
Corrected Applied Pressure: 947.3

Moisture Content (%): N/A

Modulus of Subgrade Reaction (MN/m³/m): 27

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	4.33
60.00	377	6.93
90.00	566	8.34
120.00	755	10.07
150.00	943	11.08
75.00	472	4.48
0.00	0	1.42
50.00	314	4.26
100.00	629	5.83
150.00	943	7.78
0.00	0	1.38





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

Mohamed Jaffer - Technical Manager
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TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0549914/350/M9**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	51069746/M2
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26711350**
		Test Number:	1
		Date Tested:	16 Jun 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	SITE
Location:	TP01A	Material Source:	SITE
		Kentledge Type:	360 EXC
Depth of Test (mm):	1.50 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly sandy slightly gravelly clay		
Layer Thickness (mm):	N/A	Weather Conditions:	DRY

Results :

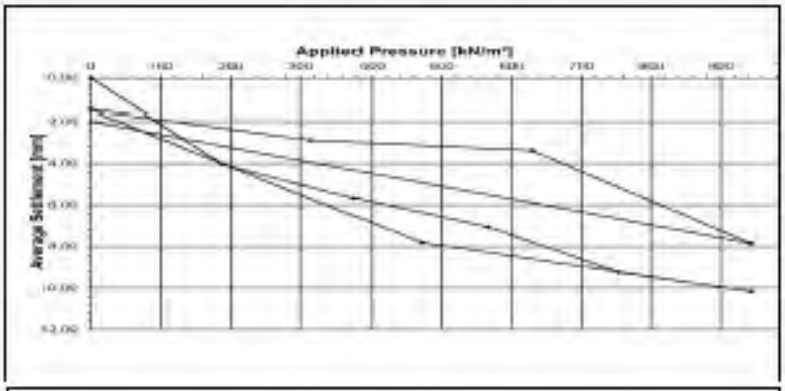
Maximum Deformation (mm): 10.2

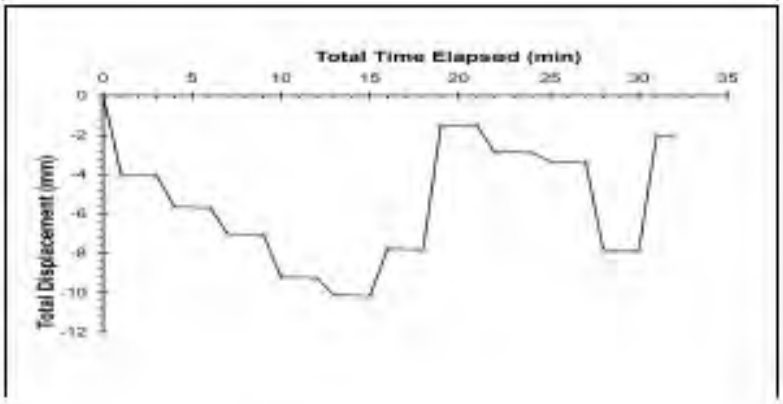
Corrected Applied Pressure: 947.3

Moisture Content (%): N/A

Modulus of Subgrade Reaction (MN/m³/m): 29

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	4.05
60.00	377	5.69
90.00	566	7.06
120.00	755	9.25
150.00	943	10.16
75.00	472	7.81
0.00	0	1.48
50.00	314	2.89
100.00	629	3.38
150.00	943	7.85
0.00	0	2.00





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

Mohamed Jaffer - Technical Manager
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TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0549914/351/M9**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	51069746/M2
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26711351**
		Test Number:	2
		Date Tested:	16 Jun 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	SITE
Location:	TP04A	Material Source:	SITE
		Kentledge Type:	360 EXC
Depth of Test (mm):	1.90 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly sandy gravelly clay		
Layer Thickness (mm):	N/A	Weather Conditions:	DRY

Results :

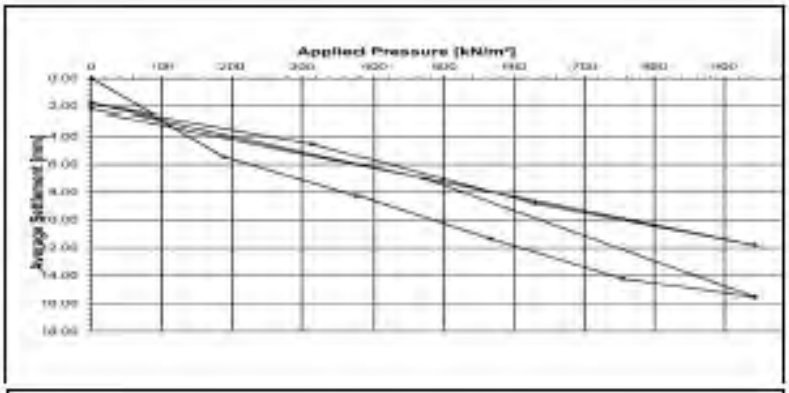
Maximum Deformation (mm): 15.5

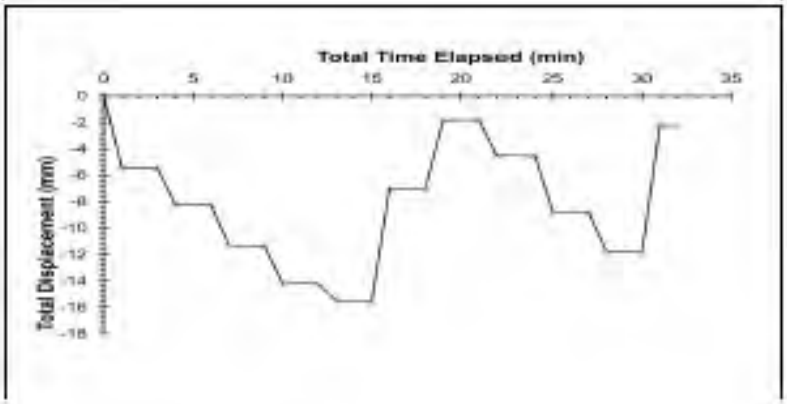
Corrected Applied Pressure: 947.3

Moisture Content (%): N/A

Modulus of Subgrade Reaction (MN/m²/m): 22

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	5.46
60.00	377	8.25
90.00	566	11.35
120.00	755	14.22
150.00	943	15.54
75.00	472	7.01
0.00	0	1.78
50.00	314	4.54
100.00	629	8.80
150.00	943	11.81
0.00	0	2.18





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

Mohamed Jaffer - Technical Manager
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TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0549914/352/M9**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	5106974 6/M2
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26711352**
		Test Number:	3
		Date Tested:	16 Jun 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	SITE
Location:	TP05A	Material Source:	SITE
		Kentledge Type:	360 EXC
Depth of Test (mm):	1.55 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly sandy gravelly clay		
Layer Thickness (mm):	N/A	Weather Conditions:	DRY

Results :

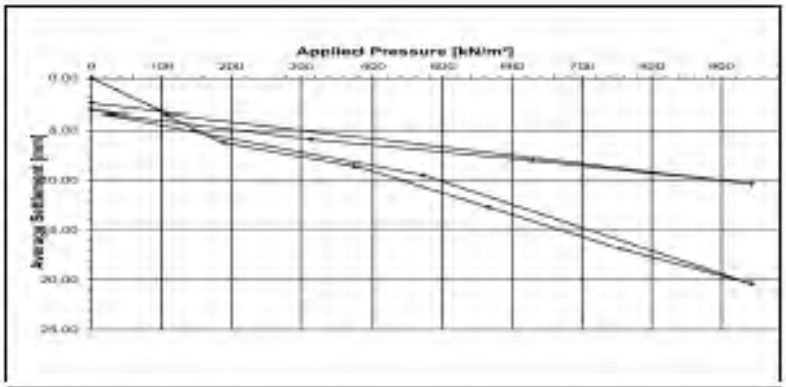
Maximum Deformation (mm): 20.4

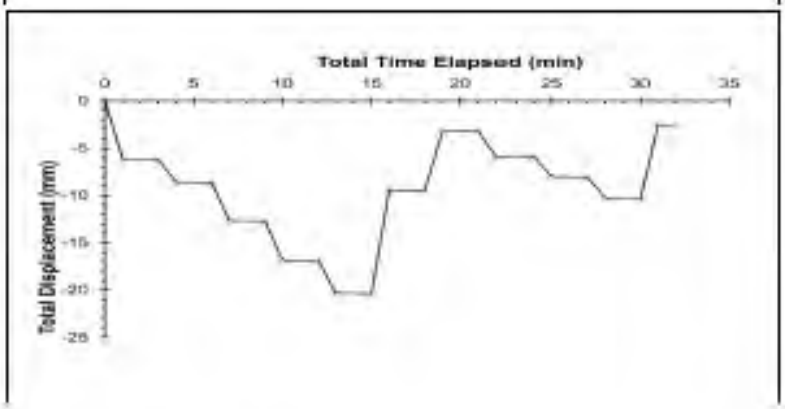
Corrected Applied Pressure: 947.3

Moisture Content (%): N/A

Modulus of Subgrade Reaction (MN/m²/m): 19

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	6.22
60.00	377	8.61
90.00	566	12.70
120.00	755	16.86
150.00	943	20.38
75.00	472	9.47
0.00	0	3.16
50.00	314	5.90
100.00	629	8.02
150.00	943	10.35
0.00	0	2.50





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

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TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0551213/234/M4**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	51069746/M6
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26727234**
		Test Number:	1
		Date Tested:	1 Jul 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	Site
Location:	TP14A	Material Source:	Site
		Kentledge Type:	Site Plant
Depth of Test (mm):	1.50 mbgl	Plate Diameter (mm):	450
Material Description:	Gravelly clay		
Layer Thickness (mm):	N/G	Weather Conditions:	Dry

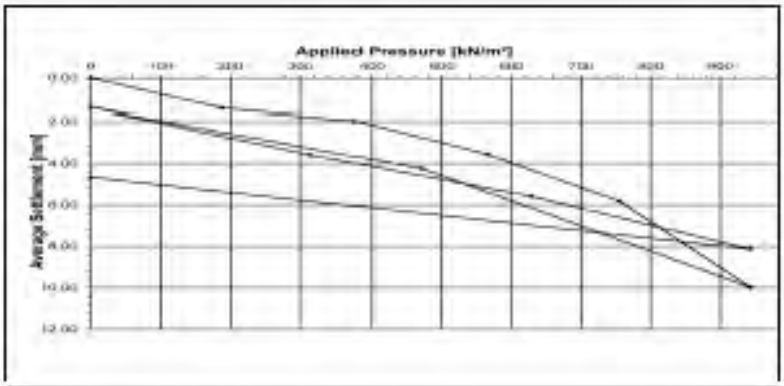
Results :

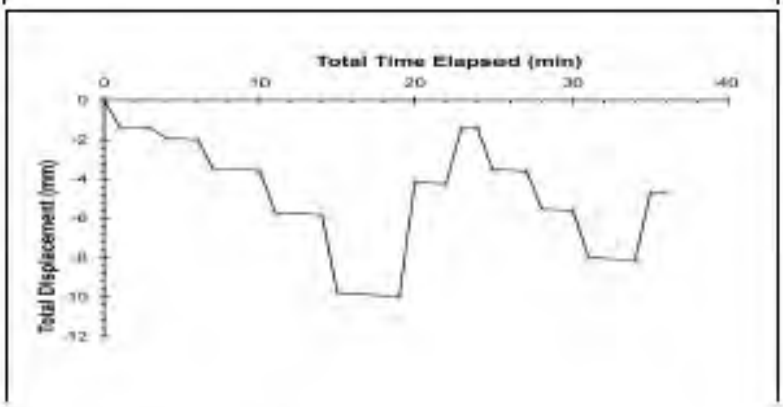
Maximum Deformation (mm): 10.0

Corrected Applied Pressure: 947.1

Moisture Content (%): N/A

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	1.43
60.00	377	1.99
90.00	566	3.57
120.00	755	5.81
150.00	943	9.97
75.00	472	4.24
0.00	0	1.38
50.00	314	3.59
100.00	629	5.59
150.00	943	8.13
0.00	0	4.67





Certified that testing was carried out in accordance with BS1377-9:1990
Certified that Moisture Content was carried out in accordance with BS1377-2:1990 Method 3.2

Signed: [redacted]

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SOCOTEC

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0001

TEST REPORT

Incremental Plate Loading Test

Report No:	**UXB0551213/235/M4**	**Report Date:**	**4 October 2022**
Client:	SOCOTEC UK Limited	Our Contract Ref:	5106974 6/M6
Address:	GTS Support Centre PO Box 100 Ashby Road DE15 0XD GB	**Socotec Test Ref:**	**26727235**
		Test Number:	2
		Date Tested:	1 Jul 2022
		Tested By:	SOCOTEC Uxbridge
Client Contact:	Not Advised		
Site:	**D2027-22, Terminal Rd N, Stanstead, CM22 6PF**	Material Supplier:	Site
Location:	TP13A	Material Source:	Site
		Kentledge Type:	Site Plant
Depth of Test (mm):	1.50 mbgl	Plate Diameter (mm):	450
Material Description:	Slightly gravelly sandy clay		
Layer Thickness (mm):	N/G	Weather Conditions:	Dry

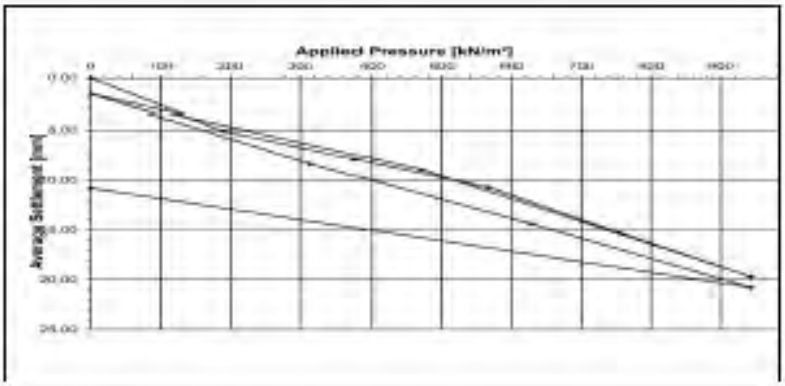
Results :

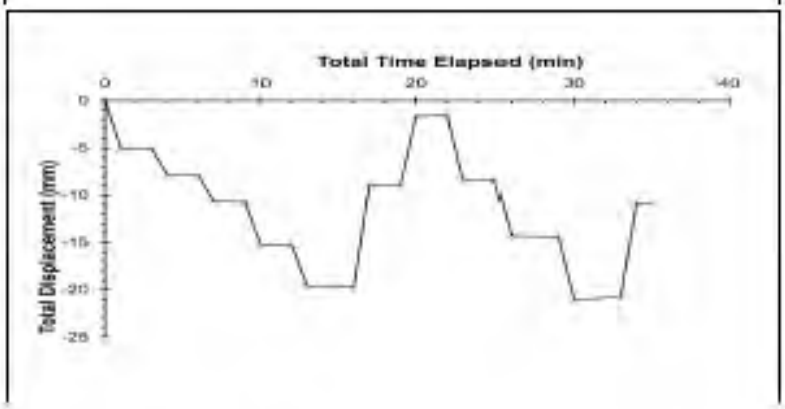
Maximum Deformation (mm): 21.0

Corrected Applied Pressure: 947.1

Moisture Content (%): N/A

Applied Load (kN)	Applied Pressure (kN/m²)	Applied Plate Settlement (mm)
30.00	189	5.09
60.00	377	7.92
90.00	566	10.71
120.00	755	15.28
150.00	943	19.70
75.00	472	8.95
0.00	0	1.57
50.00	314	6.36
100.00	629	14.40
150.00	943	20.79
0.00	0	10.80





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Signed: [redacted]

Mohamed Jaffer - Technical Manager
for and on behalf of SOCOTEC UK Limited

Form S55 ver15 12/21

Dynamic Cone Penetrometer Test

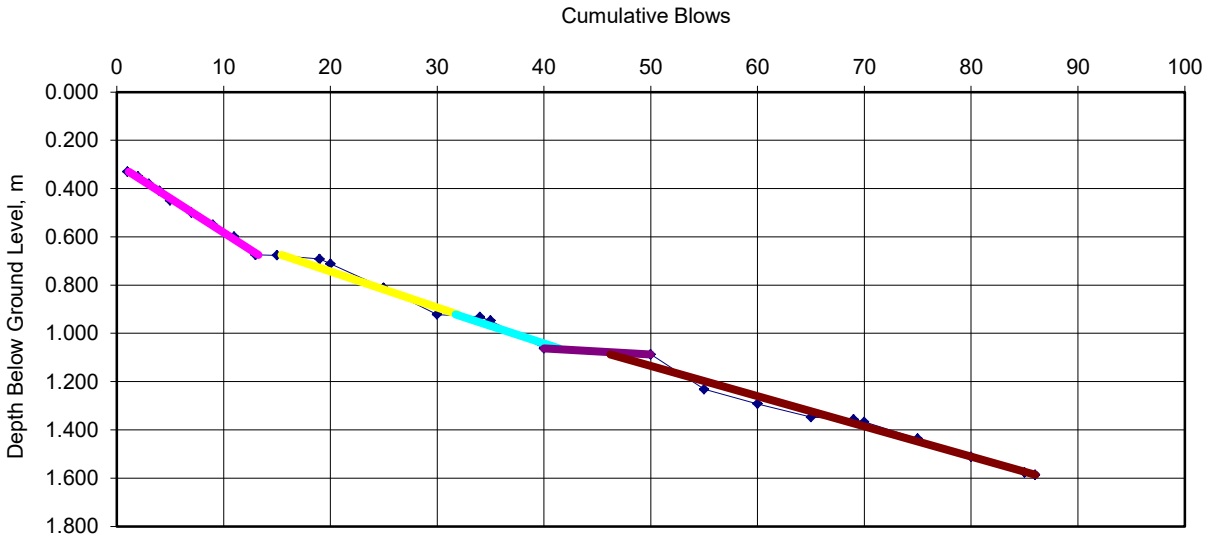
SOCOTEC

Date of Test: 22/06/2022 Test Depth: 0.30 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.330	1	1.587	86						
0.350	2								
0.380	3								
0.410	4								
0.450	5								
0.500	7								
0.550	9								
0.600	11								
0.675	13								
0.677	15								
0.692	19								
0.712	20								
0.812	25								
0.922	30								
0.932	34								
0.947	35								
1.062	40								
1.087	50								
1.232	55								
1.292	60								
1.347	65								
1.357	69								
1.367	70								
1.437	75								
1.512	80								
1.577	85								



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.33	0.68	8.7
0.68	0.92	17
0.92	1.06	17
1.06	1.09	110
1.09	1.59	20

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP01 DCP

Dynamic Cone Penetrometer Test

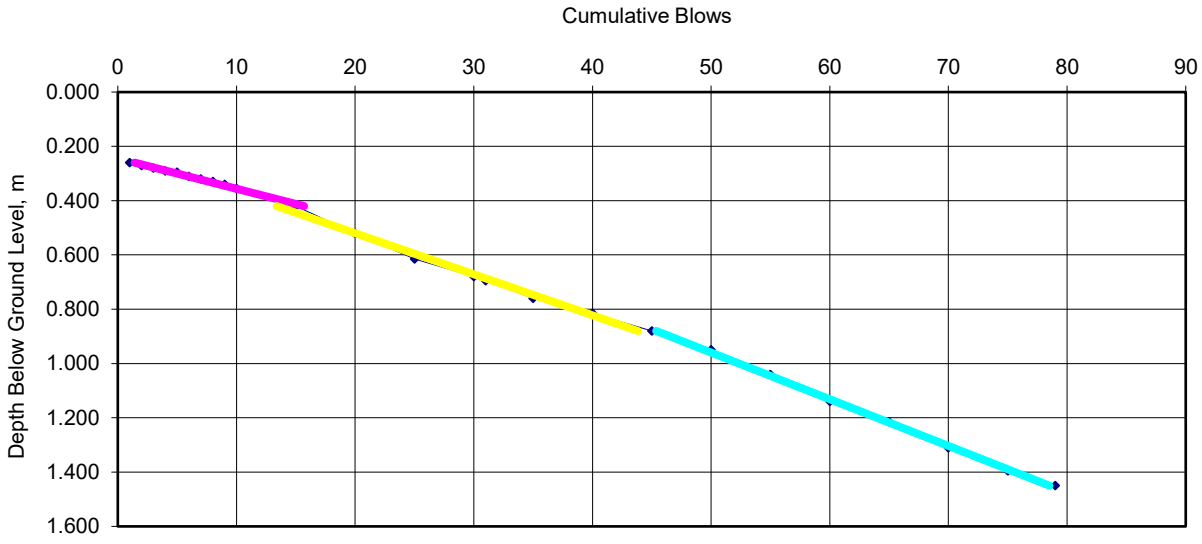
SOCOTEC

Date of Test: 22/06/2022 Test Depth: 0.25 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.260	1								
0.270	2								
0.280	3								
0.290	4								
0.295	5								
0.310	6								
0.320	7								
0.330	8								
0.340	9								
0.355	10								
0.420	15								
0.520	20								
0.615	25								
0.680	30								
0.695	31								
0.760	35								
0.815	40								
0.880	45								
0.950	50								
1.040	55								
1.140	60								
1.215	65								
1.310	70								
1.395	75								
1.450	79								



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.26	0.42	23
0.42	0.88	17
0.88	1.45	14

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP04 DCP

Dynamic Cone Penetrometer Test

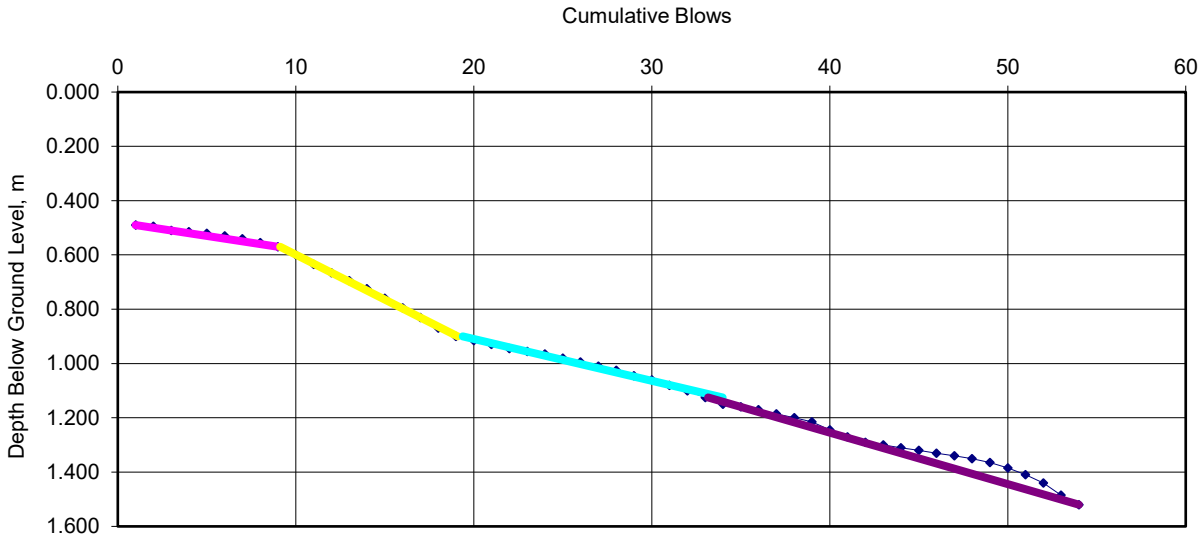
SOCOTEC

Date of Test: 22/06/2022 Test Depth: 0.48 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.490	1	1.010	27	1.485	53				
0.495	2	1.025	28	1.520	54				
0.510	3	1.045	29						
0.515	4	1.060	30						
0.520	5	1.080	31						
0.530	6	1.100	32						
0.540	7	1.125	33						
0.555	8	1.150	34						
0.570	9	1.160	35						
0.600	10	1.170	36						
0.635	11	1.185	37						
0.665	12	1.200	38						
0.695	13	1.215	39						
0.725	14	1.245	40						
0.760	15	1.270	41						
0.795	16	1.290	42						
0.830	17	1.300	43						
0.870	18	1.310	44						
0.900	19	1.320	45						
0.915	20	1.330	46						
0.930	21	1.340	47						
0.945	22	1.350	48						
0.955	23	1.365	49						
0.965	24	1.385	50						
0.980	25	1.410	51						
0.995	26	1.440	52						



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.49	0.57	27
0.57	0.90	7.4
0.90	1.13	16
1.13	1.52	15

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP05 DCP

Dynamic Cone Penetrometer Test

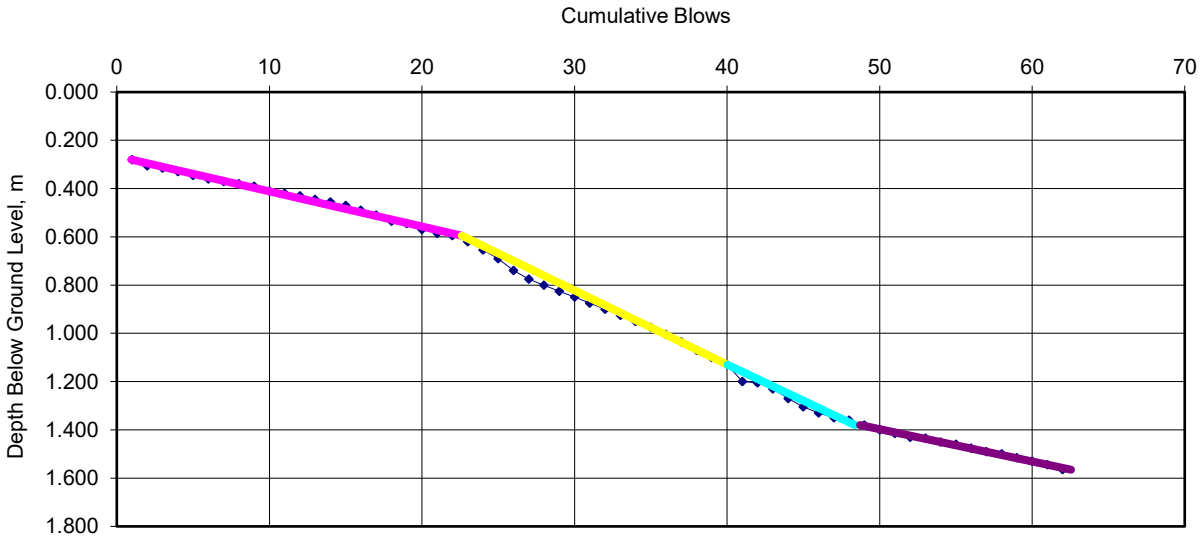
SOCOTEC

Date of Test: 22/06/2022 Test Depth: 0.27 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.280	1	0.775	27	1.435	53				
0.305	2	0.800	28	1.450	54				
0.315	3	0.825	29	1.460	55				
0.330	4	0.850	30	1.475	56				
0.345	5	0.875	31	1.490	57				
0.360	6	0.900	32	1.500	58				
0.370	7	0.925	33	1.515	59				
0.380	8	0.950	34	1.530	60				
0.390	9	0.975	35	1.545	61				
0.410	10	1.005	36	1.565	62				
0.420	11	1.035	37						
0.430	12	1.070	38						
0.445	13	1.100	39						
0.455	14	1.130	40						
0.470	15	1.200	41						
0.490	16	1.205	42						
0.510	17	1.230	43						
0.535	18	1.270	44						
0.545	19	1.305	45						
0.570	20	1.330	46						
0.585	21	1.350	47						
0.595	22	1.360	48						
0.620	23	1.380	49						
0.655	24	1.400	50						
0.690	25	1.415	51						
0.740	26	1.430	52						



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.28	0.60	17
0.60	1.13	8.6
1.13	1.38	9.3
1.38	1.57	19

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

Hole
TP06 DCP

Dynamic Cone Penetrometer Test

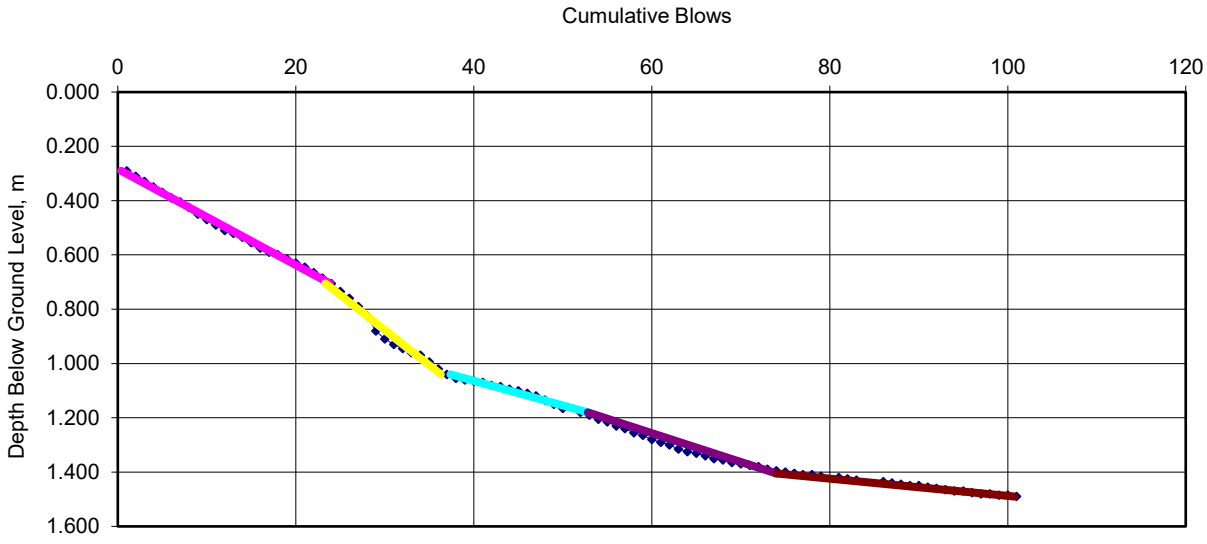
SOCOTEC

Date of Test: 22/06/2022 Test Depth: 0.27 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.290	1	0.790	27	1.205	54	1.420	81		
0.310	2	0.825	28	1.215	55	1.425	82		
0.330	3	0.880	29	1.230	56	1.430	83		
0.350	4	0.910	30	1.240	57	1.435	86		
0.370	5	0.930	31	1.255	58	1.440	87		
0.390	6	0.945	32	1.265	59	1.445	88		
0.405	7	0.960	33	1.280	60	1.450	89		
0.425	8	0.970	34	1.290	61	1.450	90		
0.450	9	0.995	35	1.300	62	1.455	91		
0.470	10	1.020	36	1.315	63	1.460	92		
0.490	11	1.040	37	1.325	64	1.465	93		
0.510	12	1.055	38	1.330	65	1.470	94		
0.520	13	1.060	39	1.340	66	1.470	95		
0.535	14	1.065	40	1.350	67	1.475	96		
0.555	15	1.070	41	1.355	68	1.480	97		
0.575	16	1.080	42	1.365	69	1.480	98		
0.590	17	1.085	43	1.370	70	1.485	99		
0.600	18	1.095	44	1.375	71	1.485	100		
0.615	19	1.100	45	1.380	72	1.490	101		
0.630	20	1.110	46	1.390	73				
0.645	21	1.120	47	1.395	74				
0.665	22	1.135	48	1.400	75				
0.685	23	1.150	49	1.405	76				
0.705	24	1.165	50	1.410	77				
0.735	25	1.180	52	1.410	78				
0.760	26	1.190	53	1.415	79				



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.29	0.71	14
0.71	1.04	9.7
1.04	1.18	29
1.18	1.41	27
1.41	1.49	80

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP07 DCP

Dynamic Cone Penetrometer Test

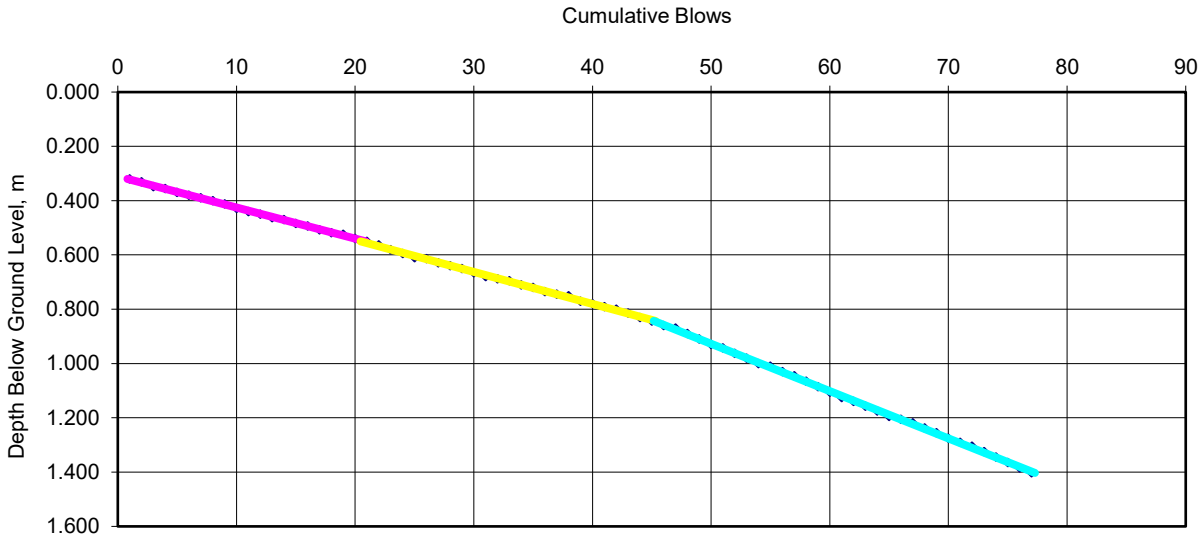
SOCOTEC

Date of Test: 01/07/2022 Test Depth: 0.31 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.320	1	0.629	27	0.980	53				
0.331	2	0.640	28	1.000	54				
0.348	3	0.650	29	1.010	55				
0.355	4	0.665	30	1.030	56				
0.370	5	0.680	31	1.045	57				
0.380	6	0.688	32	1.065	58				
0.389	7	0.695	33	1.085	59				
0.400	8	0.710	34	1.105	60				
0.412	9	0.720	35	1.125	61				
0.428	10	0.735	36	1.139	62				
0.440	11	0.745	37	1.157	63				
0.450	12	0.750	38	1.175	64				
0.463	13	0.770	39	1.195	65				
0.470	14	0.780	40	1.205	66				
0.484	15	0.790	41	1.219	67				
0.493	16	0.800	42	1.237	68				
0.507	17	0.814	43	1.255	69				
0.518	18	0.830	44	1.275	70				
0.524	19	0.843	45	1.290	71				
0.539	20	0.860	46	1.305	72				
0.550	21	0.870	47	1.325	73				
0.563	22	0.890	48	1.345	74				
0.580	23	0.910	49	1.365	75				
0.595	24	0.930	50	1.385	76				
0.610	25	0.943	51	1.403	77				
0.614	26	0.963	52						



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.32	0.55	22
0.55	0.84	22
0.84	1.40	14

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP13 DCP

Dynamic Cone Penetrometer Test

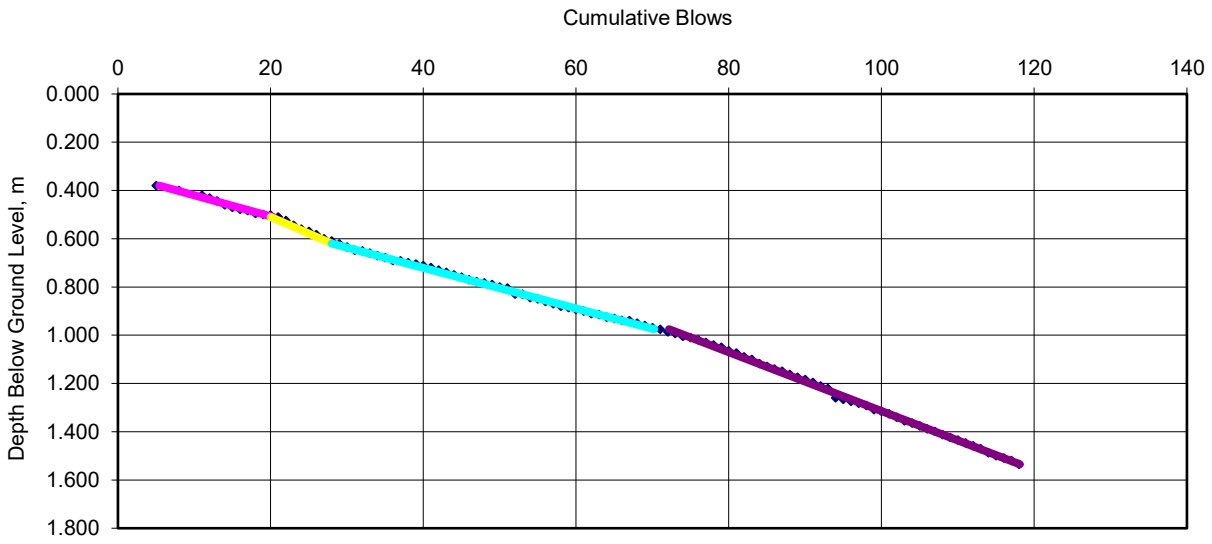
SOCOTEC

Date of Test: 01/07/2022 Test Depth: 0.35 mBGL

Method: TRL

Remarks:

Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows	Depth, mBGL	Cumulative Blows
0.380	5	0.678	35	0.900	61	1.150	87	1.470	113
0.400	8	0.690	36	0.910	62	1.162	88	1.488	114
0.420	11	0.692	37	0.915	63	1.175	89	1.499	115
0.432	12	0.700	38	0.925	64	1.184	90	1.509	116
0.444	13	0.705	39	0.930	65	1.196	91	1.520	117
0.460	14	0.712	40	0.939	66	1.210	92	1.535	118
0.470	15	0.720	41	0.940	67	1.221	93		
0.478	16	0.730	42	0.950	68	1.260	94		
0.484	17	0.740	43	0.960	69	1.266	95		
0.495	18	0.750	44	0.969	70	1.274	96		
0.499	19	0.760	45	0.975	71	1.282	97		
0.502	20	0.770	46	0.986	72	1.291	98		
0.510	21	0.778	47	0.993	73	1.308	99		
0.525	22	0.783	48	1.005	74	1.315	100		
0.545	23	0.790	49	1.010	75	1.326	101		
0.560	24	0.801	50	1.020	76	1.340	102		
0.570	25	0.804	51	1.030	77	1.355	103		
0.583	26	0.830	52	1.041	78	1.364	104		
0.600	27	0.830	53	1.050	79	1.376	105		
0.610	28	0.844	54	1.065	80	1.388	106		
0.621	29	0.850	55	1.074	81	1.399	107		
0.635	30	0.860	56	1.090	82	1.412	108		
0.648	31	0.870	57	1.100	83	1.424	109		
0.650	32	0.880	58	1.118	84	1.435	110		
0.660	33	0.885	59	1.130	85	1.446	111		
0.670	34	0.893	60	1.140	86	1.459	112		



CBR Values

Top, mBGL	Base, mBGL	CBR, %[1]
0.38	0.51	30
0.51	0.62	18
0.62	0.98	31
0.98	1.54	21

Note 1:
CBR values calculated in accordance with DMRB CS 229 Data for pavement assessment (2020)

Project Stansted Terminal 2 (ST2) – Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Hole
TP14 DCP

APPENDIX D
INSTRUMENTATION AND MONITORING

Monitoring Installations Summary

Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
CP01 (1)	SP	23/06/2022	50	12.50	11.00 to 12.50		Flush Cover	
CP03 (1)	SP	08/07/2022	50	15.00	13.50 to 15.00		Flush Cover	
CP04 (1)	SP	06/07/2022	50	13.50	12.00 to 13.50		Flush Cover	
CP06 (1)	SP	21/07/2022	50	11.00	9.00 to 11.00		Flush Cover	
CP07 (1)	SP	26/07/2022	50	20.00	5.00 to 20.05		Flush Cover	
CP09 (1)	SP	08/07/2022	50	7.00	4.50 to 7.00		Flush Cover	
CP10 (1)	SP	14/07/2022	50	11.00	10.00 to 11.00		Flush Cover	
CP11 (1)	SP	08/07/2022	50	18.50	16.00 to 18.50		Flush Cover	
DS03 (1)	SP	07/09/2022	50	3.00	2.00 to 3.00	Gas tap	Flush cover	
DS05 (1)	SP	07/09/2022	50	3.50	1.50 to 3.50	Gas tap	Flush cover	
DS06 (1)	SP	23/06/2022	50	3.40	1.00 to 3.40	Gas tap	Flush Cover	
DS08 (1)	SP	05/07/2022	50	1.70	0.80 to 1.70	Gas tap	Flush Cover	
DS10 (1)	SP	05/07/2022	50	2.00	0.50 to 2.00	Gas tap	Flush Cover	
DS13 (1)	SP	07/09/2022	50	4.50	1.50 to 4.50	Gas tap	Flush cover	
DS18 (1)	SP	06/07/2022	50	5.00	3.50 to 5.45	Gas tap	Flush Cover	
DS19 (1)	SP	04/07/2022	50	4.50	3.00 to 4.50	Gas tap	Flush Cover	
RC01 (1)	SP	27/06/2022	50	5.50	2.50 to 5.50	Gas tap	Flush Cover	
RC02 (1)	SP	30/06/2022	50	25.80	22.50 to 25.90		Flush Cover	
RC03 (1)	SP	11/07/2022	50	25.00	22.50 to 25.00		Flush Cover	
RC04 (1)	SP	06/07/2022	50	9.00	5.50 to 9.50		Flush Cover	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result	Comments
CP01 (1)	SP	12.50	02/08/2022 13:43:00	7.33	LNAPL and DNAPL not present.
CP01 (1)	SP	12.50	09/08/2022 09:19:00	7.64	LNAPL and DNAPL not present.
CP01 (1)	SP	12.50	17/08/2022 11:21:00	7.61	LNAPL and DNAPL not present.
CP01 (1)	SP	12.50	23/08/2022 16:00:00	7.56	
CP01 (1)	SP	12.50	06/09/2022 12:04:00	7.62	
CP01 (1)	SP	12.50	20/09/2022 13:05:00	7.76	
CP01 (1)	SP	12.50	04/10/2022 11:50:00	7.82	
CP01 (1)	SP	12.50	18/10/2022 11:50:00	7.89	
CP01 (1)	SP	12.50	01/11/2022 10:56:00	7.68	
CP01 (1)	SP	12.50	10/11/2022 11:35:00	7.63	
CP01 (1)	SP	12.50	15/11/2022 11:32:00	7.34	LNAPL and DNAPL not present.
CP01 (1)	SP	12.50	29/11/2022 10:48:00	7.40	
CP01 (1)	SP	12.50	09/12/2022 10:46:00	7.31	
CP03 (1)	SP	15.00	02/08/2022 14:05:00	8.99	LNAPL and DNAPL not present.
CP03 (1)	SP	15.00	09/08/2022 12:00:00	9.06	LNAPL and DNAPL not present.
CP03 (1)	SP	15.00	17/08/2022 10:09:00	9.04	LNAPL and DNAPL not present.
CP03 (1)	SP	15.00	23/08/2022 15:30:00	9.10	
CP03 (1)	SP	15.00	06/09/2022 11:00:00	9.09	
CP03 (1)	SP	15.00	20/09/2022 12:10:00	9.25	
CP03 (1)	SP	15.00	04/10/2022 11:42:00	9.19	
CP03 (1)	SP	15.00	18/10/2022 11:54:00	9.35	
CP03 (1)	SP	15.00	01/11/2022 10:25:00	9.22	
CP03 (1)	SP	15.00	10/11/2022 11:18:00	9.04	
CP03 (1)	SP	15.00	15/11/2022 10:45:00	8.82	LNAPL and DNAPL not present.
CP03 (1)	SP	15.00	29/11/2022 10:27:00	8.86	
CP03 (1)	SP	15.00	09/12/2022 11:31:00	8.75	
CP04 (1)	SP	13.50	02/08/2022 14:17:00	7.81	LNAPL and DNAPL not present.
CP04 (1)	SP	13.50	17/08/2022 09:21:00	7.89	LNAPL and DNAPL not present.
CP04 (1)	SP	13.50	23/08/2022 14:40:00	7.95	
CP04 (1)	SP	13.50	06/09/2022 10:54:00	7.90	
CP04 (1)	SP	13.50	20/09/2022 12:06:00	8.02	
CP04 (1)	SP	13.50	04/10/2022 11:15:00	7.99	
CP04 (1)	SP	13.50	18/10/2022 10:50:00	8.16	
CP04 (1)	SP	13.50	01/11/2022 09:56:00	7.95	
CP04 (1)	SP	13.50	10/11/2022 10:26:00	7.86	
CP04 (1)	SP	13.50	15/11/2022 11:45:00	4.23	LNAPL and DNAPL not present.
CP04 (1)	SP	13.50	29/11/2022 10:04:00	7.65	
CP04 (1)	SP	13.50	09/12/2022 11:35:00	7.55	
CP06 (1)	SP	11.00	03/08/2022 12:35:00	4.62	LNAPL and DNAPL not present.
CP06 (1)	SP	11.00	16/08/2022 13:59:00	4.68	LNAPL and DNAPL not present.
CP06 (1)	SP	11.00	23/08/2022 13:15:00	4.60	LNAPL and DNAPL not present.
CP06 (1)	SP	11.00	23/08/2022 13:20:00	4.60	
CP06 (1)	SP	11.00	31/08/2022 12:05:00	4.62	
CP06 (1)	SP	11.00	06/09/2022 13:33:00	4.52	
CP06 (1)	SP	11.00	20/09/2022 10:40:00	4.67	
CP06 (1)	SP	11.00	04/10/2022 11:55:00	4.65	
CP06 (1)	SP	11.00	18/10/2022 12:40:00	4.75	
CP06 (1)	SP	11.00	01/11/2022 11:14:00	4.42	
CP06 (1)	SP	11.00	10/11/2022 12:43:00	4.32	
CP06 (1)	SP	11.00	15/11/2022 11:43:00	4.23	LNAPL and DNAPL not present.
CP06 (1)	SP	11.00	29/11/2022 10:54:00	4.27	
CP06 (1)	SP	11.00	09/12/2022 10:30:00	4.23	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

AGS

Project Stansted Terminal 2 (ST2) Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Figure D2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result	Comments
CP07 (1)	SP	20.00	02/08/2022 09:37:00	5.73	LNAPL and DNAPL not present.
CP07 (1)	SP	20.00	16/08/2022 14:20:00	5.37	LNAPL and DNAPL not present.
CP07 (1)	SP	20.00	23/08/2022 08:45:00	5.60	LNAPL and DNAPL not present.
CP07 (1)	SP	20.00	24/08/2022 08:45:00	5.60	
CP07 (1)	SP	20.00	30/08/2022 10:40:00	5.59	
CP07 (1)	SP	20.00	06/09/2022 13:46:00	5.54	
CP07 (1)	SP	20.00	20/09/2022 10:45:00	5.60	
CP07 (1)	SP	20.00	04/10/2022 13:06:00	5.59	
CP07 (1)	SP	20.00	18/10/2022 14:00:00	7.52	
CP07 (1)	SP	20.00	01/11/2022 12:21:00	5.76	
CP07 (1)	SP	20.00	10/11/2022 13:51:00	5.29	
CP07 (1)	SP	20.00	15/11/2022 12:38:00	5.12	LNAPL and DNAPL not present.
CP07 (1)	SP	20.00	29/11/2022 11:55:00	5.28	
CP07 (1)	SP	20.00	09/12/2022 10:37:00	5.38	
CP09 (1)	SP	7.00	02/08/2022 15:20:00	6.47	LNAPL and DNAPL not present.
CP09 (1)	SP	7.00	09/08/2022 16:21:00	6.40	LNAPL and DNAPL not present.
CP09 (1)	SP	7.00	17/08/2022 12:46:00	6.61	LNAPL and DNAPL not present.
CP09 (1)	SP	7.00	23/08/2022 15:15:00	1.75	LNAPL and DNAPL not present.
CP09 (1)	SP	7.00	06/09/2022 10:02:00	2.65	
CP09 (1)	SP	7.00	20/09/2022 10:52:00	2.93	
CP09 (1)	SP	7.00	04/10/2022 09:40:00	Dry	
CP09 (1)	SP	7.00	18/10/2022 09:10:00	2.97	
CP09 (1)	SP	7.00	01/11/2022 08:23:00	2.55	
CP09 (1)	SP	7.00	10/11/2022 09:30:00	2.56	
CP09 (1)	SP	7.00	15/11/2022 09:00:00	2.48	LNAPL and DNAPL not present.
CP09 (1)	SP	7.00	29/11/2022 09:06:00	2.55	
CP09 (1)	SP	7.00	09/12/2022 12:27:00	2.66	
CP10 (1)	SP	11.00	02/08/2022 12:13:00	2.42	LNAPL and DNAPL not present.
CP10 (1)	SP	11.00	16/08/2022 10:30:00	2.33	LNAPL and DNAPL not present.
CP10 (1)	SP	11.00	23/08/2022 11:50:00	2.22	
CP10 (1)	SP	11.00	31/08/2022 10:00:00	2.25	
CP10 (1)	SP	11.00	06/09/2022 13:38:00	2.27	
CP10 (1)	SP	11.00	20/09/2022 10:34:00	2.37	
CP10 (1)	SP	11.00	04/10/2022 12:31:00	2.36	
CP10 (1)	SP	11.00	18/10/2022 13:10:00	2.49	
CP10 (1)	SP	11.00	01/11/2022 12:16:00	2.45	
CP10 (1)	SP	11.00	10/11/2022 13:28:00	2.46	
CP10 (1)	SP	11.00	15/11/2022 12:33:00	2.50	LNAPL and DNAPL not present.
CP10 (1)	SP	11.00	29/11/2022 11:50:00	2.54	
CP10 (1)	SP	11.00	09/12/2022 09:50:00	2.55	
CP11 (1)	SP	18.50	02/08/2022 12:01:00	1.95	LNAPL and DNAPL not present.
CP11 (1)	SP	18.50	16/08/2022 12:40:00	2.06	LNAPL and DNAPL not present.
CP11 (1)	SP	18.50	23/08/2022 10:30:00	5.60	
CP11 (1)	SP	18.50	31/08/2022 09:40:00	2.76	
CP11 (1)	SP	18.50	06/09/2022 13:16:00	3.80	
CP11 (1)	SP	18.50	20/09/2022 09:40:00	2.63	
CP11 (1)	SP	18.50	04/10/2022 12:24:00	2.23	Flooded to bung.
CP11 (1)	SP	18.50	18/10/2022 13:53:00	1.74	
CP11 (1)	SP	18.50	01/11/2022 11:42:00	1.38	
CP11 (1)	SP	18.50	10/11/2022 13:06:00	1.29	
CP11 (1)	SP	18.50	15/11/2022 12:08:00	1.53	LNAPL and DNAPL not present.
CP11 (1)	SP	18.50	29/11/2022 11:16:00	1.16	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

AGS

Project Stansted Terminal 2 (ST2) Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Figure D2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result	Comments
CP11 (1)	SP	18.50	09/12/2022 09:20:00	0.95	
DS03 (1)	SP	3.00	20/09/2022 12:35:00	Dry	
DS03 (1)	SP	3.00	04/10/2022 11:40:00		Damp
DS03 (1)	SP	3.00	18/10/2022 11:16:00	Dry	
DS03 (1)	SP	3.00	01/11/2022 10:20:00	1.30	
DS03 (1)	SP	3.00	10/11/2022 10:52:00	0.47	
DS03 (1)	SP	3.00	15/11/2022 10:23:00	0.85	LNAPL and DNAPL not present.
DS03 (1)	SP	3.00	29/11/2022 10:23:00	0.50	
DS03 (1)	SP	3.00	09/12/2022 11:28:00	0.91	
DS05 (1)	SP	3.50	20/09/2022 12:00:00	1.40	
DS05 (1)	SP	3.50	04/10/2022 11:00:00	1.97	Went dry on purge.
DS05 (1)	SP	3.50	18/10/2022 10:30:00	1.50	
DS05 (1)	SP	3.50	01/11/2022 09:30:00		Unable to dip due to flooding.
DS05 (1)	SP	3.50	10/11/2022 12:30:00		Flooded
DS05 (1)	SP	3.50	15/11/2022 09:52:00	1.24	LNAPL and DNAPL not present.
DS05 (1)	SP	3.50	09/12/2022 11:55:00	1.14	
DS06 (1)	SP	3.40	02/08/2022 14:50:00	2.54	LNAPL and DNAPL not present.
DS06 (1)	SP	3.40	09/08/2022 15:10:00	2.69	LNAPL and DNAPL not present.
DS06 (1)	SP	3.40	17/08/2022 09:10:00	2.58	LNAPL and DNAPL not present.
DS06 (1)	SP	3.40	24/08/2022 10:00:00	2.59	
DS06 (1)	SP	3.40	30/08/2022 09:45:00	1.78	
DS06 (1)	SP	3.40	06/09/2022 10:40:00	1.92	
DS06 (1)	SP	3.40	20/09/2022 11:39:00	2.04	
DS06 (1)	SP	3.40	04/10/2022 10:43:00	1.97	
DS06 (1)	SP	3.40	09/12/2022 12:18:00	1.76	
DS08 (1)	SP	1.70	02/08/2022 11:51:00	Dry	LNAPL and DNAPL not present.
DS08 (1)	SP	1.70	16/08/2022 11:00:00	Dry	LNAPL and DNAPL not present.
DS08 (1)	SP	1.70	24/08/2022 10:40:00	Dry	LNAPL and DNAPL not present.
DS08 (1)	SP	1.70	31/08/2022 10:30:00	Dry	
DS08 (1)	SP	1.70	06/09/2022 13:09:00	1.20	Gas tap left open
DS08 (1)	SP	1.70	20/09/2022 10:30:00	1.56	
DS08 (1)	SP	1.70	04/10/2022 12:19:00	1.54	
DS08 (1)	SP	1.70	18/10/2022 13:03:00		Damp
DS08 (1)	SP	1.70	01/11/2022 11:26:00	1.55	
DS08 (1)	SP	1.70	01/11/2022 11:38:00	1.59	
DS08 (1)	SP	1.70	10/11/2022 13:03:00	1.39	
DS08 (1)	SP	1.70	15/11/2022 12:05:00	1.53	LNAPL and DNAPL not present.
DS08 (1)	SP	1.70	29/11/2022 11:13:00	1.47	
DS08 (1)	SP	1.70	09/12/2022 09:45:00	1.55	
DS10 (1)	SP	2.00	02/08/2022 13:03:00	Dry	LNAPL and DNAPL not present.
DS10 (1)	SP	2.00	16/08/2022 10:11:00	Dry	LNAPL and DNAPL not present.
DS10 (1)	SP	2.00	24/08/2022 11:00:00	Dry	LNAPL and DNAPL not present.
DS10 (1)	SP	2.00	31/08/2022 09:35:00	Dry	
DS10 (1)	SP	2.00	06/09/2022 13:09:00	Dry	
DS10 (1)	SP	2.00	20/09/2022 10:04:00	Dry	
DS10 (1)	SP	2.00	04/10/2022 13:01:00	Dry	
DS10 (1)	SP	2.00	04/10/2022 14:02:00	Dry	
DS10 (1)	SP	2.00	18/10/2022 00:00:00	Dry	
DS10 (1)	SP	2.00	01/11/2022 12:00:00		Damp
DS10 (1)	SP	2.00	10/11/2022 13:24:00	1.85	
DS10 (1)	SP	2.00	15/11/2022 12:25:00	1.85	LNAPL and DNAPL not present.
DS10 (1)	SP	2.00	29/11/2022 11:40:00	1.81	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

Project Stansted Terminal 2 (ST2) Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Figure D2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result	Comments
DS10 (1)	SP	2.00	09/12/2022 10:24:00	1.84	
DS13 (1)	SP	4.50	20/09/2022 11:13:00	3.77	
DS13 (1)	SP	4.50	04/10/2022 10:00:00	2.72	
DS13 (1)	SP	4.50	18/10/2022 09:40:00	2.78	
DS13 (1)	SP	4.50	01/11/2022 08:30:00	2.52	
DS13 (1)	SP	4.50	10/11/2022 10:00:00	2.34	
DS13 (1)	SP	4.50	15/11/2022 09:17:00	2.61	LNAPL and DNAPL not present.
DS13 (1)	SP	4.50	29/11/2022 09:26:00	2.49	
DS13 (1)	SP	4.50	09/12/2022 12:47:00	2.63	
DS18 (1)	SP	5.00	02/08/2022 15:32:00	4.73	LNAPL and DNAPL not present.
DS18 (1)	SP	5.00	17/08/2022 16:36:00	4.75	LNAPL and DNAPL not present.
DS18 (1)	SP	5.00	24/08/2022 12:55:00	4.74	LNAPL and DNAPL not present.
DS18 (1)	SP	5.00	30/08/2022 11:55:00	4.32	
DS18 (1)	SP	5.00	06/09/2022 16:09:00	4.23	
DS18 (1)	SP	5.00	20/09/2022 14:55:00	4.07	
DS18 (1)	SP	5.00	04/10/2022 13:49:00	3.91	
DS18 (1)	SP	5.00	18/10/2022 15:09:00	3.54	
DS18 (1)	SP	5.00	01/11/2022 14:20:00	3.68	
DS18 (1)	SP	5.00	10/11/2022 14:31:00	3.55	
DS18 (1)	SP	5.00	15/11/2022 13:20:00	1.57	LNAPL and DNAPL not present.
DS18 (1)	SP	5.00	29/11/2022 12:37:00	3.50	
DS18 (1)	SP	5.00	09/12/2022 13:31:00	3.52	
DS19 (1)	SP	4.50	03/08/2022 11:57:00	3.45	LNAPL and DNAPL not present.
DS19 (1)	SP	4.50	17/08/2022 16:17:00	3.55	LNAPL and DNAPL not present.
DS19 (1)	SP	4.50	24/08/2022 13:30:00	3.57	LNAPL and DNAPL not present.
DS19 (1)	SP	4.50	30/08/2022 11:45:00	2.82	
DS19 (1)	SP	4.50	06/09/2022 15:41:00	2.76	
DS19 (1)	SP	4.50	20/09/2022 14:32:00	2.75	
DS19 (1)	SP	4.50	04/10/2022 14:09:00	Dry	
DS19 (1)	SP	4.50	18/10/2022 15:33:00	2.84	
DS19 (1)	SP	4.50	01/11/2022 14:40:00	2.05	
DS19 (1)	SP	4.50	10/11/2022 14:19:00	1.95	
DS19 (1)	SP	4.50	15/11/2022 13:40:00	1.93	4.79 LNAPL and DNAPL not present.
DS19 (1)	SP	4.50	29/11/2022 13:00:00	1.80	
DS19 (1)	SP	4.50	09/12/2022 13:50:00	1.90	
RC01 (1)	SP	5.50	03/08/2022 13:56:00	4.29	LNAPL and DNAPL not present.
RC01 (1)	SP	5.50	09/08/2022 10:05:00	4.39	LNAPL and DNAPL not present.
RC01 (1)	SP	5.50	17/08/2022 10:58:00	5.14	LNAPL and DNAPL not present.
RC01 (1)	SP	5.50	24/08/2022 09:40:00	Dry	LNAPL and DNAPL not present.
RC01 (1)	SP	5.50	30/08/2022 10:10:00	Dry	
RC01 (1)	SP	5.50	06/09/2022 11:35:00	5.50	
RC01 (1)	SP	5.50	20/09/2022 13:00:00	5.54	
RC01 (1)	SP	5.50	04/10/2022 11:30:00		Damp
RC01 (1)	SP	5.50	18/10/2022 11:44:00		Damp
RC01 (1)	SP	5.50	01/11/2022 10:50:00	1.18	
RC01 (1)	SP	5.50	10/11/2022 11:55:00	1.05	
RC01 (1)	SP	5.50	15/11/2022 11:28:00	1.16	LNAPL and DNAPL not present.
RC01 (1)	SP	5.50	29/11/2022 10:45:00	1.13	
RC01 (1)	SP	5.50	09/12/2022 11:07:00	1.31	
RC02 (1)	SP	25.80	03/08/2022 15:00:00	9.02	LNAPL and DNAPL not present.
RC02 (1)	SP	25.80	09/08/2022 14:50:00	9.10	LNAPL and DNAPL not present.
RC02 (1)	SP	25.80	16/08/2022 15:00:00	10.60	LNAPL and DNAPL not present.

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

Project Stansted Terminal 2 (ST2) Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Figure D2

Groundwater Monitoring

Instrument Reference	Instrument Type	Instrument Base, mbgl	Date Time dd/mm/yyyy hh:mm:ss	Result	Comments
RC02 (1)	SP	25.80	23/08/2022 14:00:00	10.25	LNAPL and DNAPL not present.
RC02 (1)	SP	25.80	06/09/2022 10:13:00	8.41	
RC02 (1)	SP	25.80	20/09/2022 11:18:00	8.14	
RC02 (1)	SP	25.80	04/10/2022 10:37:00	7.96	
RC02 (1)	SP	25.80	18/10/2022 12:15:00	7.91	
RC02 (1)	SP	25.80	01/11/2022 11:03:00	7.86	
RC02 (1)	SP	25.80	10/11/2022 12:03:00	7.86	
RC02 (1)	SP	25.80	15/11/2022 11:37:00	7.86	LNAPL and DNAPL not present.
RC02 (1)	SP	25.80	29/11/2022 09:30:00	7.86	
RC02 (1)	SP	25.80	09/12/2022 12:23:00	7.73	
RC03 (1)	SP	25.00	03/08/2022 12:07:00	7.80	LNAPL and DNAPL not present.
RC03 (1)	SP	25.00	17/08/2022 13:54:00	7.84	LNAPL and DNAPL not present.
RC03 (1)	SP	25.00	23/08/2022 12:30:00	8.34	Pump stuck at 11.72
RC03 (1)	SP	25.00	24/08/2022 12:45:00	8.34	
RC03 (1)	SP	25.00	30/08/2022 12:05:00	11.53	
RC03 (1)	SP	25.00	06/09/2022 14:20:00	10.45	
RC03 (1)	SP	25.00	20/09/2022 14:07:00	9.94	
RC03 (1)	SP	25.00	04/10/2022 14:19:00	9.01	
RC03 (1)	SP	25.00	18/10/2022 14:44:00	8.59	
RC03 (1)	SP	25.00	01/11/2022 14:50:00	8.52	
RC03 (1)	SP	25.00	10/11/2022 14:03:00	8.48	
RC03 (1)	SP	25.00	15/11/2022 12:55:00	8.47	LNAPL and DNAPL not present.
RC03 (1)	SP	25.00	29/11/2022 12:18:00	8.46	
RC03 (1)	SP	25.00	09/12/2022 13:53:00	2.47	
RC04 (1)	SP	9.00	03/08/2022 13:09:00	2.15	LNAPL and DNAPL not present.
RC04 (1)	SP	9.00	16/08/2022 09:05:00	2.07	LNAPL and DNAPL not present.
RC04 (1)	SP	9.00	23/08/2022 09:24:00	2.03	LNAPL and DNAPL not present.
RC04 (1)	SP	9.00	31/08/2022 09:00:00	1.75	
RC04 (1)	SP	9.00	06/09/2022 12:47:00	2.00	
RC04 (1)	SP	9.00	20/09/2022 10:08:00	1.80	
RC04 (1)	SP	9.00	04/10/2022 12:38:00	1.83	
RC04 (1)	SP	9.00	18/10/2022 13:40:00	1.87	
RC04 (1)	SP	9.00	01/11/2022 12:11:00	1.15	
RC04 (1)	SP	9.00	10/11/2022 13:10:00	0.00	
RC04 (1)	SP	9.00	15/11/2022 12:29:00	0.50	LNAPL and DNAPL not present.
RC04 (1)	SP	9.00	29/11/2022 11:46:00	0.22	
RC04 (1)	SP	9.00	09/12/2022 10:00:00	0.33	

Notes: Type: SP - Standpipe, SPIE - Standpipe Piezometer, HPIE - Hydraulic Piezometer, PPIE - Pneumatic Piezometer, EPIE - Vibrating Wire Piezometer, PWEL - Pumping Well

AGS

Project Stansted Terminal 2 (ST2) Ground Investigation

Project No. D2027-22

Carried out for Marriott Civils

Figure D2

Gas Monitoring Summary

SOCOTEC

Notes: Peak gas concentrations, flow rates and differential pressures represent the interpreted highest values (or lowest gas concentration value for oxygen) recorded during the monitoring period. Steady state values are taken as the end of monitoring values. Values below the limit of detection (LoD) of the monitoring equipment are recorded as the LoD value preceded by '<' (eg <0.1) .

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

D3

Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), Pa	Diff Press (st), Pa	Gas Flow Rate (pk), l/hr	Gas Flow Rate (st), l/hr	CO2 (pk), %vol	CO2 (st), %vol	CO (pk), ppm	CO (st), ppm	O2 (min), %vol	O2 (st), %vol	H2S (pk), ppm	H2S (st), ppm	CH4 (pk), %vol	CH4 (st), %vol
DS03 (1)																	
	20 Sep 2022	19	1015	<1	<1	<0.1	<0.1	3.8	3.4	1	<1	16.8	17.2	<1	<1	0.1	0.1
	04 Oct 2022	16	1005	<1	<1	<0.1	<0.1	3.8	3.3	1	<1	16	16.5	<1	<1	0.2	0.2
	18 Oct 2022	11	1017	<1	<1	<0.1	<0.1	2.9	2.8	<1	<1	17.6	17.7	<1	<1	0.2	0.1
	01 Nov 2022	13	994	33	33	<0.1	<0.1	0.1	0.1	<1	<1	20.9	20.9	<1	<1	0.2	0.2
	10 Nov 2022	13	1009	64	64	-11.9	-11.9	0.8	0.8	1	1	17.9	17.9	<1	<1	0.1	0.1
	15 Nov 2022	11	985	22	22	2.4	2.4	0.7	0.7	<1	<1	20.5	20.5	<1	<1	0.1	0.1
	29 Nov 2022	6	1008	56	56	-6.4	-6.4	0.9	0.9	1	1	19.4	19.4	<1	<1	0.3	0.3
	09 Dec 2022	-1	995	-53	-53	4.4	4.4	1	1	<1	<1	19	19	<1	<1	0.3	0.3
DS05 (1)																	
	20 Sep 2022	15	1015	<1	<1	<0.1	<0.1	0.1	0	1	<1	21	21	<1	<1	0.1	0.1
	04 Oct 2022	14	1006	15	15	5.4	<0.1	0.1	0	6	1	20.7	20.7	<1	<1	0.2	0.2
	18 Oct 2022	11	1016	<1	<1	<0.1	<0.1	0.1	0	2	<1	20.8	19.3	<1	<1	0.3	0.2
	01 Nov 2022	13	994	16	16	-2.4	-2.4	0.1	0.1	3	3	19.7	11.3	<1	<1	0.3	0.3
	10 Nov 2022	13	1008	-51	-51	<0.1	<0.1	0.2	0.2	<1	<1	21.2	21.2	<1	<1	0.1	0.1
	15 Nov 2022	11	985	7	5	0.2	<0.1	0.1	0.1	<1	<1	12.5	12.5	<1	<1	0.2	0.2
	29 Nov 2022	6	1008	-26	-26	1.2	1.2	0.2	0.2	<1	<1	21.2	21.2	<1	<1	0.3	0.3
	09 Dec 2022	-1	996	16	16	<0.1	<0.1	0.2	0.2	<1	<1	21.9	21.9	<1	<1	0.3	0.3
DS06 (1)																	
	02 Aug 2022	27	1003	<1	<1	0.1	0.1	<0.1	<0.1	7	3	19.5	19.5	<1	<1	1	1
	09 Aug 2022	27	1016	<1	<1	<0.1	<0.1	<0.1	<0.1	3	2	18.8	18.8	1	1	<0.1	<0.1
	17 Aug 2022	24	1000	<1	<1	0.3	0.3	0.1	0	1	<1	20.3	20.3	<1	<1	0.1	<0.1
	30 Aug 2022	18	1011	<1	<1	<0.1	<0.1	0.1	0	<1	<1	17.8	17.8	<1	<1	0.1	0.1
	06 Sep 2022	20	1001	<1	<1	<0.1	<0.1	0.1	0	<1	<1	19.5	19.5	<1	<1	0.1	0.1
	20 Sep 2022	15	1015	<1	<1	-0.1	-0.1	0.1	0	1	<1	20.3	20.3	<1	<1	0.2	0.2
	04 Oct 2022	15	1005	<1	<1	-0.2	-0.2	0.1	0	<1	<1	20.3	20.3	<1	<1	0.2	0.2
	09 Dec 2022	0	996	41	41	<0.1	<0.1	0.2	0.2	<1	<1	21.8	21.8	<1	<1	0.3	0.3
DS08 (1)																	
	02 Aug 2022	27	1003	<1	<1	0.1	0.1	0.1	0	7	2	0.1	0.1	<1	<1	0.3	0.2
	16 Aug 2022	24	996	<1	<1	0.3	0.3	0.1	0	5	4	0.1	0.1	<1	<1	0.6	0.6
	24 Aug 2022	21	1005	<1	<1	<0.1	<0.1	<0.1	<0.1	5	3	0.1	0.1	<1	<1	0.6	0.6
	31 Aug 2022	19	1013	<1	<1	0.2	0.2	<0.1	<0.1	1	<1	0.1	0.1	<1	<1	0.5	0.5
	20 Sep 2022	15	1015	-1	-1	<0.1	<0.1	0.1	0.1	<1	<1	1.3	1.3	<1	<1	0.2	0.2
	18 Oct 2022	16	1017	<1	<1	<0.1	<0.1	0.1	0.1	1	<1	0.6	0.1	<1	<1	0.1	0.2
	01 Nov 2022	13	995	34	34	-0.1	-0.1	0.1	0.1	<1	<1	21	21	<1	<1	0.2	0.2
	10 Nov 2022	13	1008	<1	<1	<0.1	<0.1	0.1	0.1	<1	<1	21.3	21.3	<1	<1	0.1	0.1
	15 Nov 2022	11	985	<1	<1	<0.1	<0.1	0.1	0.1	<1	<1	0.9	0.9	<1	<1	0.2	0.2
	29 Nov 2022	6	1008	<1	<1	<0.1	<0.1	0.1	0.1	<1	<1	0.3	0.3	<1	<1	0.2	0.2
	29 Nov 2022	6	1009	<1	<1	<0.1	<0.1	0.3	0.3	<1	<1	4.2	4.2	<1	<1	0.2	0.2
	09 Dec 2022	-1	995	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	10.6	10.6	<1	<1	0.4	0.4
DS10 (1)																	
	16 Aug 2022	24	995	<1	<1	0.4	0.4	0.3	0.3	2	1	1.5	1.5	<1	<1	<0.1	<0.1
	24 Aug 2022	21	1005	<1	<1	0.2	0.2	0.2	0.2	<1	<1	0.8	0.8	<1	<1	<0.1	<0.1
	31 Aug 2022	18	1013	<1	<1	<0.1	<0.1	0.3	0.3	<1	<1	0.8	0.8	<1	<1	0.1	0.1
	06 Sep 2022	22	1001	<1	<1	<0.1	<0.1	0.2	0.2	3	<1	1	1	<1	<1	0.1	0.1
	20 Sep 2022	15	1014	<1	<1	<0.1	<0.1	0.3	0.3	<1	<1	0.9	0.9	<1	<1	0.3	0.3
	18 Oct 2022	16	1017	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	2	2	<1	<1	<0.1	<0.1
	01 Nov 2022	13	995	31	31	<0.1	<0.1	0.1	0.1	<1	<1	21.1	21.1	<1	<1	0.1	0.1
	10 Nov 2022	13	1008	2	2	<0.1	<0.1	0.2	0.2	<1	<1	21.3	21.3	<1	<1	0.1	0.1
	09 Dec 2022	-1	996	<1	<1	<0.1	-0.1	0.4	0.4	<1	<1	5.2	5.2	<1	<1	0.4	0.4
DS13 (1)																	
	20 Sep 2022	15	1015	<1	<1	-0.1	-0.1	0.2	0.2	1	<1	20.1	20.1	<1	<1	0.2	0.2
	04 Oct 2022	14	1005	<1	<1	<0.1	<0.1	0.4	0.4	<1	<1	19.4	19.4	<1	<1	0.2	0.2
	18 Oct 2022	11	1016	<1	<1	-0.1	-0.1	0.3	0.3	<1	<1	20.7	19.9	<1	<1	0.2	0.2
	01 Nov 2022	13	993	<1	<1	-0.1	-0.1	0.3	0.3	<1	<1	20.1	20.1	<1	<1	0.2	0.2
	10 Nov 2022	13	1007	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	21.1	20.7	<1	<1	0.2	0.1
	15 Nov 2022	11	985	<1	<1	<0.1	<0.1	0.1	0.1	<1	<1	21.4	21.4	<1	<1	0.2	0.2
	29 Nov 2022	6	1008	<1	<1	<0.1	<0.1	0.3	0.3	<1	<1	20.7	20.7	<1	<1	0.3	0.3
	09 Dec 2022	0	996	40	40	<0.1	-0.1	0.3	0.2	<1	<1	21	21.4	<1	<1	0.3	0.3
DS18 (1)																	
	17 Aug 2022	19	1001	<1	<1	0.3	0.3	0.8	0.4	8	<1	20.5	20.8	<1	<1	<0.1	<0.1
	30 Aug 2022	21	1013	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	19.7	19.7	<1	<1	<0.1	<0.1
	06 Sep 2022	22	999	<1	<1	<0.1	<0.1	0.5	0.2	3	<1	20.9	21.5	<1	<1	0.1	0.1
	20 Sep 2022	19	1014	<1	<1	-0.1	-0.1	0.4	0.2	<1	<1	20.4	20.6	<1	<1	0.1	0.1
	18 Oct 2022	17	1016	<1	<1	<0.1	<0.1	0.7	0.1	8	<1	20.5	20.5	<1	<1	0.1	0.1
	01 Nov 2022	13	988	20	20	<0.1	<0.1	0.1	0.1	<1	<1	21.3	21.3	<1	<1	0.2	0.2
	10 Nov 2022	13	1009	4	4	<0.1	<0.1	0.1	0.1	<1	<1	21.4	21.4	<1	<1	0.1	0.1
	15 Nov 2022	11	981	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	19.8	21.4	<1	<1	0.1	0.1
	29 Nov 2022	6	1009	<1	<1	<0.1	<0.1	0.2	0.1	<1	<1	20.7	21.1	<1	<1	0.2	0.2
	09 Dec 2022	1	995	2	<1	<0.1	-0.1	0.2	0.2	<1	<1	21.7	21.8	<1	<1	0.3	0.3

Gas Monitoring Summary

Notes: Peak gas concentrations, flow rates and differential pressures represent the interpreted highest values (or lowest gas concentration value for oxygen) recorded during the monitoring period. Steady state values are taken as the end of monitoring values. Values below the limit of detection (LoD) of the monitoring equipment are recorded as the LoD value preceded by '<' (eg <0.1) .

Project Stansted Terminal 2 (ST2) Ground Investigation
Project No. D2027-22
Carried out for Marriott Civils

D3

Location	Date	Air Temp, oC	Baro Press, mbar	Diff Press (pk), Pa	Diff Press (st), Pa	Gas Flow Rate (pk), l/hr	Gas Flow Rate (st), l/hr	CO2 (pk), %vol	CO2 (st), %vol	CO (pk), ppm	CO (st), ppm	O2 (min), %vol	O2 (st), %vol	H2S (pk), ppm	H2S (st), ppm	CH4 (pk), %vol	CH4 (st), %vol
DS19 (1)																	
	17 Aug 2022	19	1001	<1	<1	0.3	0.3	2.2	2.2	8	<1	18.8	18.8	<1	<1	<0.1	<0.1
	30 Aug 2022	21	1012	<1	<1	<0.1	<0.1	2.6	2.6	<1	<1	15.5	15.5	<1	<1	0.1	0.1
	06 Sep 2022	22	999	<1	<1	<0.1	<0.1	0.8	0.6	3	<1	19.9	20.1	<1	<1	0.1	0.1
	20 Sep 2022	19	1014	<1	<1	<0.1	<0.1	2.3	2.1	<1	<1	18.7	18.7	<1	<1	0.1	0.1
	18 Oct 2022	17	1017	<1	<1	-0.1	-0.1	1.7	1.7	6	<1	18.8	19.2	<1	<1	0.1	0.1
	01 Nov 2022	13	988	34	34	<0.1	<0.1	0.1	0.1	<1	<1	21.2	21.2	<1	<1	0.2	0.2
	10 Nov 2022	13	1009	5	5	<0.1	<0.1	0.1	0.1	<1	<1	21.3	21.3	<1	<1	0.1	0.1
	15 Nov 2022	11	981	2	2	0.1	0.1	1	0.3	4	<1	20.4	21.3	<1	<1	0.1	0.1
	29 Nov 2022	6	1009	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	21.4	21.4	<1	<1	0.2	0.2
	09 Dec 2022	1	995	3	3	<0.1	<0.1	1	0.5	3	<1	21.3	21.5	<1	<1	0.2	0.2
RC01 (1)																	
	17 Aug 2022	24	1000	<1	<1	0.3	0.3	1.6	1.5	3	<1	16	16.1	<1	<1	<0.1	<0.1
	24 Aug 2022	21	1005	<1	<1	0.1	0.1	0.9	2	2	1	18.4	15.6	<1	<1	0.1	0.1
	30 Aug 2022	18	1011	<1	<1	<0.1	<0.1	0.8	2.2	<1	<1	18.7	14.8	<1	<1	0.1	0.1
	06 Sep 2022	22	1001	<1	<1	<0.1	<0.1	1.4	1.4	<1	<1	17.7	17.7	<1	<1	0.1	0.1
	20 Sep 2022	19	1015	<1	<1	<0.1	<0.1	3	3	<1	<1	14.8	14.8	<1	<1	0.1	0.1
	18 Oct 2022	11	1017	<1	<1	<0.1	<0.1	0.2	2.6	<1	<1	21.2	16.7	<1	<1	0.1	0.1
	01 Nov 2022	13	995	27	27	<0.1	<0.1	0.1	0.1	<1	<1	21.3	21.3	<1	<1	0.2	0.2
	10 Nov 2022	13	1001	<1	<1	<0.1	<0.1	<0.1	<0.1	<1	<1	21.2	21.2	<1	<1	0.1	0.1
	29 Nov 2022	6	1008	<1	<1	<0.1	<0.1	0.2	0.2	<1	<1	21.3	21.4	<1	<1	0.3	0.3
	09 Dec 2022	-1	995	<1	<1	<0.1		0.5	0.4	<1	<1	21.3	21.7	<1	<1	0.3	0.3

APPENDIX E
GEOTECHNICAL LABORATORY TEST RESULTS

PSL Laboratory Report No.	PSL4633 (22-14047), PSL4652 (22-13770) PSL4653 (22-13762), PSL4751, PSL4752 PSL4753 (22-14261), PSL4955 PSL5218 (22-16544), PSL5219 (22-16534) PSL5374 (22-16779), PSL5386 PSL5410 (22-16884), PSL5488 (22-17193, 115685) PSL5489 (22-17197), PSL5490 (22-17194) PSL6392 (114361), PSL6393 (114358) PSL6394 (114371), PSL6633 (114980), PSL0664 Subcontract report number for chemical testing in brackets

LABORATORY REPORT

4043

Contract Number: PSL22/4633

Report Date: 26 July 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 11/7/2022
Date Commenced: 11/7/2022
Date Completed: 26/7/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
		[redacted]
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

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fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP01	7	D	0.90	0.90	Brown gravelly sandy CLAY.
TP01	9	B	1.50	2.00	Brown very gravelly sandy CLAY.
TP01	13	D	2.60		Brown gravelly very sandy CLAY.
TP02	3	D	0.50		Brown gravelly sandy CLAY.
TP02	5	B	0.80		Brown gravelly sandy CLAY.
TP02	13	D	2.50		Brown gravelly sandy CLAY.
TP02	12	B	3.00		Brown gravelly sandy CLAY.
TP03	5	D	0.60		Brown gravelly very sandy CLAY.
TP03	8	B	1.10	1.50	Brown gravelly very sandy CLAY.
TP03	9	D	1.60		Brown gravelly sandy CLAY.
TP03	14	D	2.50		Brown gravelly sandy CLAY.
TP03	16	B	3.20	3.60	Brown gravelly sandy CLAY.
TP04	7	B	1.00	1.50	Brown very gravelly sandy CLAY.
TP04	9	D	2.00		Brown gravelly very sandy CLAY.
TP04	14	D	3.20		Brown gravelly sandy CLAY.
TP04	15	B	3.50	4.00	Brown very gravelly sandy CLAY.
TP05	7	D	1.00		Brown gravelly sandy CLAY.
TP05	15	B	2.40	2.60	Brown mottled grey slightly gravelly sandy CLAY.
TP05	16	D	3.00		Brown gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP06	8	D	1.00		Brown very gravelly sandy CLAY.
TP06	11	B	1.30	1.70	Brown very gravelly sandy CLAY.
TP06	13	D	2.10		Brown gravelly sandy CLAY.
TP06	17	D	3.20		Brown slightly gravelly sandy CLAY.
TP06	22	D	4.00		Brown gravelly sandy CLAY.
TP07	6	D	0.80		Brown very gravelly sandy CLAY.
TP07	13	D	2.30		Brown gravelly sandy CLAY.
TP07	15	B	2.50	3.00	Brown gravelly very sandy CLAY.
TP07	17	D	3.10		Brown gravelly sandy CLAY.
TP07	20	D	3.70		Brown gravelly sandy CLAY.

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
TP01	7	D	0.90	0.90	15					
TP01	13	D	2.60		17					
TP02	3	D	0.50		14					
TP02	13	D	2.50		14					
TP03	5	D	0.60		17					
TP03	9	D	1.60		15					
TP03	14	D	2.50		15					
TP04	9	D	2.00		19					
TP04	14	D	3.20		16					
TP05	7	D	1.00		18					
TP05	16	D	3.00		16					
TP06	8	D	1.00		15					
TP06	13	D	2.10		14					
TP06	17	D	3.20		25					
TP06	22	D	4.00		17					
TP07	6	D	0.80		12					
TP07	13	D	2.30		17					
TP07	17	D	3.10		17					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/4633
Client Ref:
D2027-22

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
TP07	20	D	3.70		18					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:

PSL22/4633

Client Ref:

D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP01	7	D	0.90	0.90				44	21	23	87	Intermediate Plasticity CI
TP01	13	D	2.60					34	17	17	84	Low Plasticity CL
TP02	3	D	0.50					38	19	19	88	Intermediate Plasticity CI
TP02	13	D	2.50					34	17	17	86	Low Plasticity CL
TP03	9	D	1.60					36	18	18	87	Intermediate Plasticity CI
TP03	14	D	2.50					35	18	17	81	Intermediate Plasticity CI
TP04	9	D	2.00					33	17	16	80	Low Plasticity CL
TP05	7	D	1.00					37	18	19	89	Intermediate Plasticity CI
TP05	16	D	3.00					42	21	21	87	Intermediate Plasticity CI
TP06	8	D	1.00					46	22	24	60	Intermediate Plasticity CI
TP06	13	D	2.10					40	19	21	88	Intermediate Plasticity CI
TP06	22	D	4.00					39	19	20	87	Intermediate Plasticity CI
TP07	13	D	2.30					45	22	23	86	Intermediate Plasticity CI
TP07	20	D	3.70					38	19	19	87	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

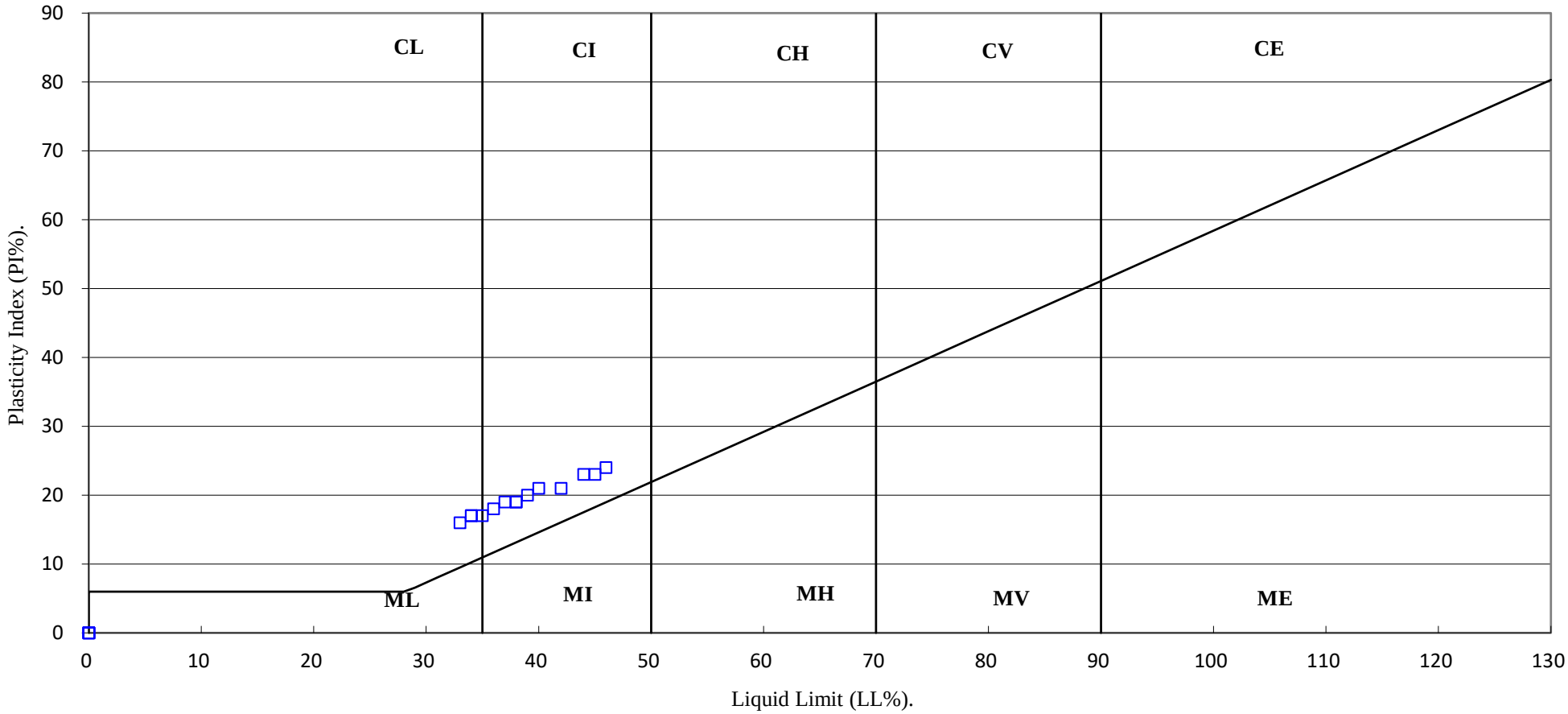
PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/4633

Client Ref: D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



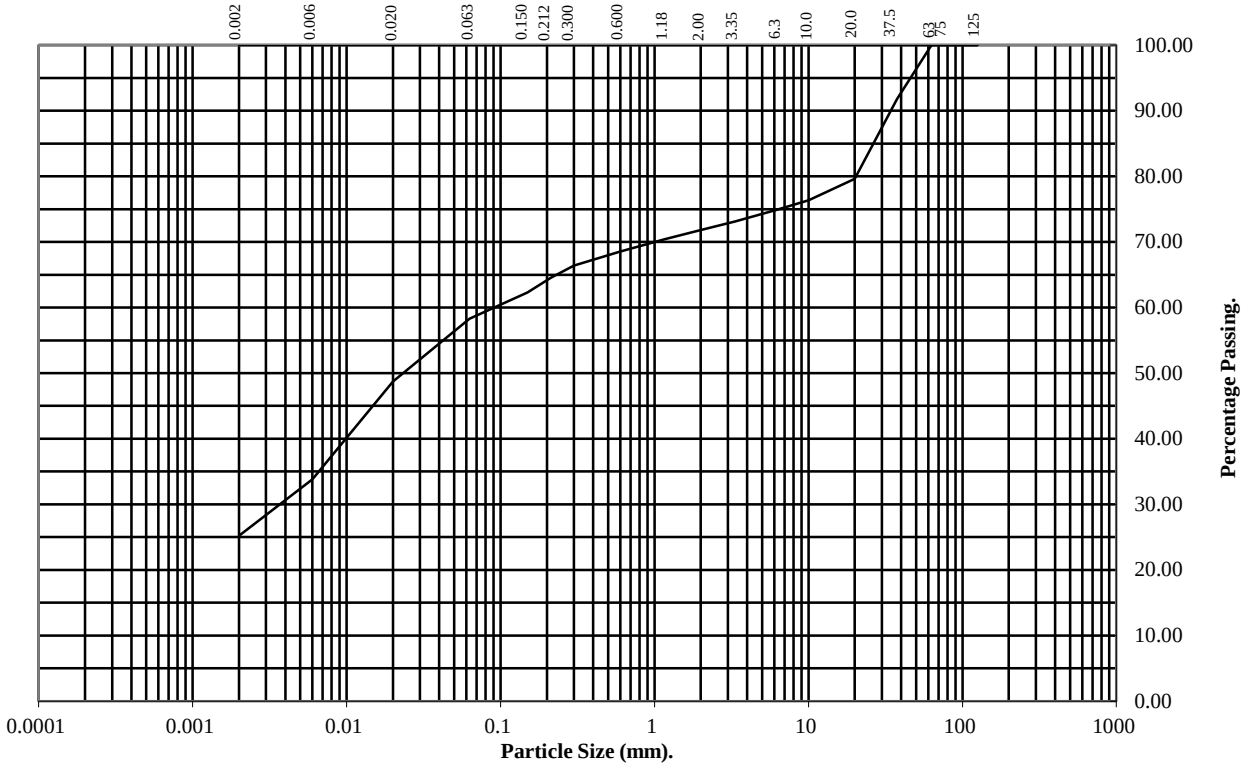
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/4633 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP01**	**Top Depth (m):**	**1.50**
Sample Number:	**9**	**Base Depth(m):**	**2.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	92
20	80
10	76
6.3	75
3.35	73
2	72
1.18	70
0.6	69
0.3	66
0.212	65
0.15	62
0.063	58

Particle Diameter	Percentage Passing
0.02	49
0.006	34
0.002	25

Soil Fraction	Total Percentage
Cobbles	0
Gravel	28
Sand	14
Silt	33
Clay	25

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

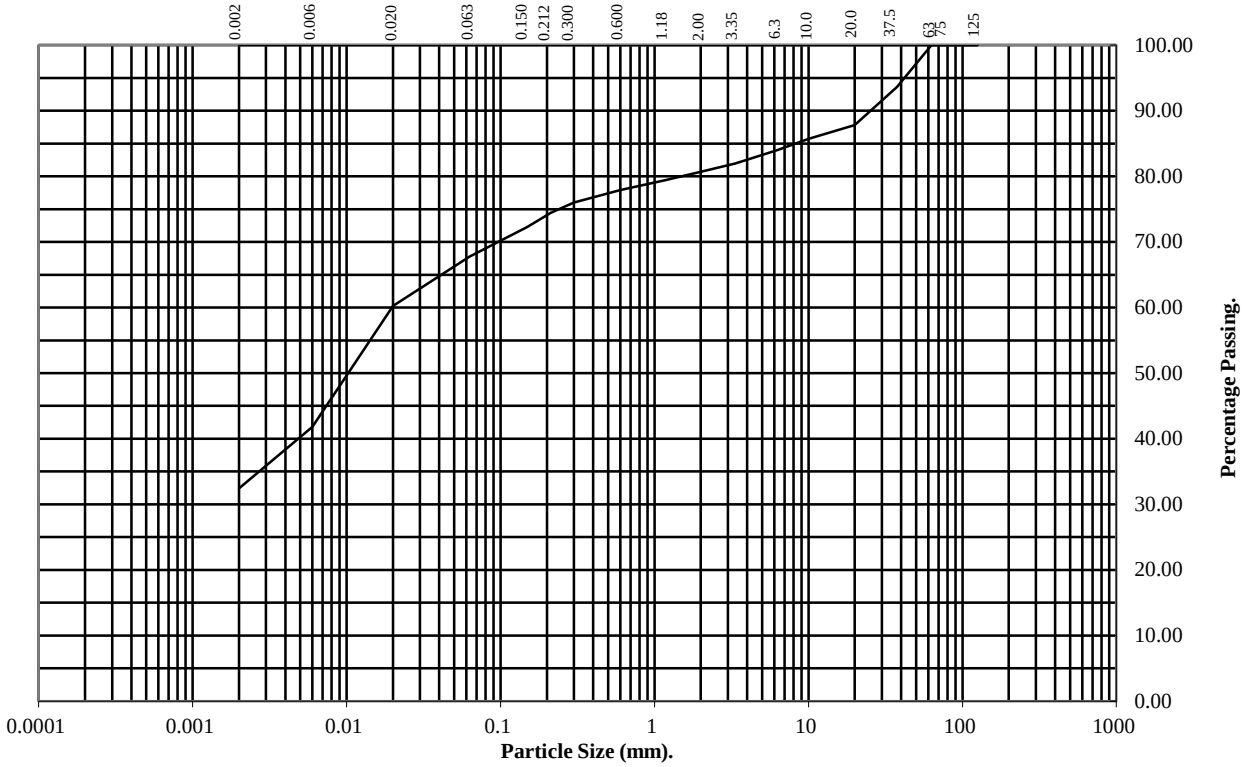
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **TP02** **Top Depth (m):** **0.80**

Sample Number: **5** **Base Depth(m):**

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	88
10	86
6.3	84
3.35	82
2	81
1.18	79
0.6	78
0.3	76
0.212	74
0.15	72
0.063	68

Particle Diameter	Percentage Passing
0.02	60
0.006	42
0.002	32

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	13
Silt	36
Clay	32

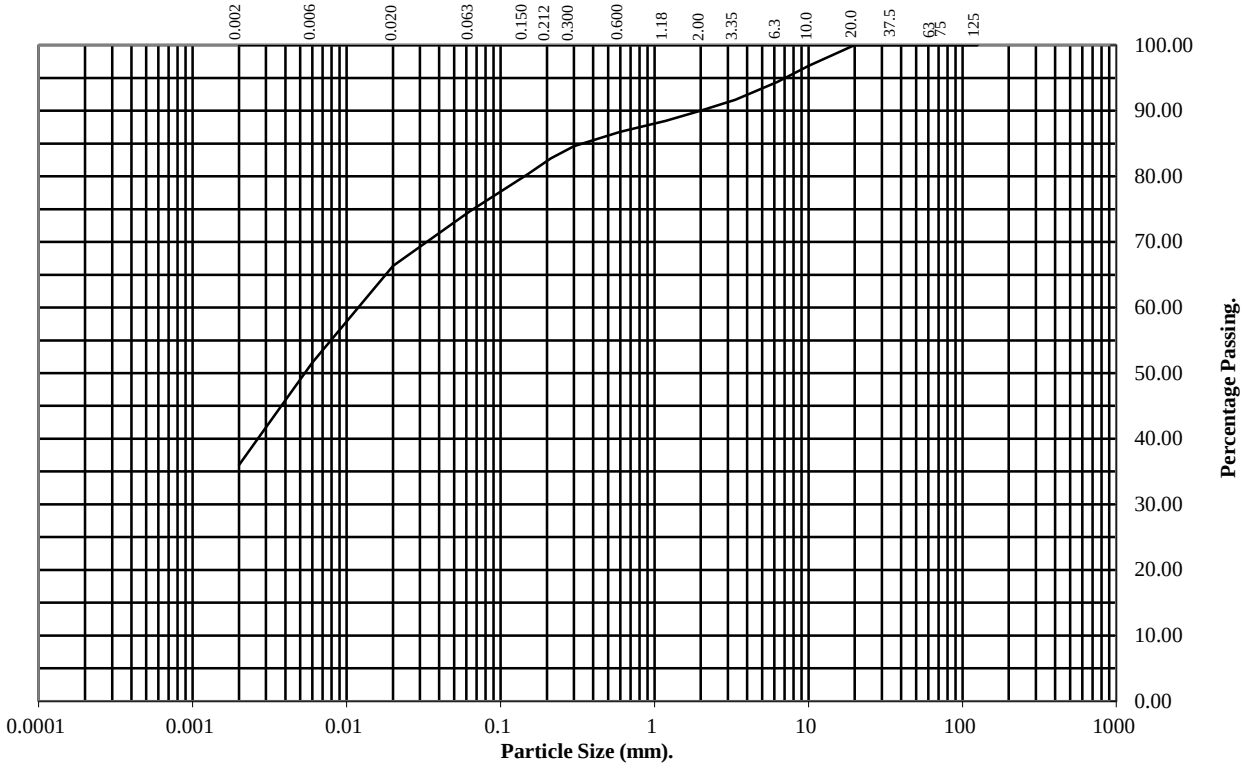
Remarks:
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP02**	**Top Depth (m):**	**3.00**
Sample Number:	**12**	**Base Depth(m):**	
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	97
6.3	94
3.35	92
2	90
1.18	88
0.6	87
0.3	85
0.212	83
0.15	80
0.063	75

Particle Diameter	Percentage Passing
0.02	66
0.006	52
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	15
Silt	39
Clay	36

Remarks:

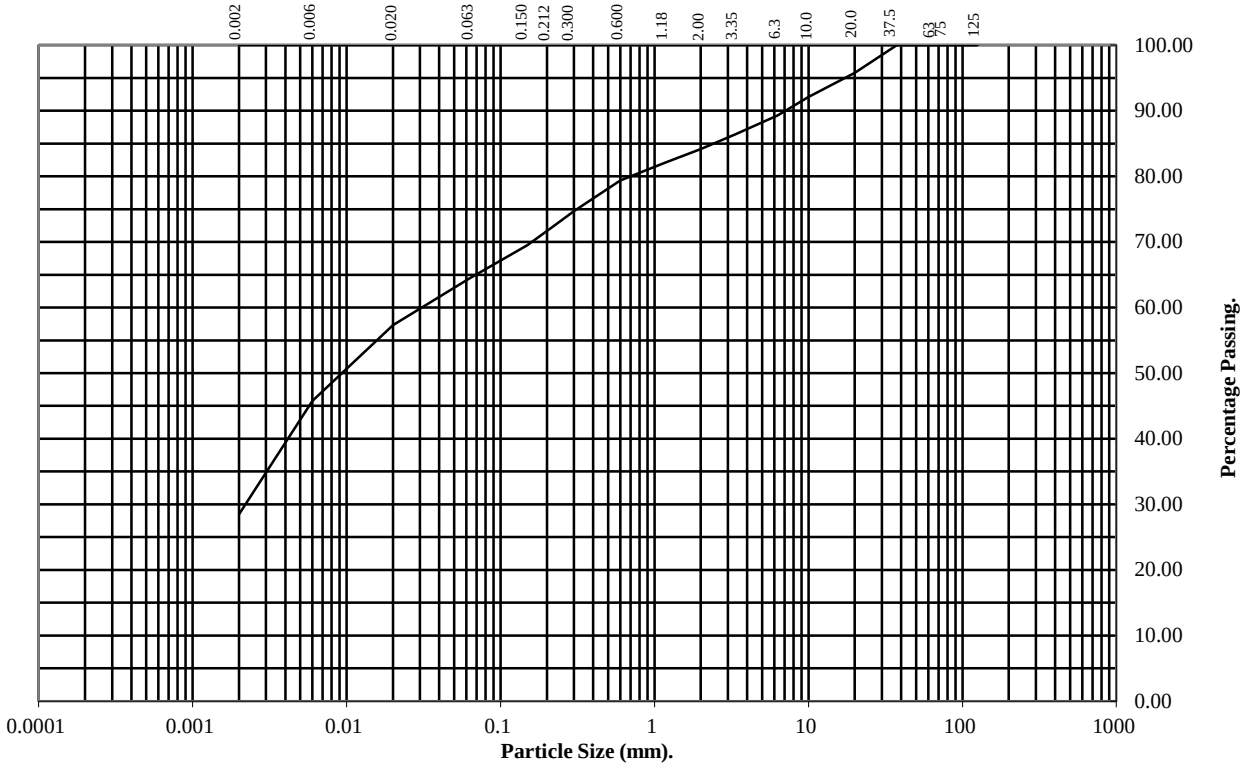
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP03**	**Top Depth (m):**	**1.10**
Sample Number:	**8**	**Base Depth(m):**	**1.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	96
10	92
6.3	89
3.35	86
2	84
1.18	82
0.6	79
0.3	75
0.212	72
0.15	70
0.063	64

Particle Diameter	Percentage Passing
0.02	57
0.006	46
0.002	28

Soil Fraction	Total Percentage
Cobbles	0
Gravel	16
Sand	20
Silt	36
Clay	28

Remarks:

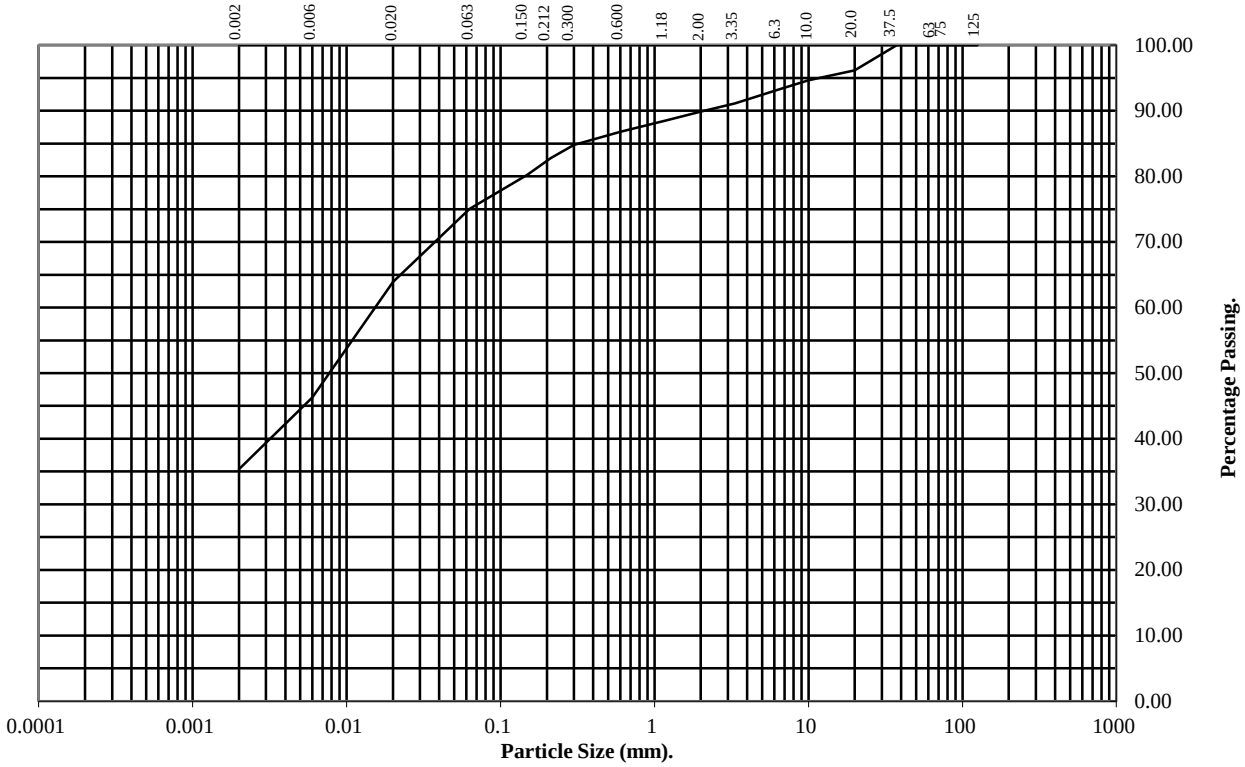
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP03**	**Top Depth (m):**	**3.20**
Sample Number:	**16**	**Base Depth(m):**	**3.60**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	96
10	95
6.3	93
3.35	91
2	90
1.18	89
0.6	87
0.3	85
0.212	83
0.15	80
0.063	75

Particle Diameter	Percentage Passing
0.02	64
0.006	46
0.002	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	15
Silt	40
Clay	35

Remarks:

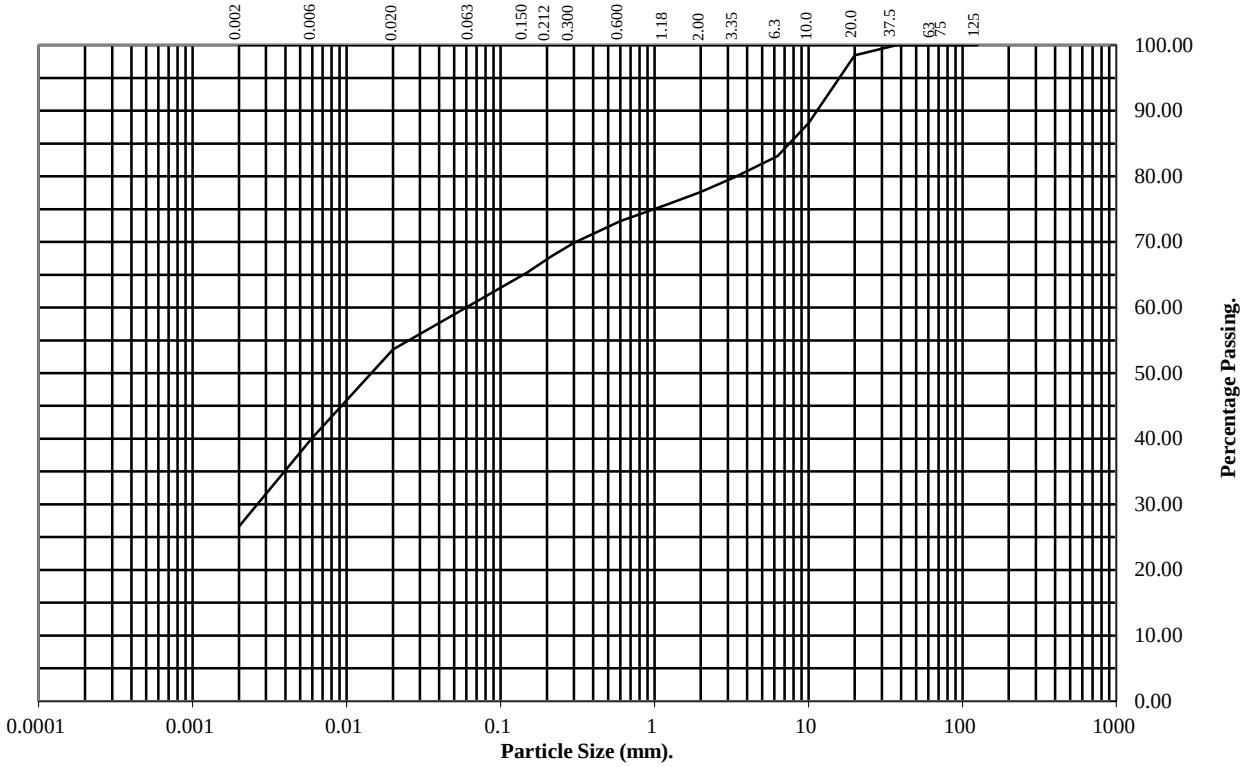
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP04**	**Top Depth (m):**	**1.00**
Sample Number:	**7**	**Base Depth(m):**	**1.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	88
6.3	83
3.35	80
2	78
1.18	76
0.6	73
0.3	70
0.212	68
0.15	65
0.063	60

Particle Diameter	Percentage Passing
0.02	54
0.006	40
0.002	27

Soil Fraction	Total Percentage
Cobbles	0
Gravel	22
Sand	18
Silt	33
Clay	27

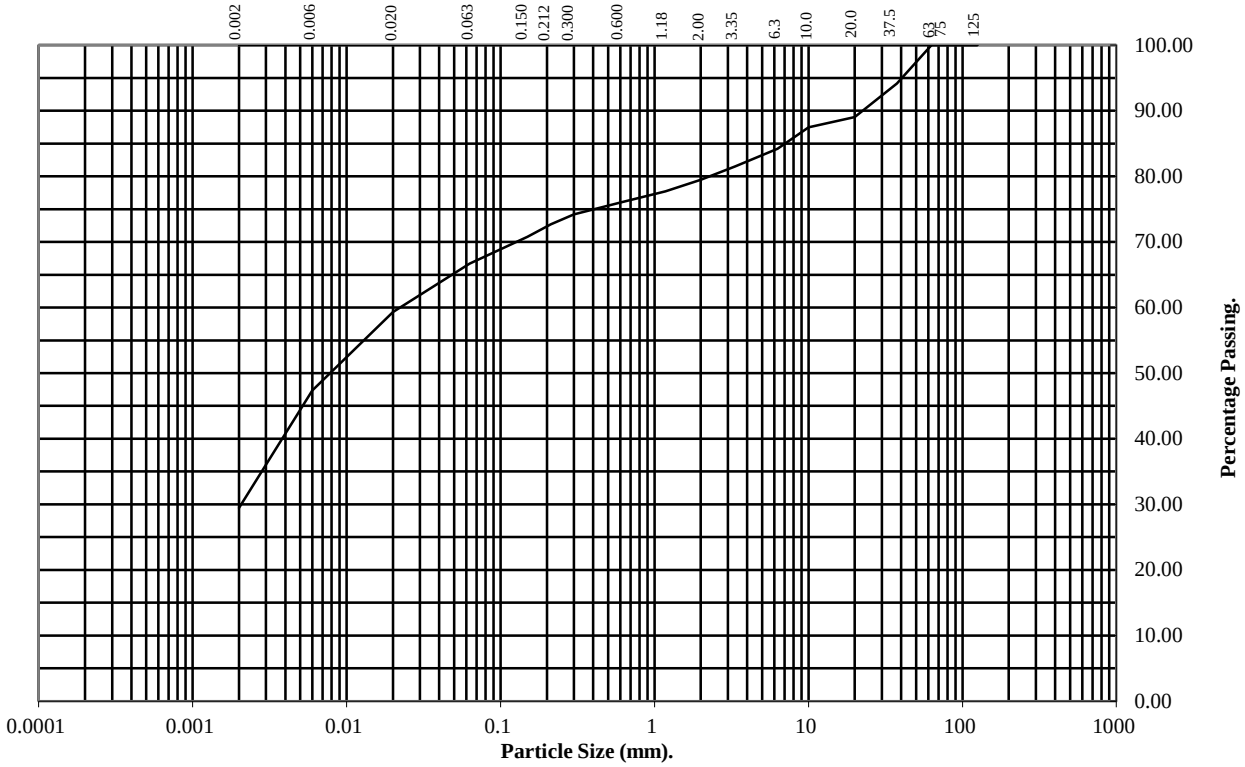
Remarks:
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP04**	**Top Depth (m):**	**3.50**
Sample Number:	**15**	**Base Depth(m):**	**4.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	89
10	87
6.3	84
3.35	82
2	79
1.18	78
0.6	76
0.3	74
0.212	73
0.15	71
0.063	67

Particle Diameter	Percentage Passing
0.02	59
0.006	47
0.002	29

Soil Fraction	Total Percentage
Cobbles	0
Gravel	21
Sand	12
Silt	38
Clay	29

Remarks:

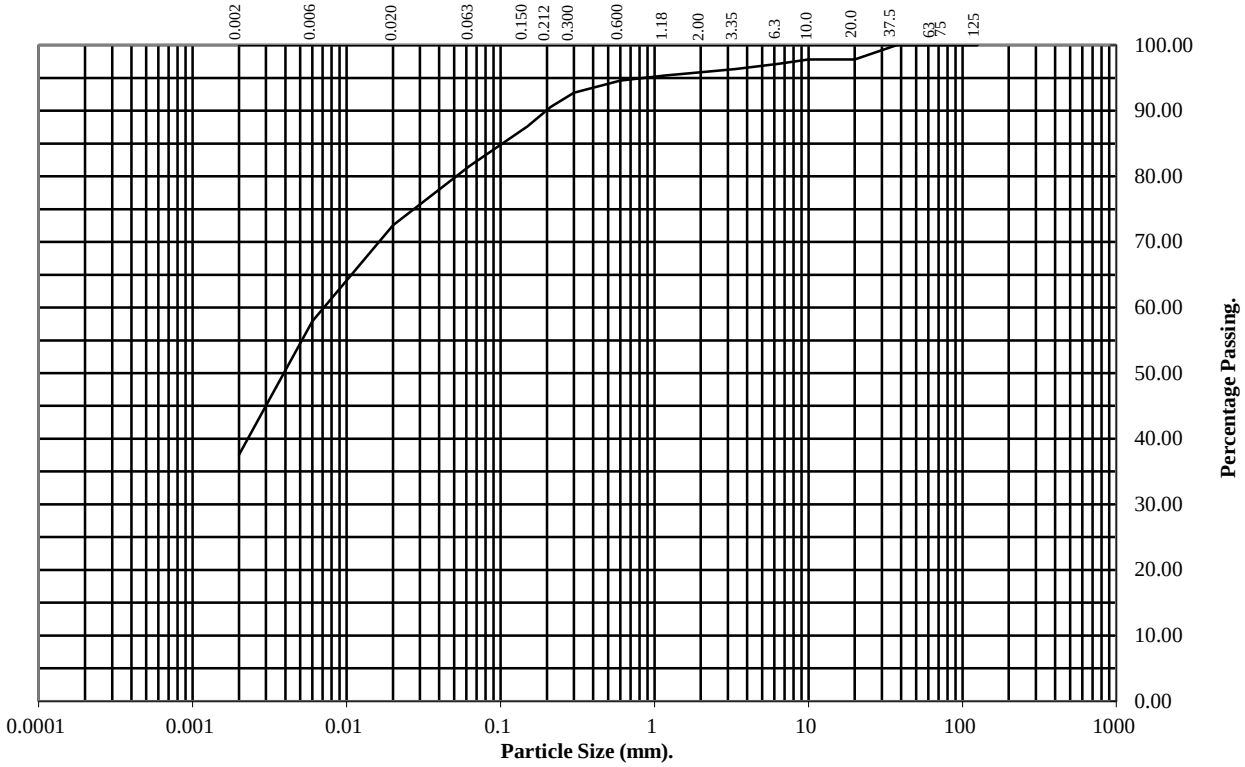
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP05**	**Top Depth (m):**	**2.40**
Sample Number:	**15**	**Base Depth(m):**	**2.60**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	98
10	98
6.3	97
3.35	96
2	96
1.18	95
0.6	95
0.3	93
0.212	91
0.15	88
0.063	82

Particle Diameter	Percentage Passing
0.02	73
0.006	58
0.002	38

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	14
Silt	44
Clay	38

Remarks:

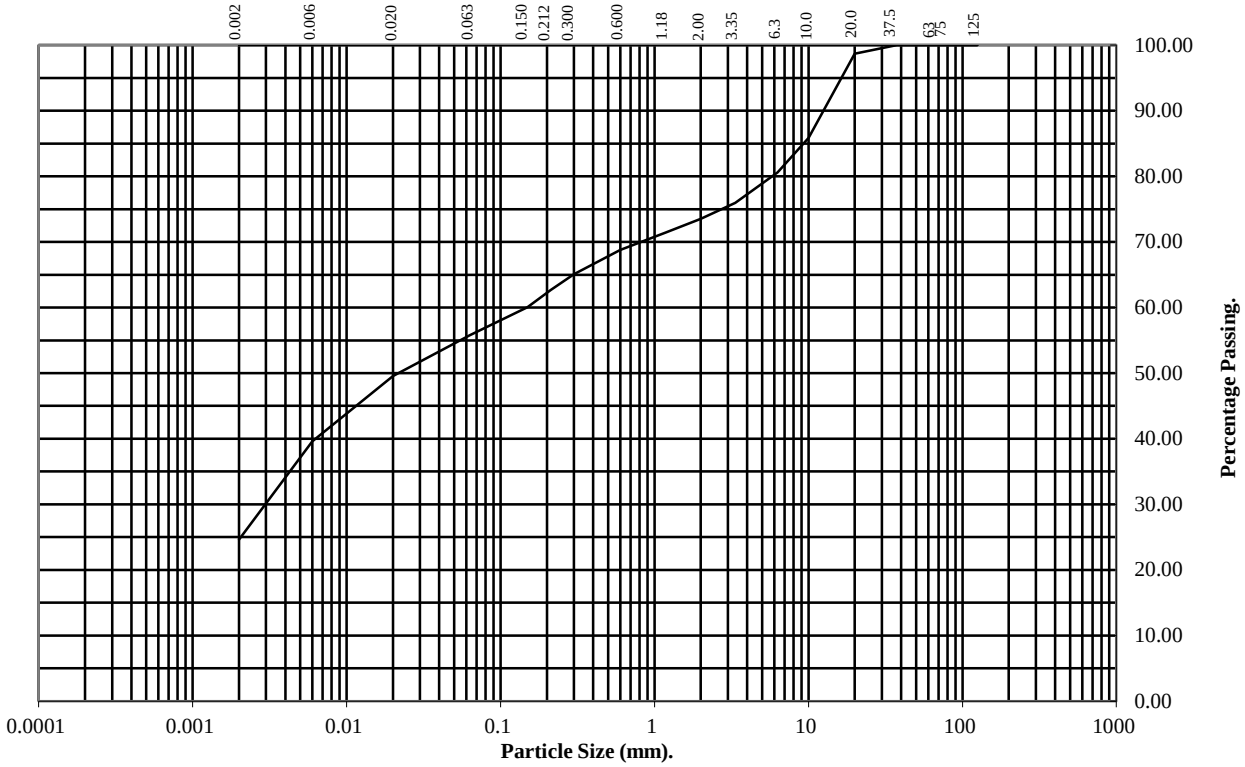
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP06**	**Top Depth (m):**	**1.30**
Sample Number:	**11**	**Base Depth(m):**	**1.70**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	86
6.3	81
3.35	76
2	74
1.18	71
0.6	69
0.3	65
0.212	63
0.15	60
0.063	56

Particle Diameter	Percentage Passing
0.02	50
0.006	40
0.002	25

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	18
Silt	31
Clay	25

Remarks:

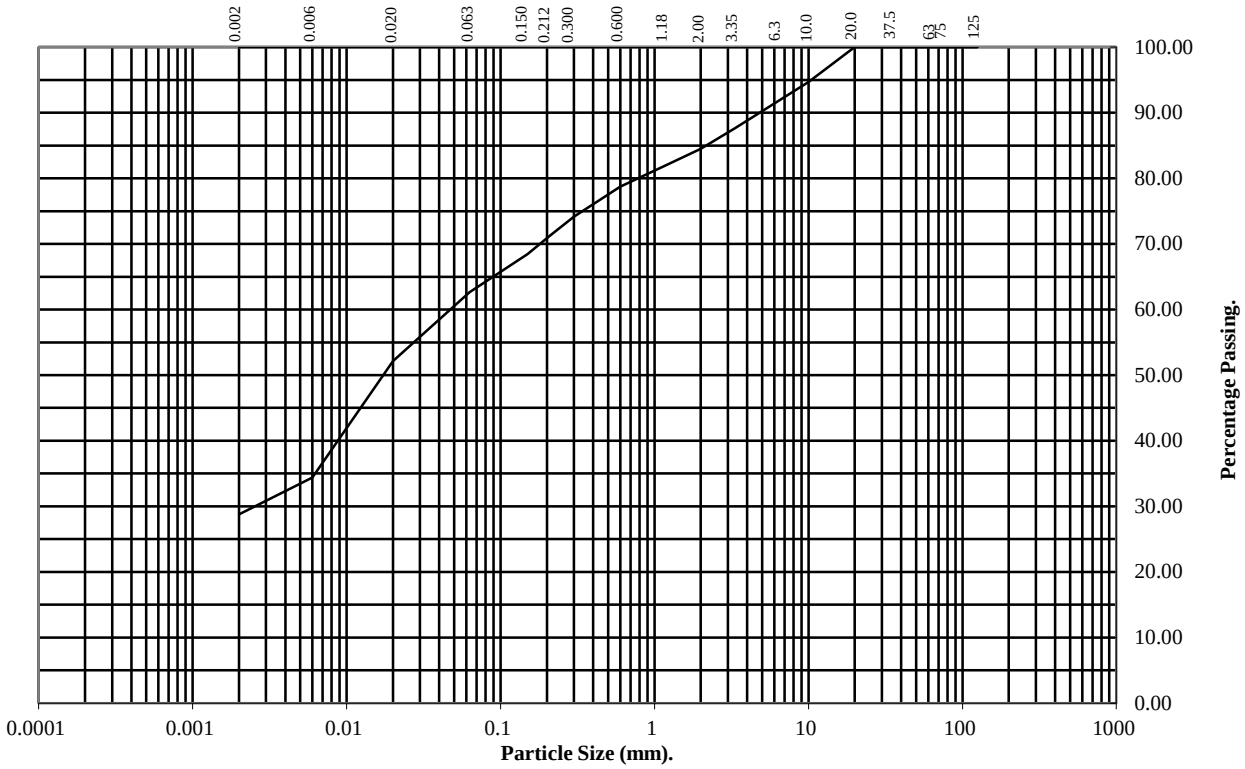
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP07**	**Top Depth (m):**	**2.50**
Sample Number:	**15**	**Base Depth(m):**	**3.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	95
6.3	92
3.35	88
2	85
1.18	82
0.6	79
0.3	74
0.212	71
0.15	68
0.063	63

Particle Diameter	Percentage Passing
0.02	52
0.006	34
0.002	29

Soil Fraction	Total Percentage
Cobbles	0
Gravel	15
Sand	22
Silt	34
Clay	29

Remarks:

See Summary of Soil Descriptions

Certificate of Analysis

Certificate Number 22-14047 *Issued:* 29-Jul-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-14047

Client Reference PSL22/4633

Order No (not supplied)

Contract Title (not supplied)

Description 9 Soil samples.

Date Received 22-Jul-22

Date Started 22-Jul-22

Date Completed 29-Jul-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-14047
Client Ref PSL22/4633
Contract Title

			Lab No	2036195	2036196	2036197	2036198	2036199	2036200	2036201	2036202	2036203
			.Sample ID	TP01	TP02	TP03	TP04	TP05	TP06	TP06	TP07	TP07
			Depth	2.10	1.60	1.10	2.00	1.60	1.40	3.20	2.70	3.10
			Other ID	10	8	6	9	10	9	17	14	17
			Sample Type	D	D	D	D	D	D	D	D	D
			Sampling Date	11/07/2022	11/07/2022	11/07/2022	11/07/2022	11/07/2022	11/07/2022	11/07/2022	11/07/2022	11/07/2022
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**									
Metals												
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	17	< 10			< 10
Inorganics												
pH	DETSC 2008#		pH	9.0	8.0	7.7	7.7	7.5	9.3			7.8
Organic matter	DETSC 2002#	0.1	%			1.2				3.1	1.7	
Chloride Aqueous Extract	DETSC 2055	1	mg/l	17	4.0	7.2	7.5	5.3	6.6			6.5
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	2.4	1.2	18	36	3.4	1.4			3.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	550	130	210	130	620	190			50
Sulphur as S, Total	DETSC 2320	0.01	%	0.32	0.03	0.27	0.09	0.23	0.07			0.02
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.30	0.07	0.14	0.08	0.19	0.09			0.05

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-14047
Client Ref PSL22/4633
Contract

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2036195	TP01 2.10 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036196	TP02 1.60 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036197	TP03 1.10 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036198	TP04 2.00 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036199	TP05 1.60 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036200	TP06 1.40 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2036201	TP06 3.20 SOIL	11/07/22	PT 1L		
2036202	TP07 2.70 SOIL	11/07/22	PT 1L		
2036203	TP07 3.10 SOIL	11/07/22	PT 1L	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/4652

Report Date: 20 July 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins/Platon Kostelletos

Contract Title: Stanstead Terminal 2 (ST2)

Date Received: 12/7/2022
Date Commenced: 12/7/2022
Date Completed: 20/7/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)
[redacted]
L Knight (Senior Technician)
S Eyre (Senior Technician)
T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP08	6	B	0.40	0.60	MADE GROUND brown very sandy clayey GRAVEL.
TP08	9	D	0.80	-	Brown very gravelly sandy CLAY
TP08	15	B	1.80	2.00	Brown slightly gravelly sandy CLAY.
TP08	18	D	2.80	-	Brown gravelly sandy CLAY
TP08	22	D	3.40	-	Brown gravelly sandy CLAY
TP08	23	B	3.40	3.60	Brown slightly gravelly sandy CLAY.
TP09	5	D	0.30	-	Brown slightly gravelly very sandy CLAY.
TP09	6	B	0.30	0.50	Brown slightly gravelly very sandy CLAY.
TP09	10	D	1.30	-	Brown very gravelly sandy CLAY
TP09	13	D	1.90	-	Brown very gravelly sandy CLAY
TP09	19	D	3.50	-	Brown gravelly sandy CLAY.
TP09	20	B	3.50	4.00	Brown gravelly sandy CLAY.
TP10	10	D	0.80	-	Brown very gravelly sandy CLAY
TP10	11	B	1.30	1.50	Brown gravelly sandy CLAY
TP10	14	D	2.10	-	Brown very gravelly sandy CLAY

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
TP08	9	D	0.80		14					
TP08	18	D	2.80		17					
TP08	22	D	3.40		21					
TP09	5	D	0.30		18					
TP09	10	D	1.30		16					
TP09	13	D	1.90		19					
TP09	19	D	3.50		16					
TP10	10	D	0.80		12					
TP10	14	D	2.10		17					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)

Contract No:

PSL22/4652

Client Ref:

D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP08	9	D	0.80					40	20	20	50	Intermediate Plasticity CI
TP08	18	D	2.80									
TP08	22	D	3.40					49	24	25	80	Intermediate Plasticity CI
TP09	5	D	0.30									
TP09	10	D	1.30					41	20	21	72	Intermediate Plasticity CI
TP09	13	D	1.90					42	20	22	70	Intermediate Plasticity CI
TP09	19	D	3.50									
TP10	10	D	0.80					44	21	23	60	Intermediate Plasticity CI
TP10	14	D	2.10					43	21	22	55	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

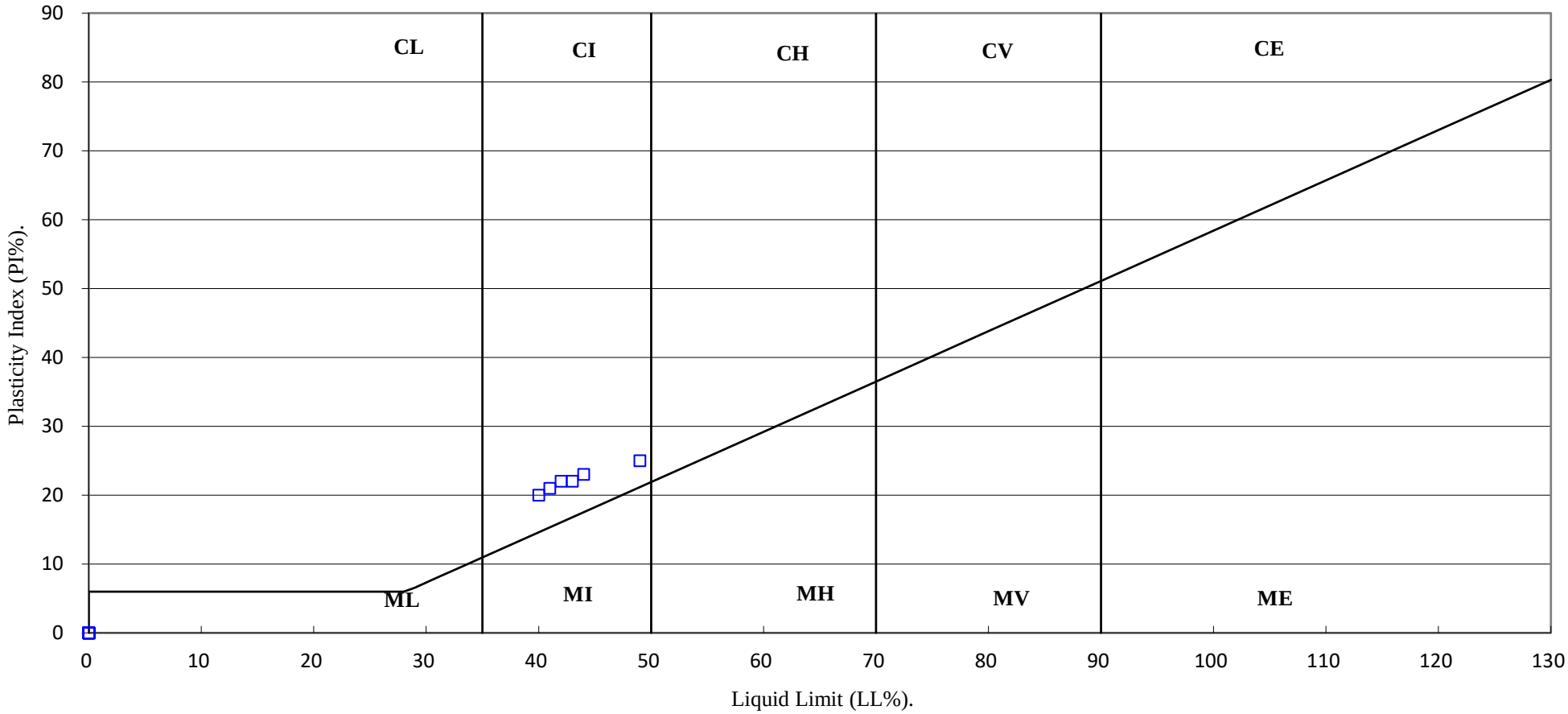
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)

Contract No:
PSL22/4652
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



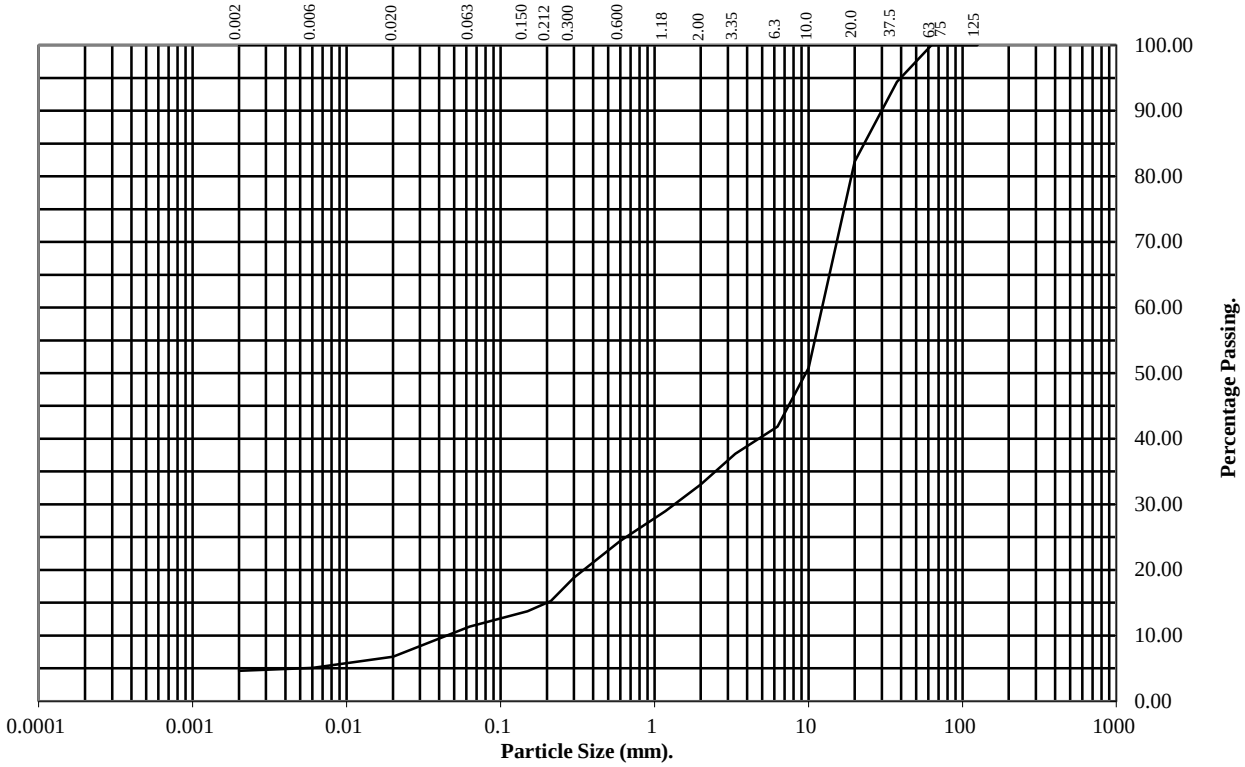
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)**	**Contract No:**
			PSL22/4652
			Client Ref:
			D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP08**	**Top Depth (m):**	**0.40**
Sample Number:	**6**	**Base Depth(m):**	**0.60**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	94
20	82
10	51
6.3	42
3.35	38
2	33
1.18	29
0.6	24
0.3	19
0.212	15
0.15	14
0.063	11

Particle Diameter	Percentage Passing
0.02	7
0.006	5
0.002	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	67
Sand	22
Silt	6
Clay	5

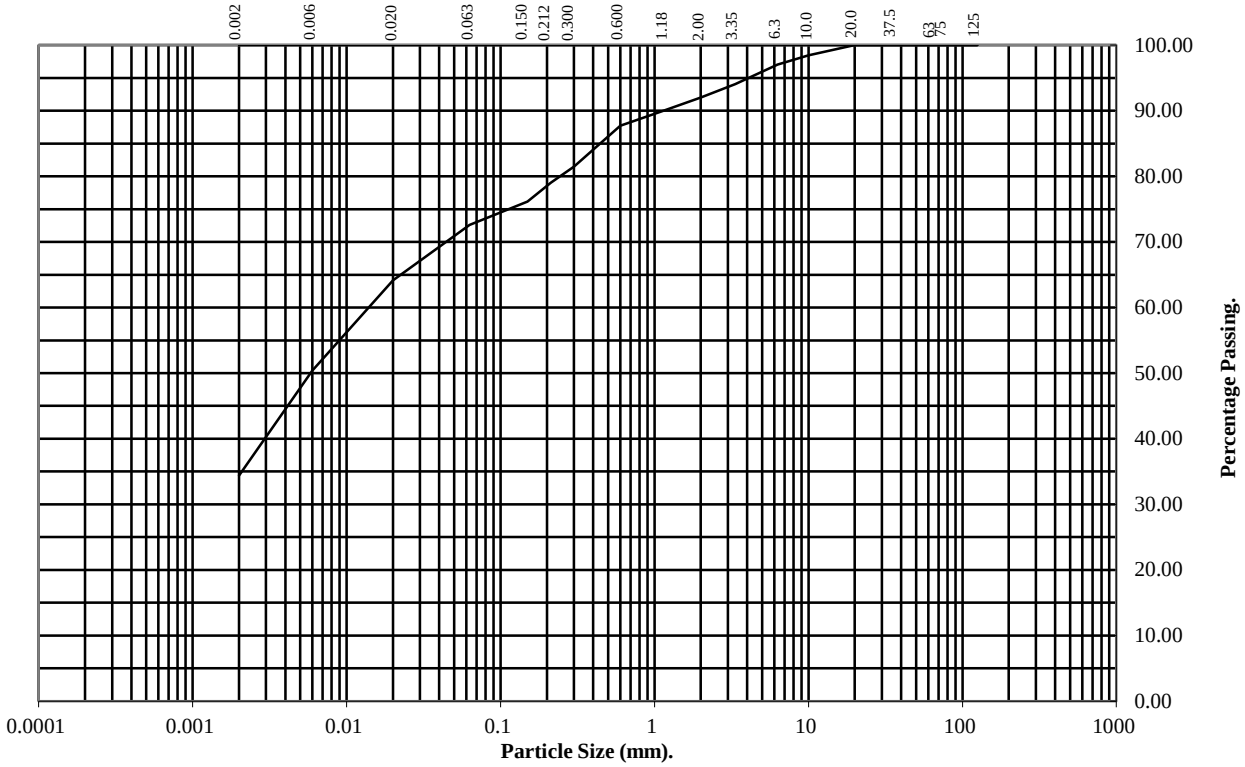
Remarks:
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP08**	**Top Depth (m):**	**1.80**
Sample Number:	**15**	**Base Depth(m):**	**2.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	97
3.35	94
2	92
1.18	90
0.6	88
0.3	81
0.212	79
0.15	76
0.063	73

Particle Diameter	Percentage Passing
0.02	64
0.006	50
0.002	34

Soil Fraction	Total Percentage
Cobbles	0
Gravel	8
Sand	19
Silt	39
Clay	34

Remarks:

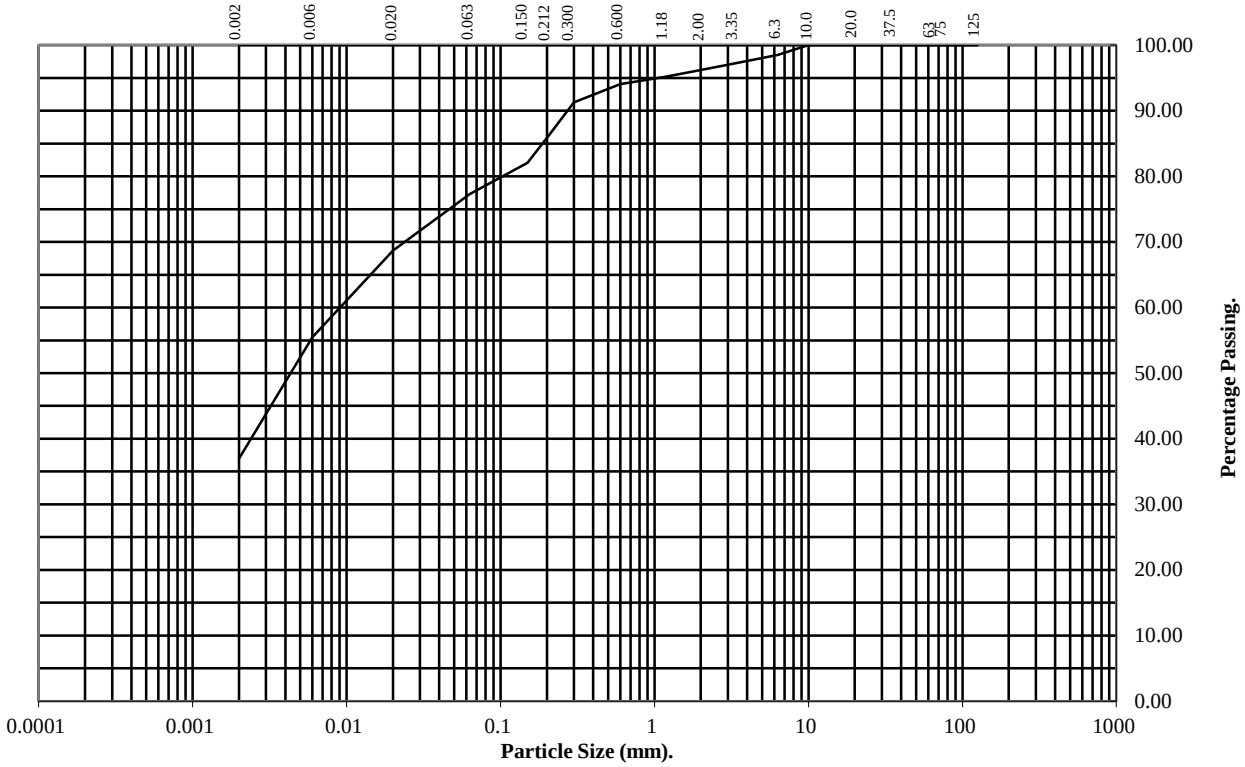
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP08**	**Top Depth (m):**	**3.40**
Sample Number:	**23**	**Base Depth(m):**	**3.60**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	98
3.35	97
2	96
1.18	95
0.6	94
0.3	91
0.212	87
0.15	82
0.063	77

Particle Diameter	Percentage Passing
0.02	69
0.006	55
0.002	37

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	19
Silt	40
Clay	37

Remarks:

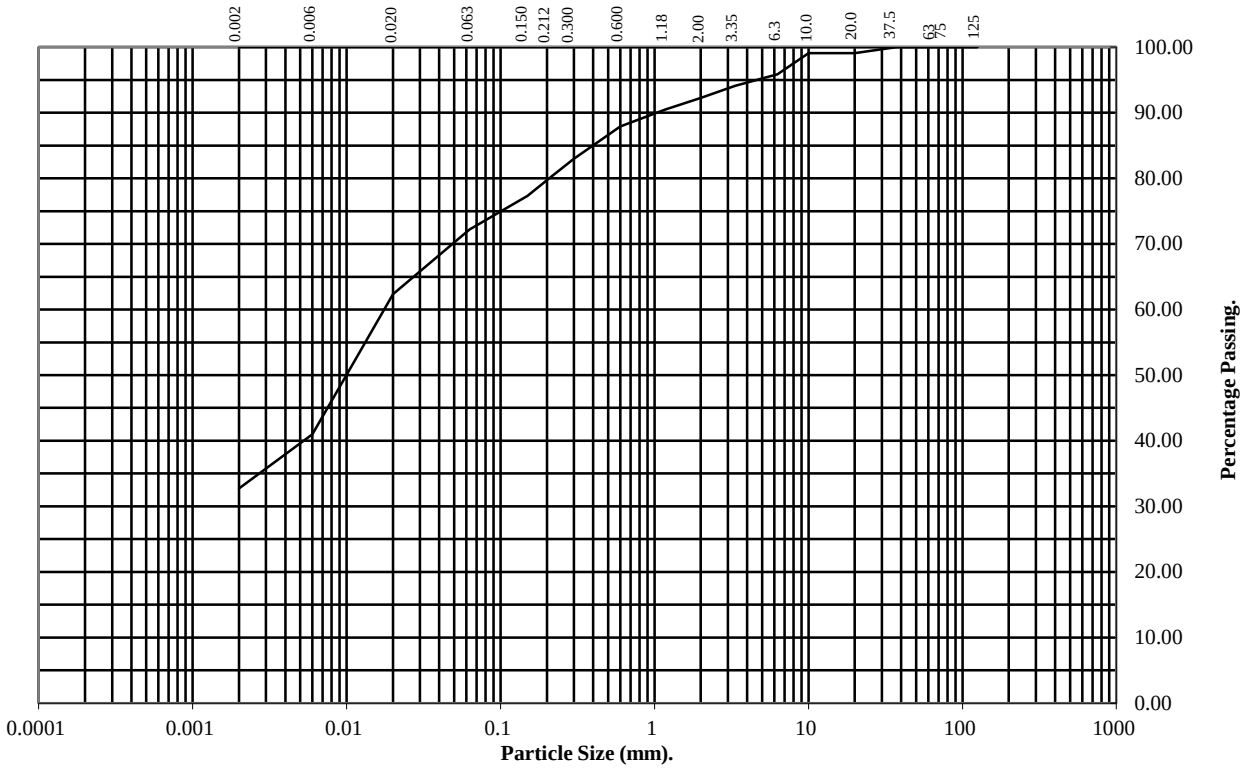
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP09**	**Top Depth (m):**	**0.30**
Sample Number:	**6**	**Base Depth(m):**	**0.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	99
6.3	96
3.35	94
2	92
1.18	91
0.6	88
0.3	83
0.212	80
0.15	77
0.063	72

Particle Diameter	Percentage Passing
0.02	62
0.006	41
0.002	33

Soil Fraction	Total Percentage
Cobbles	0
Gravel	8
Sand	20
Silt	39
Clay	33

Remarks:

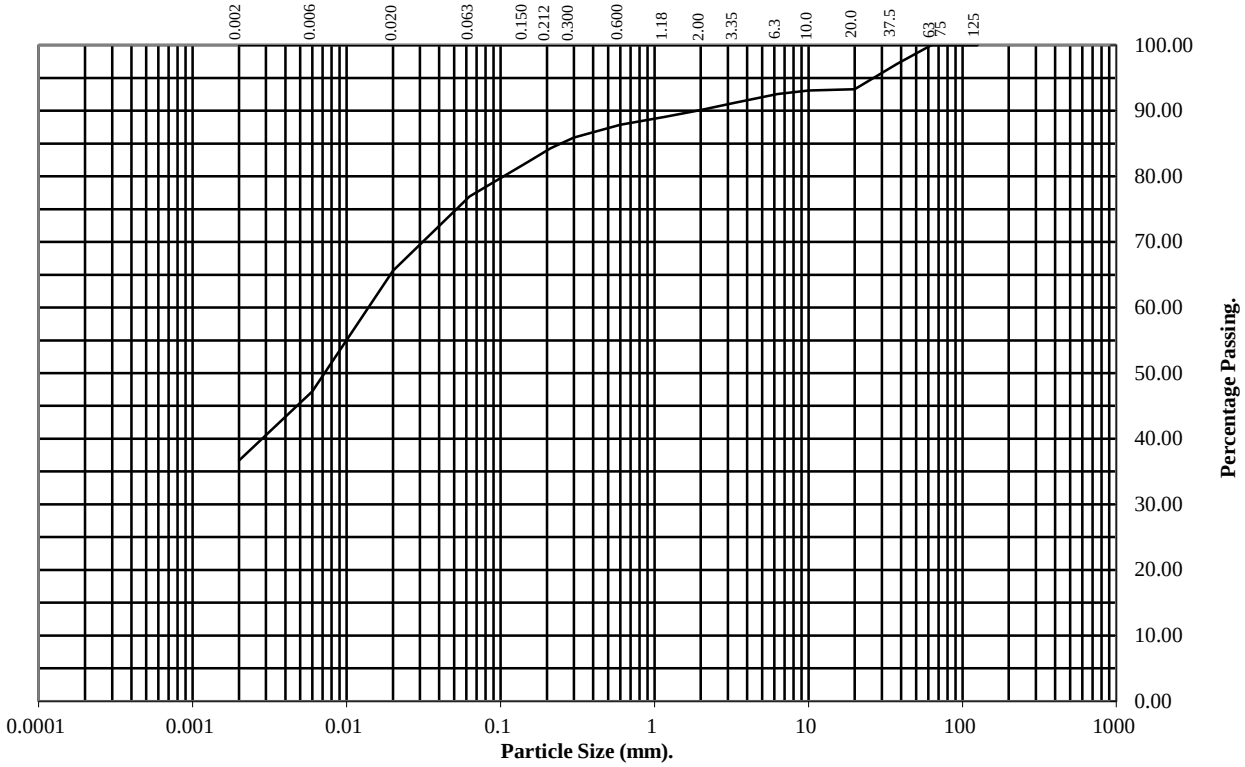
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP09**	**Top Depth (m):**	**3.50**
Sample Number:	**20**	**Base Depth(m):**	**4.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	97
20	93
10	93
6.3	93
3.35	91
2	90
1.18	89
0.6	88
0.3	86
0.212	84
0.15	82
0.063	77

Particle Diameter	Percentage Passing
0.02	66
0.006	47
0.002	37

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	13
Silt	40
Clay	37

Remarks:

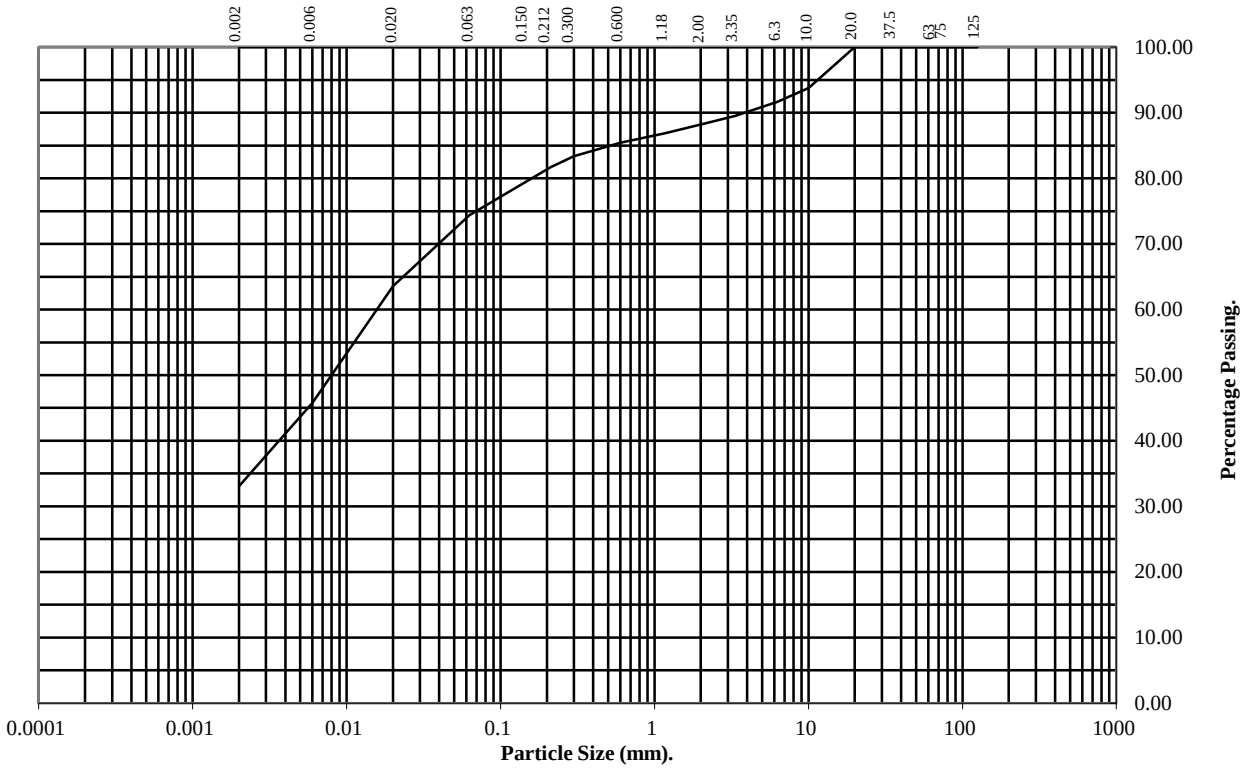
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP10**	**Top Depth (m):**	**1.30**
Sample Number:	**11**	**Base Depth(m):**	**1.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	94
6.3	92
3.35	90
2	88
1.18	87
0.6	85
0.3	83
0.212	82
0.15	80
0.063	74

Particle Diameter	Percentage Passing
0.02	64
0.006	46
0.002	33

Soil Fraction	Total Percentage
Cobbles	0
Gravel	12
Sand	14
Silt	41
Clay	33

Remarks:
See Summary of Soil Descriptions

Certificate of Analysis

Certificate Number	22-13770	*Issued:*	26-Jul-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference	22-13770
Client Reference	PSL22/4652
Order No	(not supplied)
Contract Title	(not supplied)
Description	3 Soil samples.
Date Received	19-Jul-22
Date Started	19-Jul-22
Date Completed	26-Jul-22
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

ilac-MRA

UKAS TESTING
2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-13770
Client Ref PSL22/4652
Contract Title

	Lab No	2034834	2034835	2034836
	.Sample ID	TP08	TP09	TP10
	Depth	1.30	0.50	1.30
	Other ID	D12	D8	D10
	Sample Type	SOIL	SOIL	SOIL
	Sampling Date	12/07/2022	12/07/2022	12/07/2022
	Sampling Time	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**	
Metals				
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10
Inorganics				
pH	DETSC 2008#		pH	9.2	9.5	9.2
Chloride Aqueous Extract	DETSC 2055	1	mg/l	5.7	5.5	4.6
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	1.3	1.3	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	160	140
Sulphur as S, Total	DETSC 2320	0.01	%	0.04	0.03	0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.05	0.05

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-13770
Client Ref PSL22/4652
Contract

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2034834	TP08 1.30 SOIL	12/07/22	PT 1L		
2034835	TP09 0.50 SOIL	12/07/22	PT 1L		
2034836	TP10 1.30 SOIL	12/07/22	PT 1L		

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/4653

Report Date: 21 July 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins/Platon Kostelletos

Contract Title: Stanstead Terminal 2 (ST2)

Date Received: 12/7/2022
Date Commenced: 12/7/2022
Date Completed: 21/07/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)
[redacted]
L Knight (Assistant Laboratory Manager)
S Eyre (Senior Technician)
M Fennell (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP11	3	D	0.40		Brown very gravelly sandy CLAY.
TP11	7	B	0.60	0.80	Brown very gravelly sandy CLAY.
TP11	6	D	0.80		Brown gravelly sandy CLAY.
TP11	13	D	2.10		Brown gravelly sandy CLAY.
TP11	18	D	3.50		Brown gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
TP11	3	D	0.40					39	18	21	78	Intermediate Plasticity CI
TP11	13	D	2.10					46	22	24	87	Intermediate Plasticity CI
TP11	18	D	3.50					45	22	23	83	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)

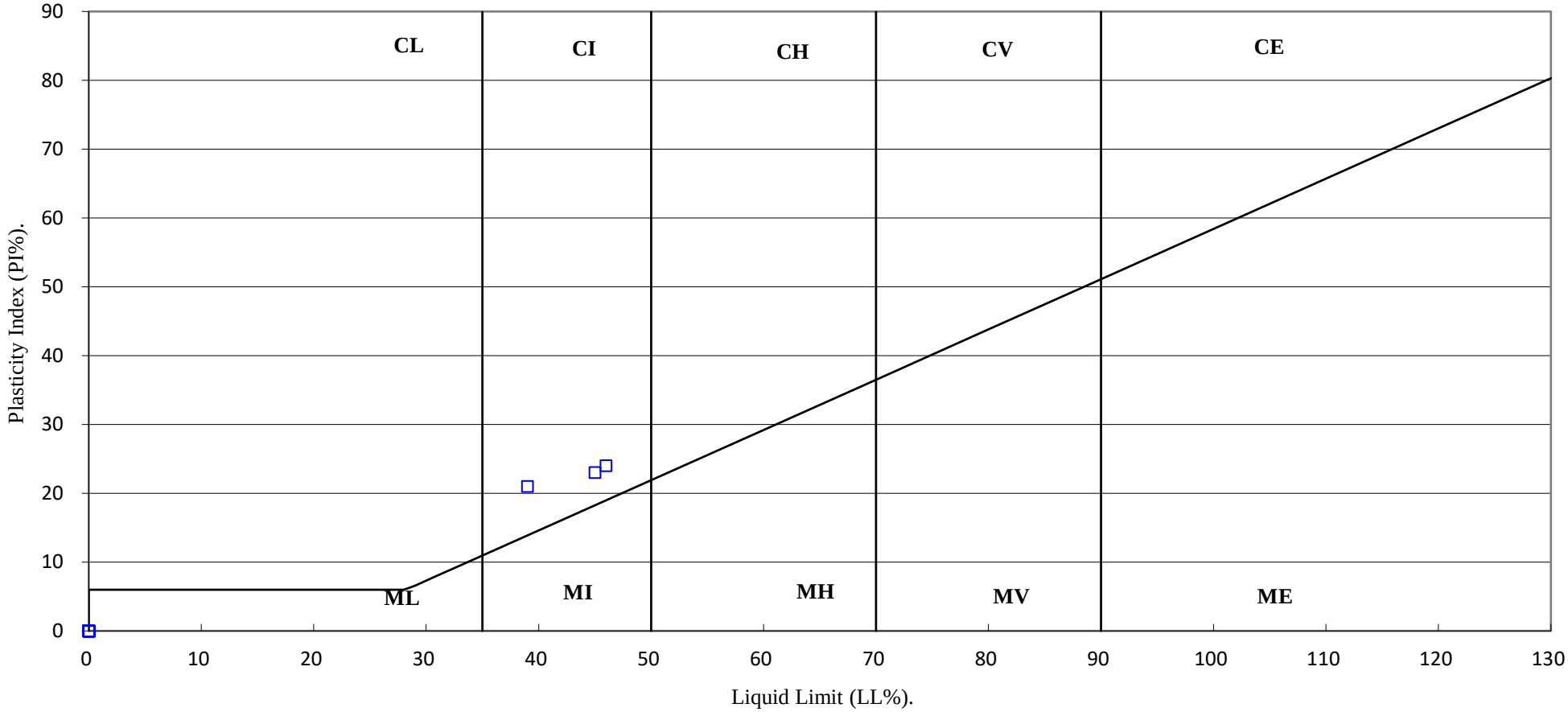
Contract No:

PSL22/4653

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2)	**Contract No:** PSL22/4653 **Client Ref:** D2027-22

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
TP11	3	D	0.40		19					
TP11	6	D	0.80		21					
TP11	13	D	2.10		16					
TP11	18	D	3.50		16					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)

Contract No:

PSL22/4653

Client Ref:

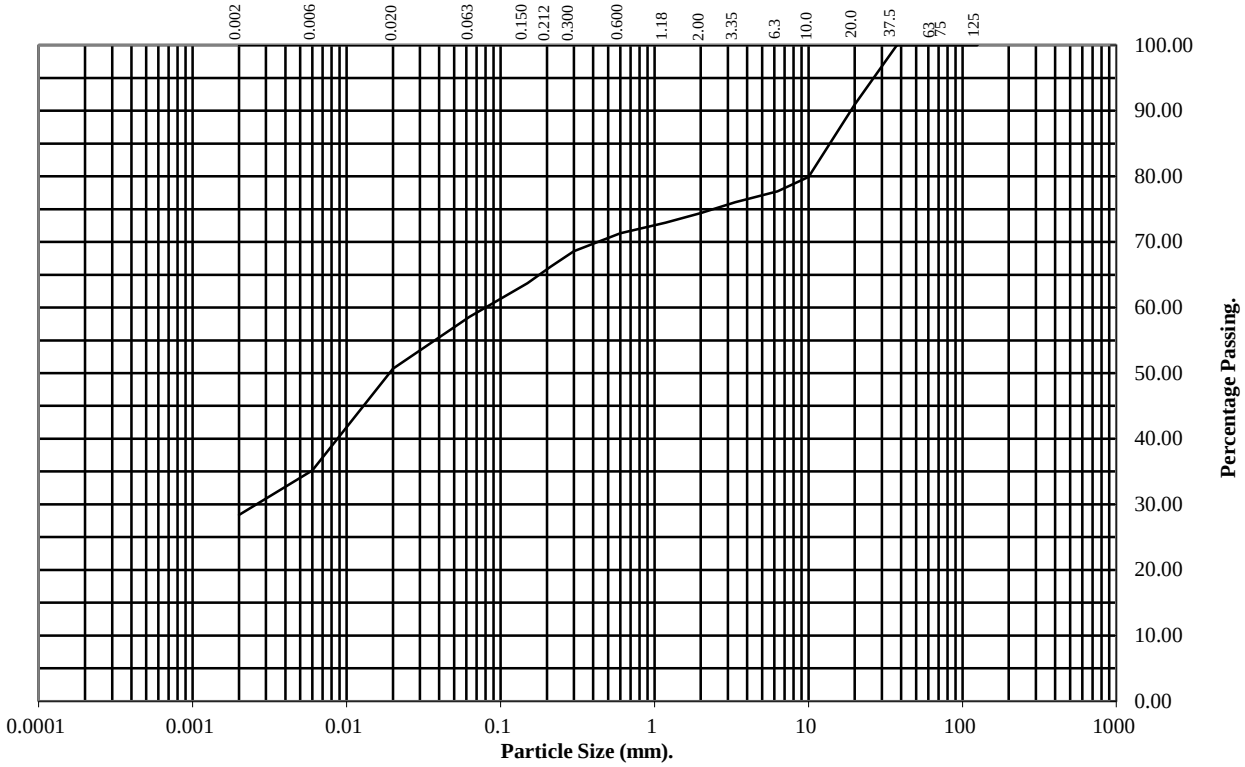
D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**TP11**	**Top Depth (m):**	**0.60**
Sample Number:	**7**	**Base Depth(m):**	**0.80**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	91
10	80
6.3	78
3.35	76
2	74
1.18	73
0.6	71
0.3	69
0.212	66
0.15	64
0.063	59

Particle Diameter	Percentage Passing
0.02	51
0.006	35
0.002	28

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	15
Silt	31
Clay	28

Remarks:
See Summary of Soil Descriptions

Certificate of Analysis

Certificate Number 22-13762 *Issued:* 26-Jul-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-13762

Client Reference PSL22/4653

Order No (not supplied)

Contract Title (not supplied)

Description One Soil sample.

Date Received 19-Jul-22

Date Started 19-Jul-22

Date Completed 26-Jul-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-13762
Client Ref PSL22/4653
Contract Title

Lab No	2034778
.Sample ID	TP11
Depth	
Other ID	9
Sample Type	D
Sampling Date	12/07/2022
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10
Inorganics				
pH	DETSC 2008#		pH	7.8
Organic matter	DETSC 2002#	0.1	%	0.7
Chloride Aqueous Extract	DETSC 2055	1	mg/l	8.0
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	6.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	150
Sulphur as S, Total	DETSC 2320	0.01	%	0.05
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.05

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-13762
Client Ref PSL22/4653
Contract

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2034778	TP11 SOIL	12/07/22	PT 1L		

Key: P-Plastic T-Tub

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Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/4751

Report Date: 16 August 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins/Platon Kostelletos

Contract Title: Stanstead Terminal 2 (ST2)

Date Received: 15/7/2022
Date Commenced: 15/7/2022
Date Completed: 9/8/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)
[redacted]
L Knight (Senior Technician)
S Eyre (Senior Technician)
T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
Mound NW	1	LB	0.30	0.40	Brown gravelly very sandy CLAY.

UKAS TESTING
4043

Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation	Contract No:
	PSL22/4751
	Client Ref:
	D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
Mound NW	1	LB	0.30	0.40	10		35	17	18	70	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation

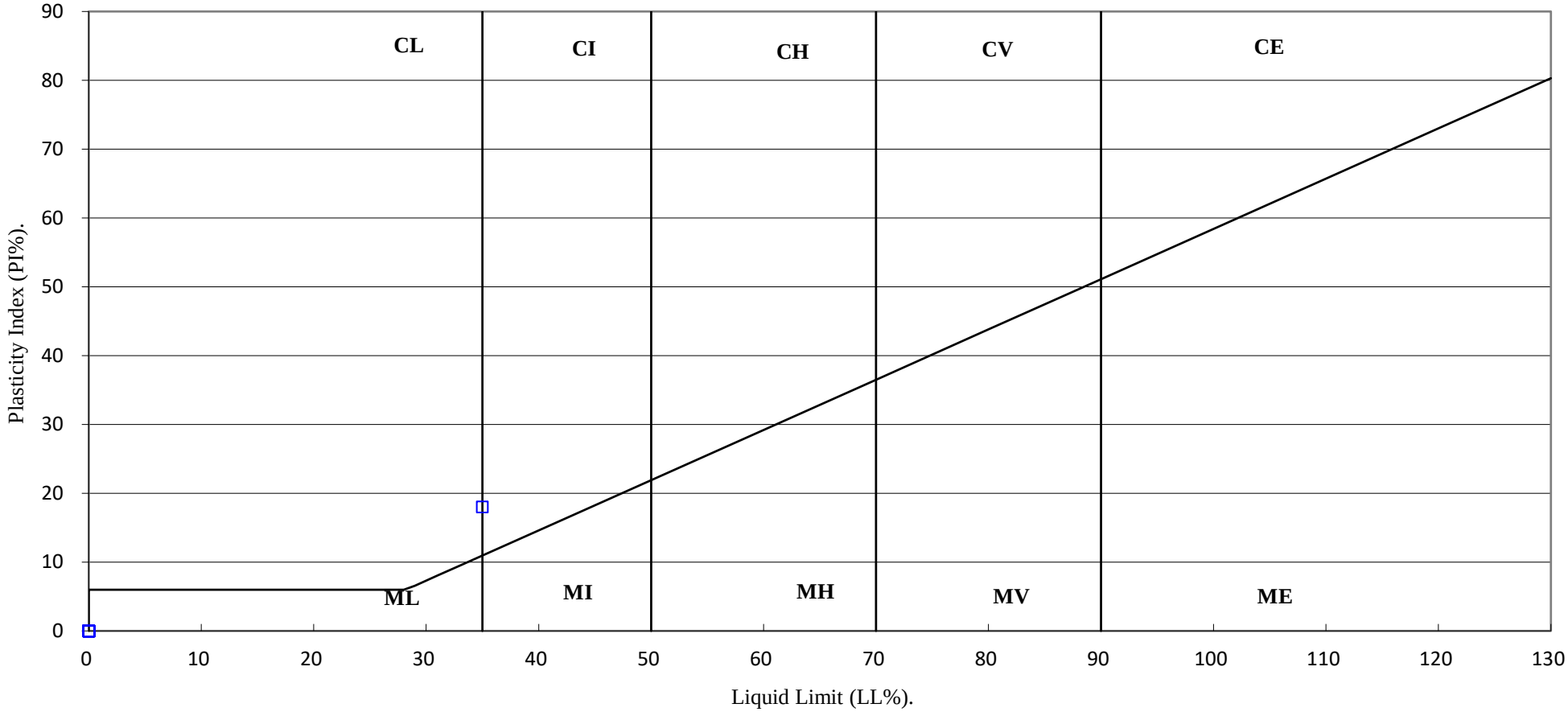
Contract No:

PSL22/4751

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal (ST2) - Ground Investigation	**Contract No:**
			PSL22/4751
			Client Ref:
			D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

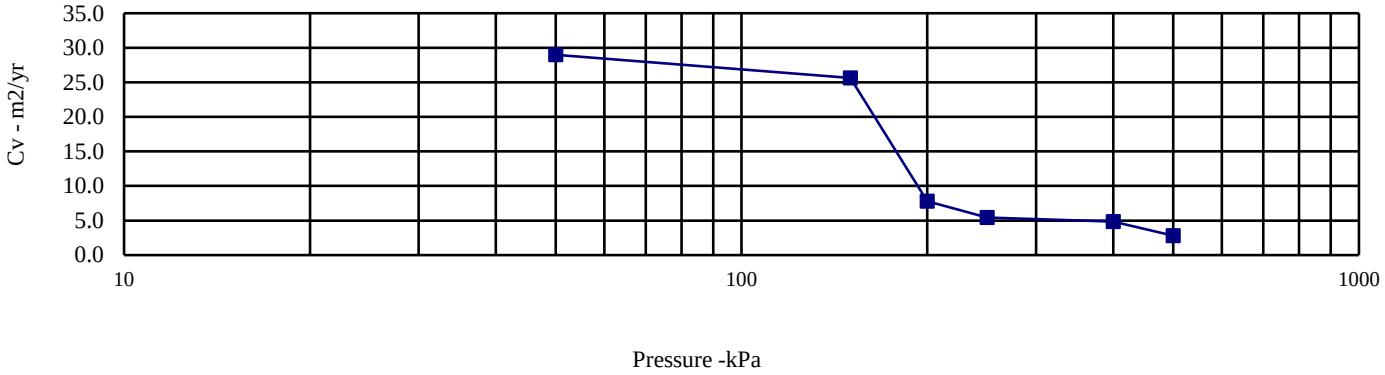
BS 1377: Part 5: 1990: Clause 3

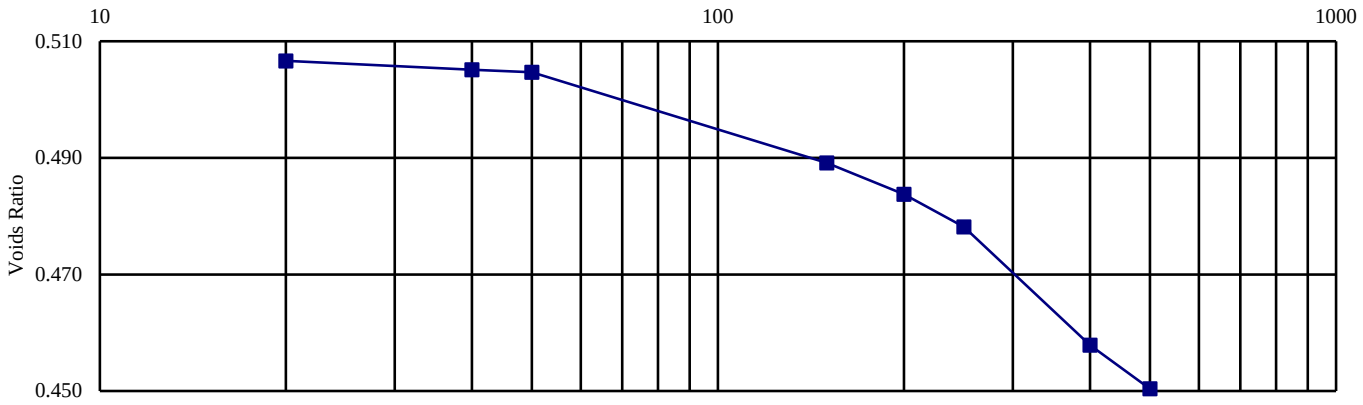
Hole Number: **Mound NW** **Top Depth (m):** **0.30**

Sample Number: **Base Depth (m) :** **0.40**

Sample Type: **LB**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	11						
Bulk Density (Mg/m3):	1.99	0	20	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.80	20	40	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.514	40	50	0.030	28.986	Nominal temperature	
Degree of saturation:	57.7	50	150	0.103	25.642	during test ' C:	20
Height (mm):	20.04	150	200	0.072	7.798	Remarks:	
Diameter (mm)	75.065	200	250	0.075	5.455	See summary of soil descriptions	
Particle Density (Mg/m3):	2.72	250	400	0.092	4.859		
Assumed		400	500	0.051	2.816		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/4751 **Client Ref:** D2027-22

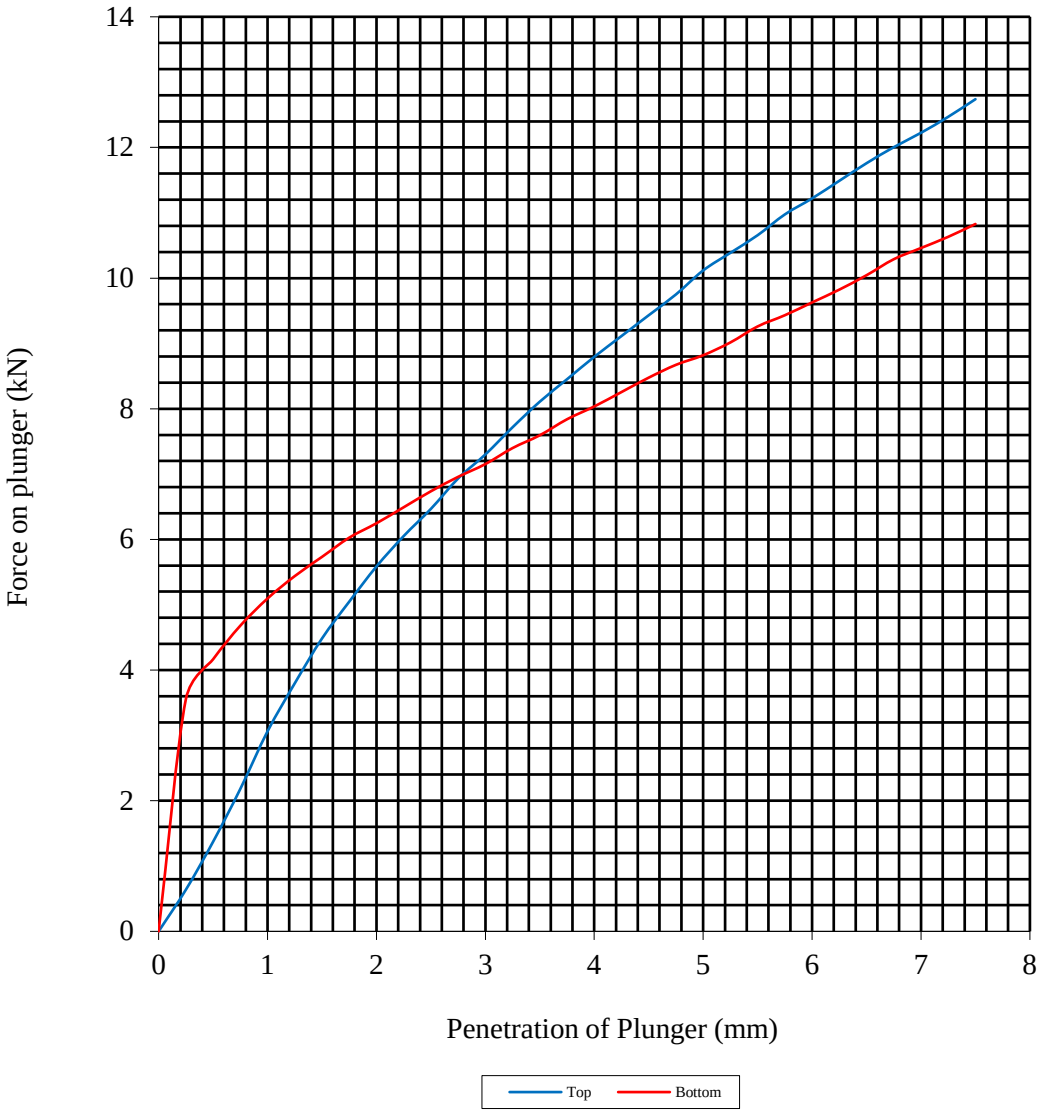
CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number: **Mound NW** **Top Depth (m):** **0.30**

Sample Number: **1** **Base Depth (m):** **0.40**

Sample Type: **LB**



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	10	Surcharge Kg:	4.20	Sample Top	10	Sample Top	50.6
Bulk Density Mg/m3:	1.82	Soaking Time hrs	0	Sample Bottom	10	Sample Bottom	51.0
Dry Density Mg/m3:	1.65	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			1				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stanstead Terminal 2 (ST2)-Ground Investigation

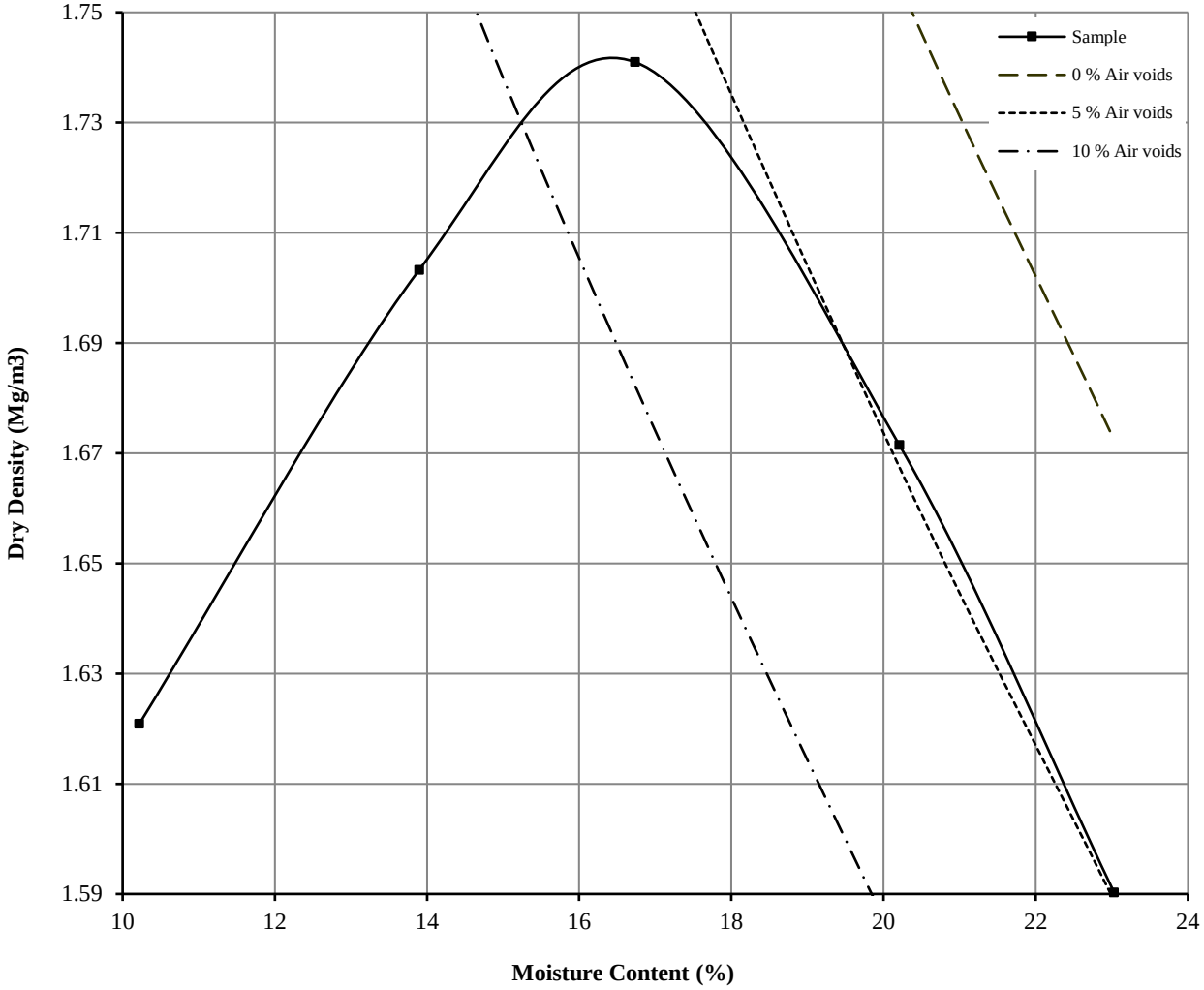
Contract No: **PSL22/4751**

Client Ref: **D2027-22**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.3 : 1990

Hole Number:	**Mound NW**	**Top Depth (m) :**	**0.30**
Sample Number:	**1**	**Base Depth (m) :**	**0.40**
Sample Type:	**LB**		



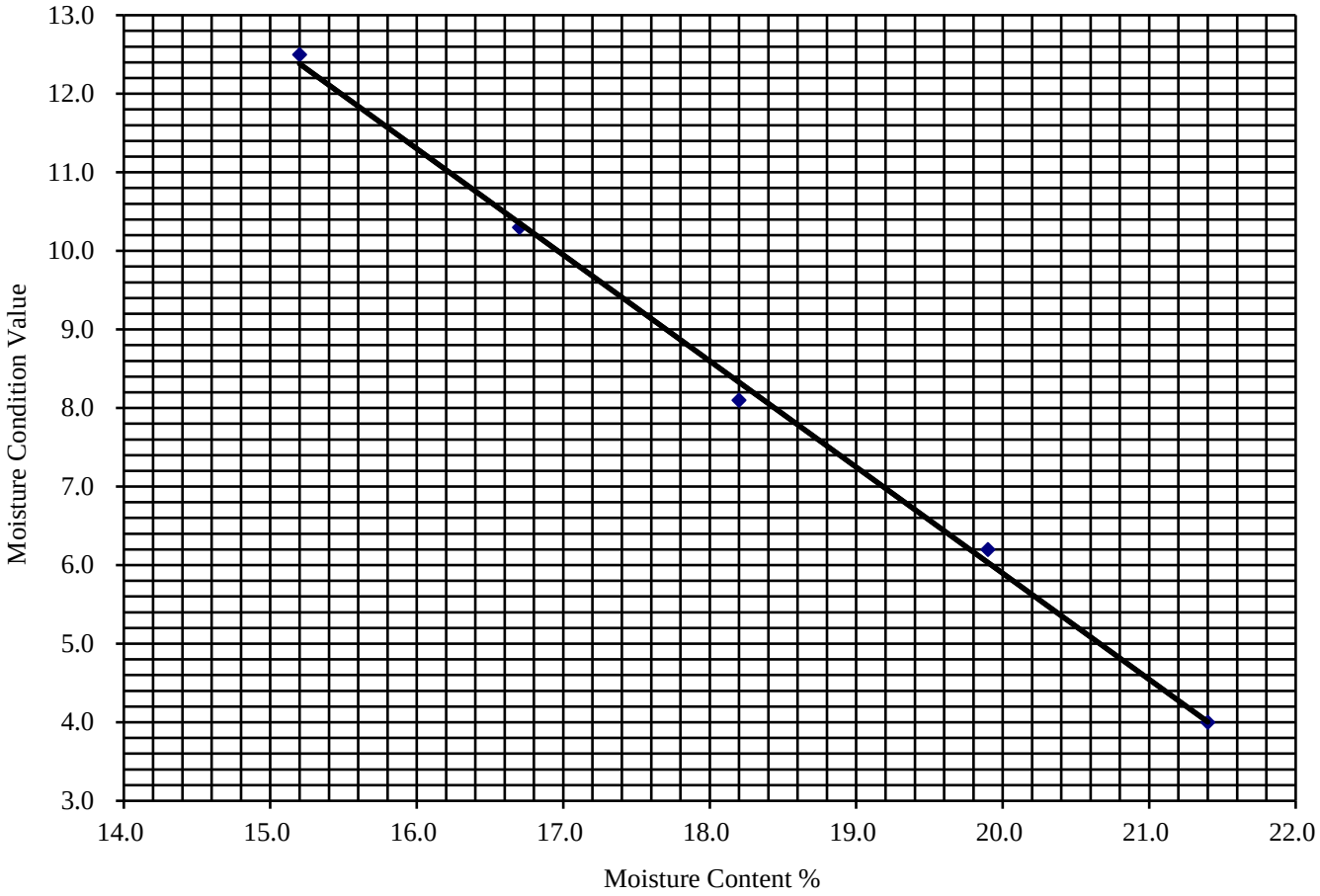
Initial Moisture Content:		10	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.72	Assumed	Material Retained on 37.5 mm Test Sieve (%):		1
Maximum Dry Density (Mg/m3):		1.74	Material Retained on 20.0 mm Test Sieve (%):		1
Optimum Moisture Content (%):		17			
Remarks See summary of soil descriptions					

MOISTURE CONDITION VALUE CALIBRATION

BS1377 : Part 4 : 1990 Clause 5.5

Hole Number:	**Mound NW**	**Top Depth (m):**	**0.30**
Sample Number:	**1**	**Base Depth (m):**	**0.40**
Sample Type:	**LB**		

Initial Moisture Content (%):	10
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	1



Test Results.

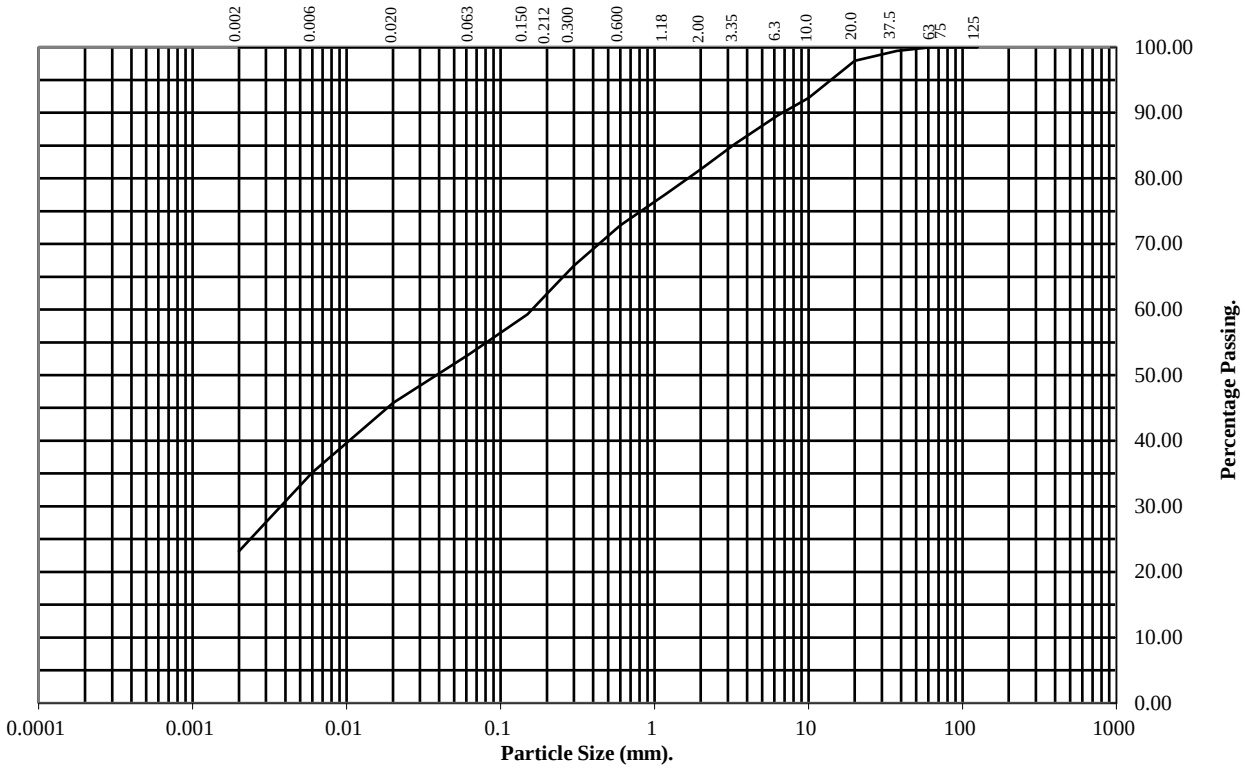
Test Number	1	2	3	4	5
Moisture Content (%)	15.2	16.7	18.2	19.9	21.4
MCV	12.5	10.3	8.1	6.2	4.0

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**Mound NW**	**Top Depth (m):**	**0.30**
Sample Number:	**1**	**Base Depth(m):**	**0.40**
Sample Type:	**LB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	99
20	98
10	92
6.3	90
3.35	85
2	81
1.18	78
0.6	73
0.3	67
0.212	63
0.15	59
0.063	53

Particle Diameter	Percentage Passing
0.02	46
0.006	35
0.002	23

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	28
Silt	30
Clay	23

Remarks:
See Summary of Soil Descriptions

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			0.30-0.40m
	Description			See summary of soil descriptions.
	Type			Recompacted at 95% MDD, optimum moisture content
	Initial Sample Length	L_0	(mm)	200.1
	Initial Sample Diameter	D_0	(mm)	100.1
	Initial Sample Weight	W_0	(gr)	3050.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.94
	Particle Density	ρ_s	(Mg/m3)	2.72

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	700	800	1000	
Initial Back Pressure	U_{bi}	(kPa)	600	600	600	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	17			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.65			
Initial Voids Ratio	e_i	.	0.647			
Initial Degree of Saturation	S_i	(%)	73			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	19			
Final Dry Density	ρ_{df}	(Mg/m3)	1.74			
Final Voids Ratio	e_f	.	0.566			
Final Degree of Saturation	S_f	(%)	91.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	3.10	4.34	19.54	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	193.5	294.4	567.6	
Minor Stress At Failure	σ_3'	(kPa)	64.0	114.0	315.0	
Major Stress At Failure	σ_1'	(kPa)	257.5	408.4	882.6	
Principal Stress Ratio At Failure	σ_1'/σ_3'		4.024	3.583	2.802	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Mound MW 0.30-0.40m 1LB
		Test Date	11/08/2022
		Borehole	Mound MW
Jobfile	Stansted Terminal 2	Sample	0.30-0.40m 1LB
Client	Socotec	Depth	0.30-0.40m

UKAS TESTING 4043

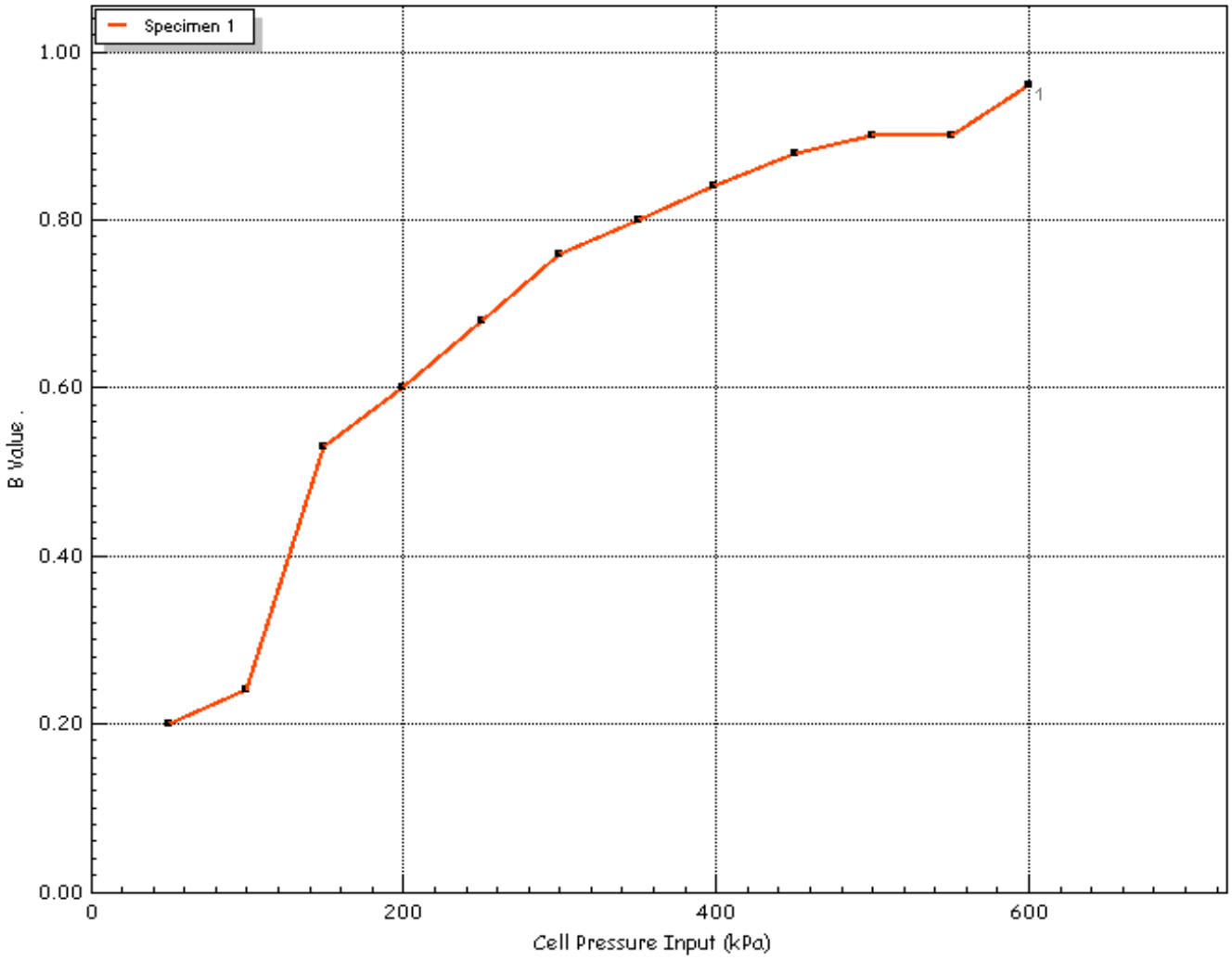
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u pwp	(kPa)	586
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Mound MW 0.30-0.40m 1LB
		Test Date	11/08/2022
		Borehole	Mound MW
Jobfile	Stansted Terminal 2	Sample	0.30-0.40m 1LB
Client	Socotec	Depth	0.30-0.40m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

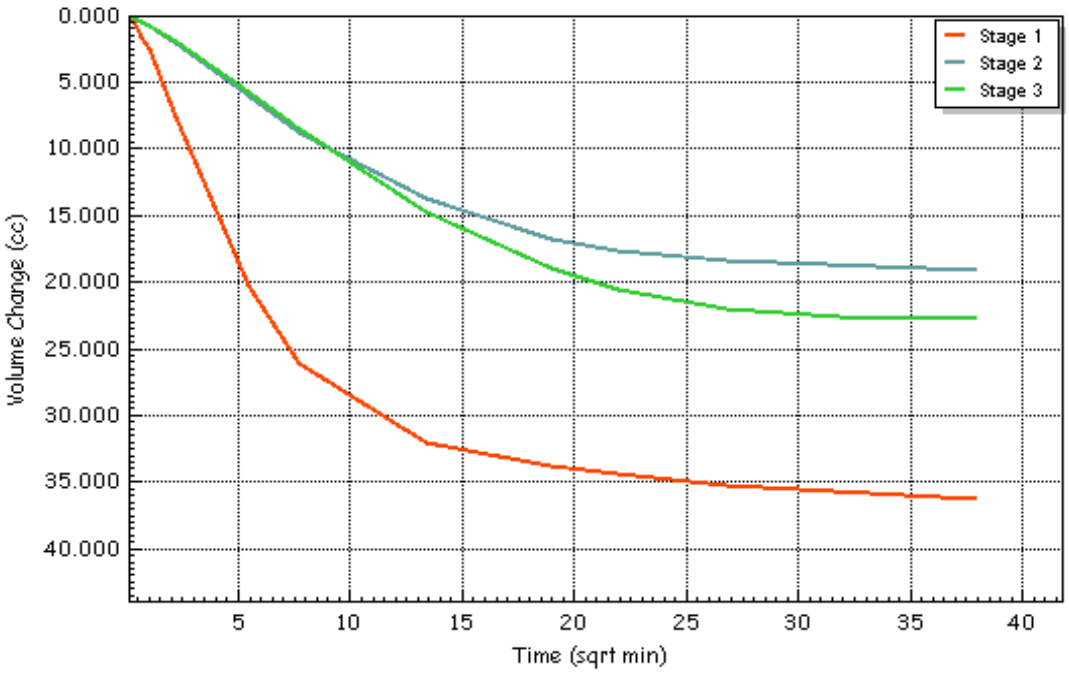
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	700	800	1000
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	687	718	839
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	2.30	1.21	1.45
Corrected Length	L_C	(mm)	198.6	191.6	186.8
Corrected Area	A_C	(cm2)	77.49	79.30	80.10
Corrected Volume	V_C	(cc)	1538.453	1519.380	1496.574
t100	t_{100}	(min)	84.82	238.14	340.80
Consolidation	c_v	(m2/year)	2.441	0.870	0.608
Compressibility	m_v	(m2/MN)	0.265	0.103	0.061
Test Time	t_F	(h:m:s)	02:32:40	07:08:39	10:13:26
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.06503	0.06503	0.06503

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Mound MW 0.30-0.40m 1LB
		Test Date	11/08/2022
		Borehole	Mound MW
Jobfile	Stansted Terminal 2	Sample	0.30-0.40m 1LB
Client	Socotec	Depth	0.30-0.40m

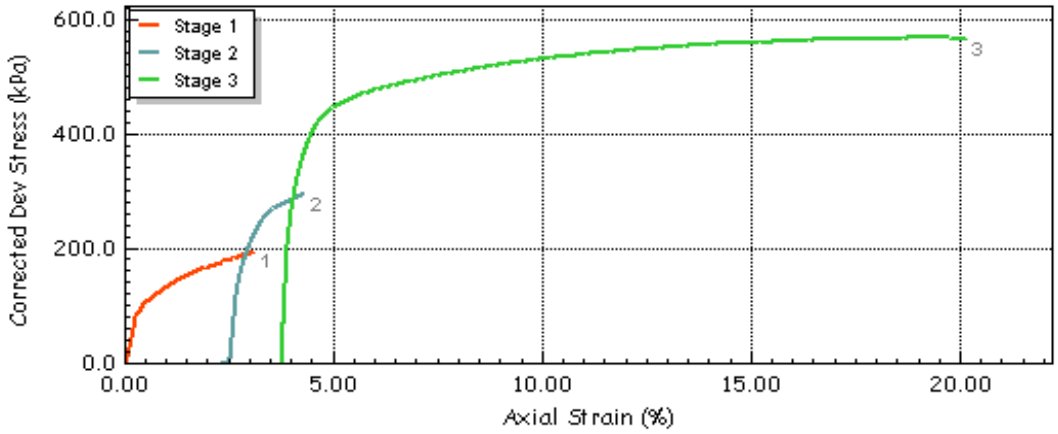
UKAS TESTING 4043

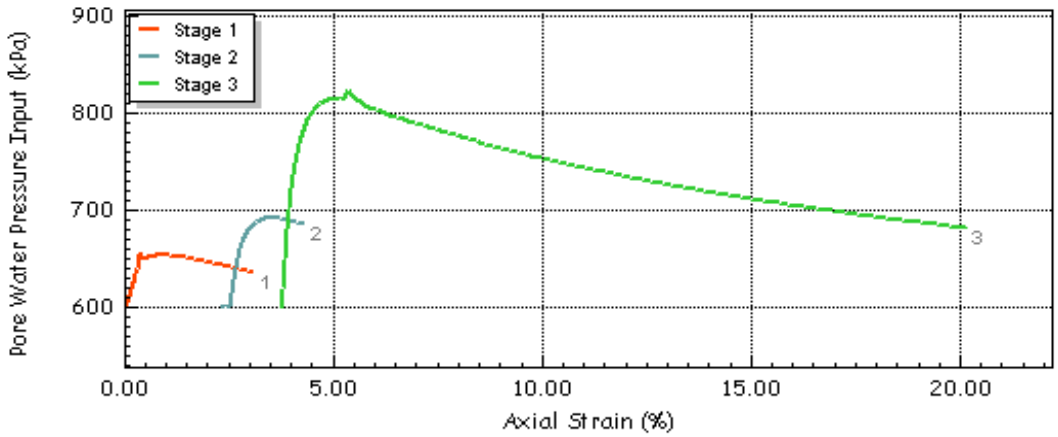
PSL PROFESSIONAL SOILS LABORATORY

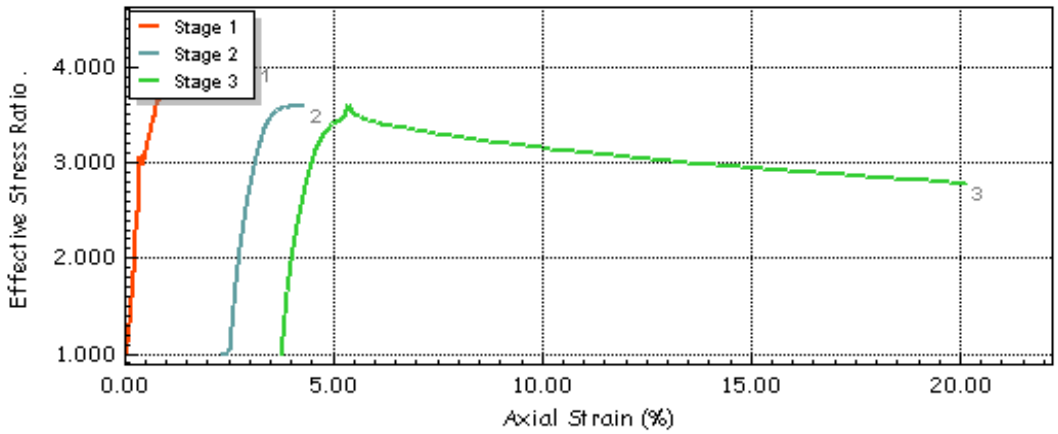
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Mound MW 0.30-0.40m 1LB
		Test Date	11/08/2022
Jobfile	Stansted Terminal 2	Borehole	Mound MW
Client	Socotec	Sample	0.30-0.40m 1LB
		Depth	0.30-0.40m

UKAS TESTING 4043

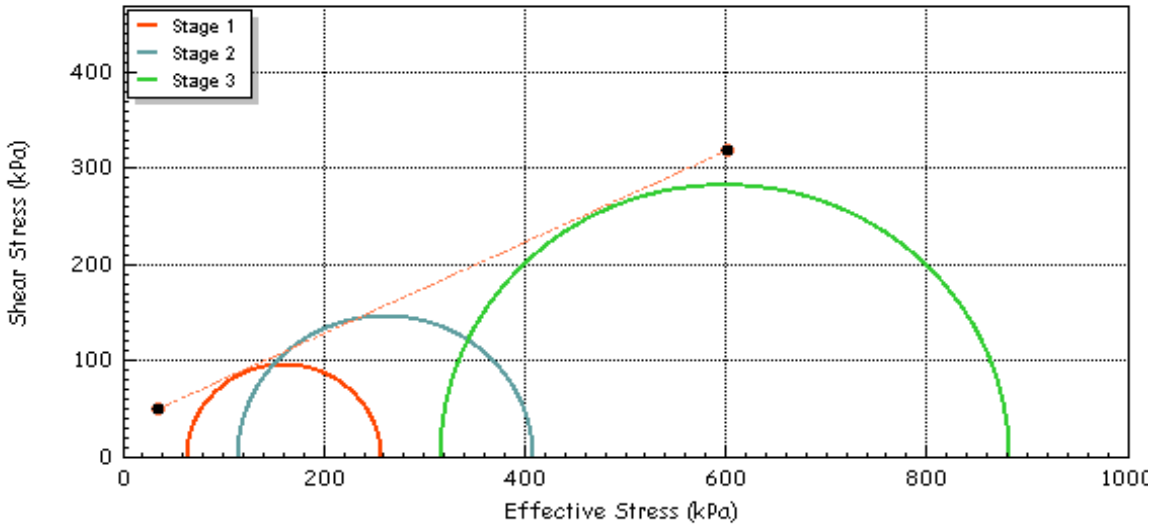
PSL PROFESSIONAL SOILS LABORATORY

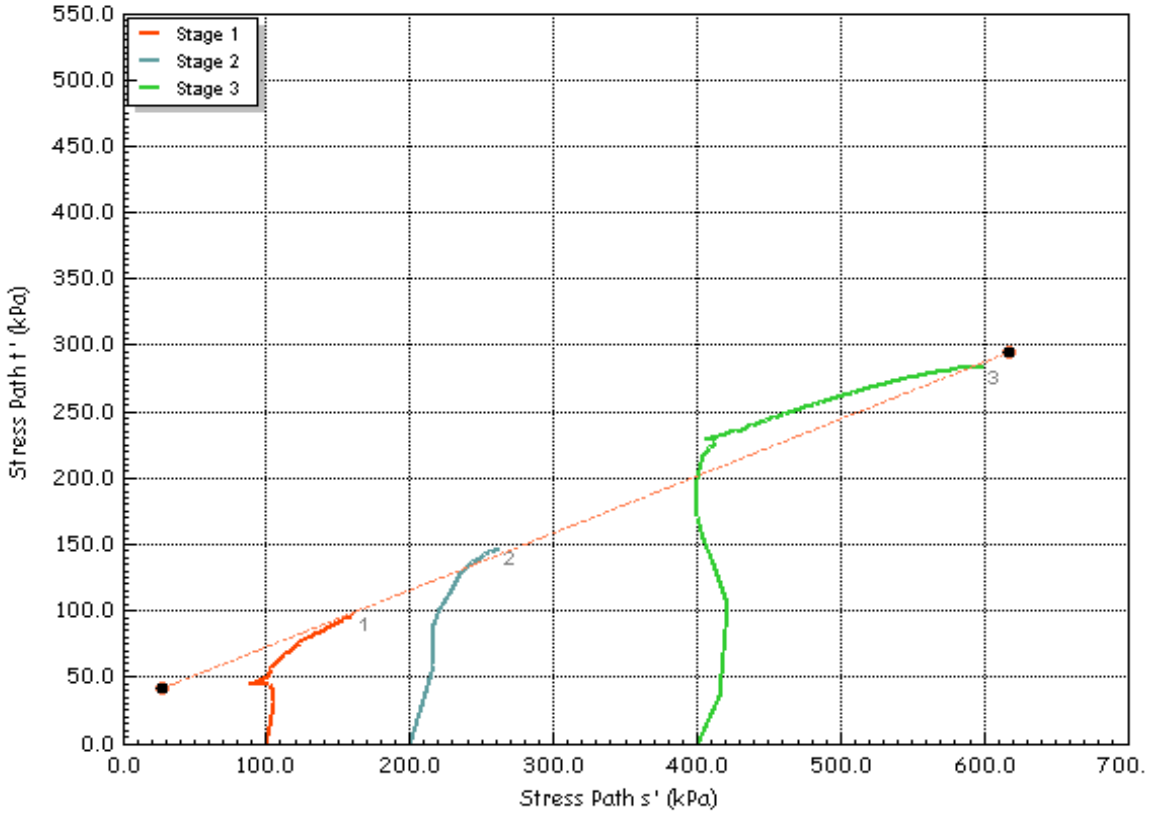
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	32.60	Effective Cohesion	c'	(kPa)	32.60
Effective Friction	ϕ'	(deg)	25.4	Effective Friction	ϕ'	(deg)	25.4





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	Mound MW 0.30-0.40m 1LB
		Test Date	11/08/2022
Jobfile	Stansted Terminal 2	Borehole	Mound MW
Client	Socotec	Sample	0.30-0.40m 1LB
		Depth	0.30-0.40m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

LABORATORY REPORT

4043

Contract Number: PSL22/4752

Report Date: 01 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins/Platon Kostelletos

Contract Title: Stanstead Terminal 2 (ST2)

Date Received: 15/7/2022
Date Commenced: 15/7/2022
Date Completed: 9/8/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)
[redacted]
L Knight (Senior Technician)
S Eyre (Senior Technician)
T Watkins (Senior Technician)

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fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP03	101	LB	0.60	1.30	Grey mottled brown very gravelly very sandy CLAY. Gravel is chalk.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP03	101	LB	0.60	1.30	7.1			30	15	15	58	Low Plasticity CL

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

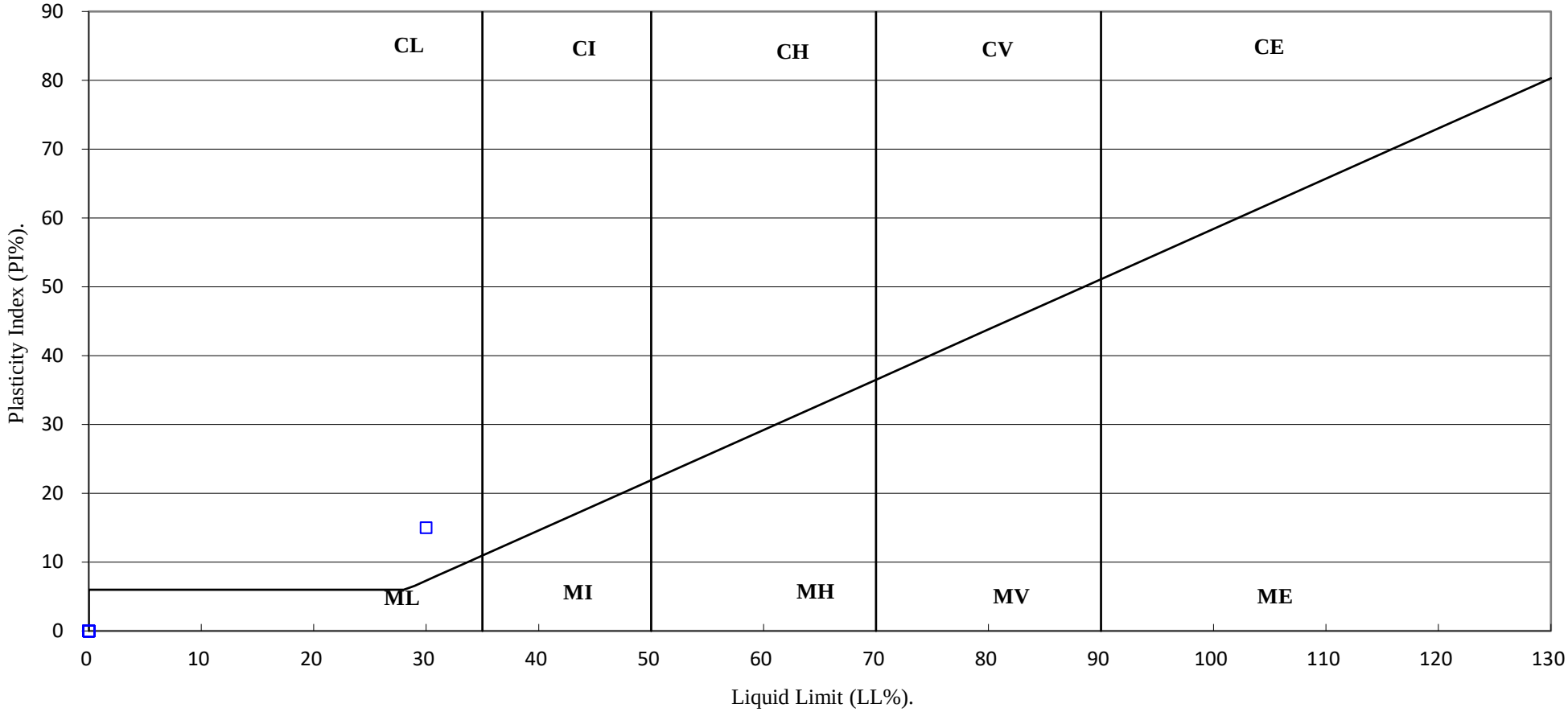
Contract No:

PSL22/4752

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



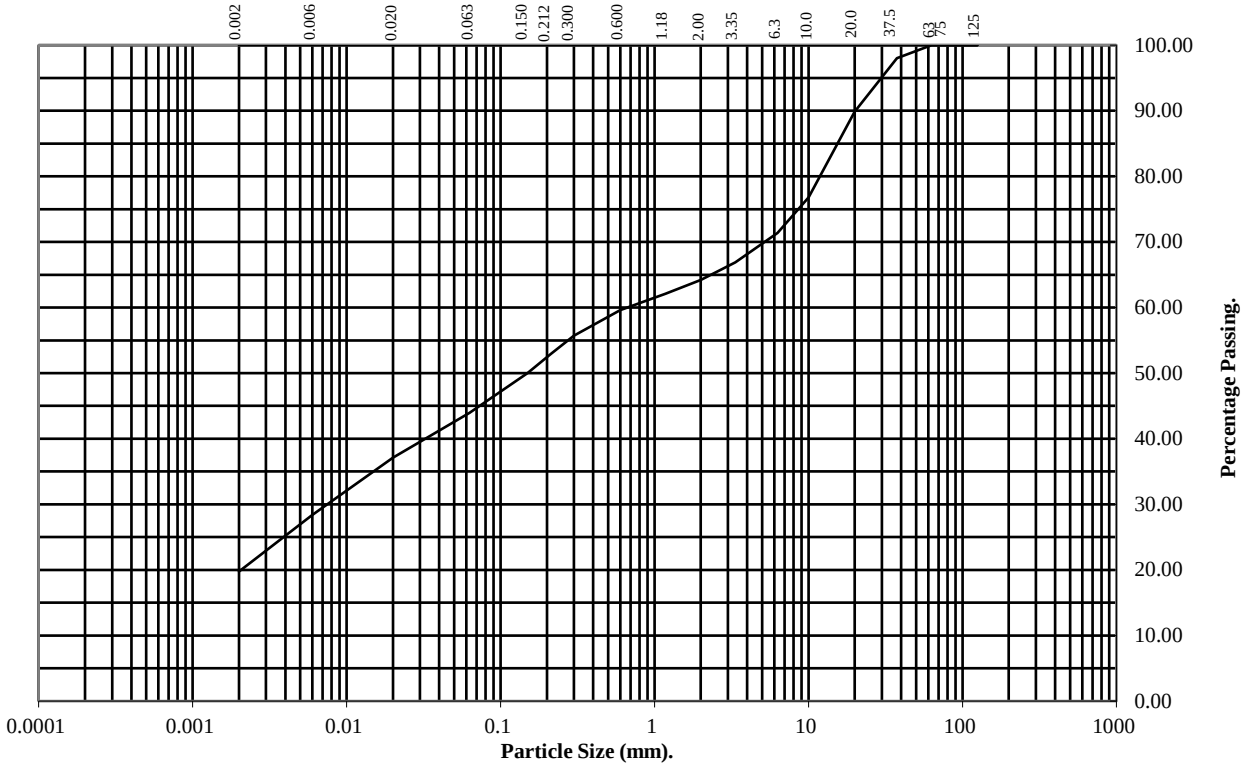
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/4752 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP03**	**Top Depth (m):**	**0.60**
Sample Number:	**101**	**Base Depth(m):**	**1.30**
Sample Type:	**LB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	98
20	90
10	77
6.3	71
3.35	67
2	64
1.18	62
0.6	60
0.3	56
0.212	53
0.15	50
0.063	44

Particle Diameter	Percentage Passing
0.02	37
0.006	28
0.002	20

Soil Fraction	Total Percentage
Cobbles	0
Gravel	36
Sand	20
Silt	24
Clay	20

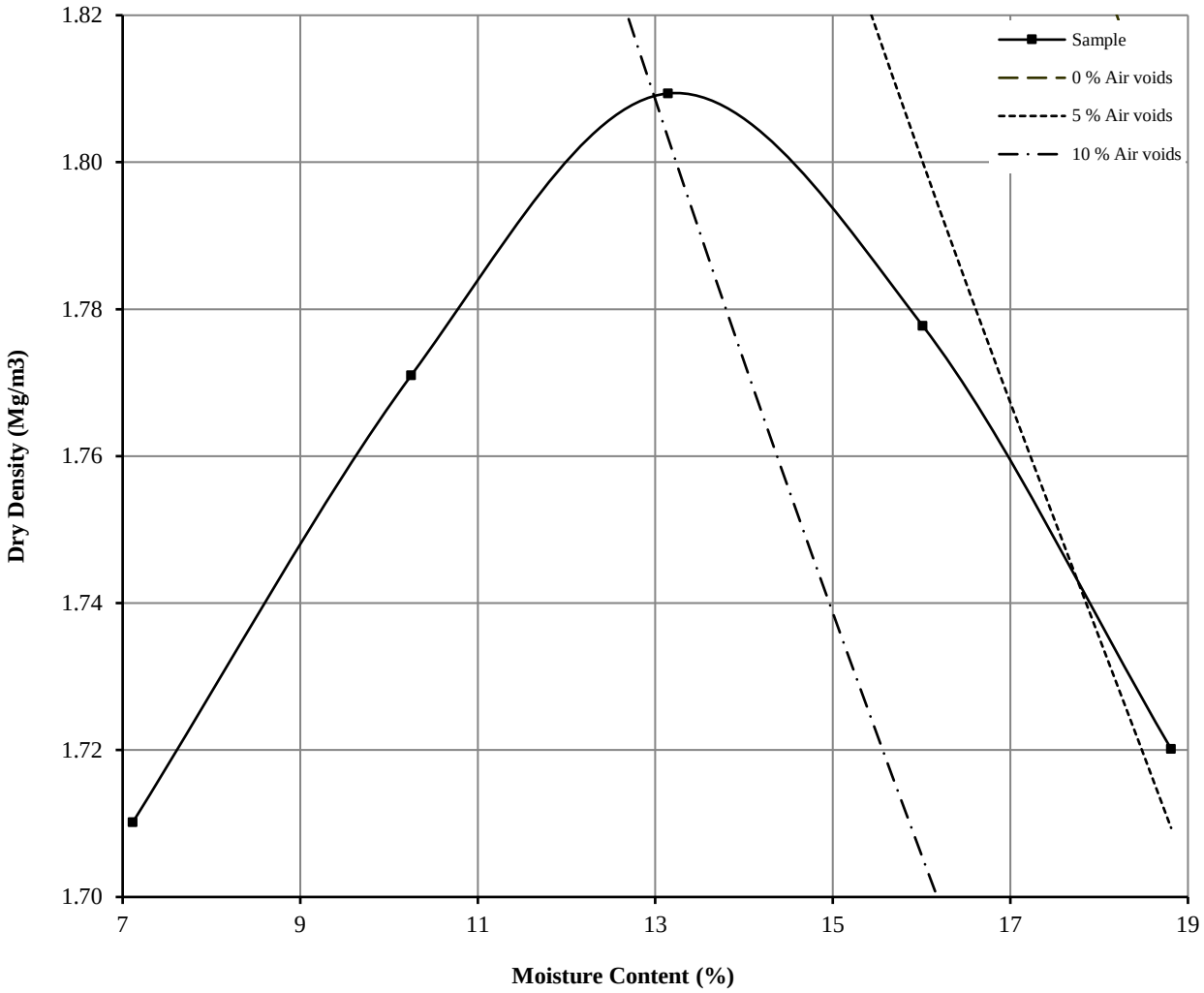
Remarks:

See Summary of Soil Descriptions

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**CP03**	**Top Depth (m) :**	**0.60**
Sample Number:	**101**	**Base Depth (m) :**	**1.30**
Sample Type:	**LB**		

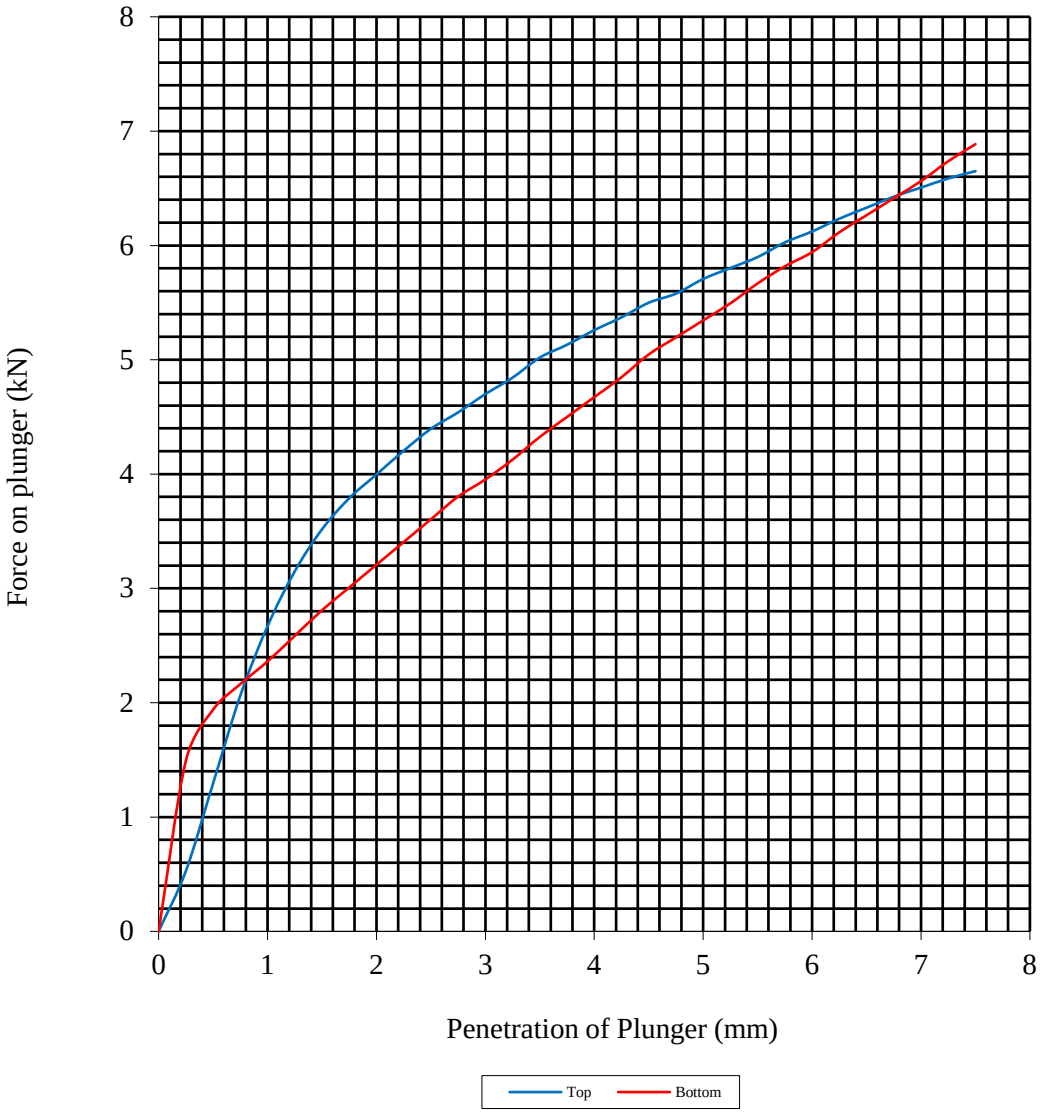


Initial Moisture Content:		7.1	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.72	Assumed	Material Retained on 37.5 mm Test Sieve (%):		2
Maximum Dry Density (Mg/m3):		1.81	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		13			
Remarks See summary of soil descriptions					

CALIFORNIA BEARING RATIO TEST

BS 1377 : Part 4 : 1990

Hole Number:	**CP03**	**Top Depth (m):**	**0.60**
Sample Number:	**101**	**Base Depth (m):**	**1.30**
Sample Type:	**LB**		



Initial Sample Conditions		Sample Preparation		Final Moisture Content %		C.B.R. Value %	
Moisture Content:	7.1	Surcharge Kg:	4.20	Sample Top	7.0	Sample Top	33.3
Bulk Density Mg/m3:	1.83	Soaking Time hrs	0	Sample Bottom	7.1	Sample Bottom	27.3
Dry Density Mg/m3:	1.71	Swelling mm:	0.00	Remarks : See Summary of Soil Descriptions.			
Percentage retained on 20mm BS test sieve:			10				
Compaction Conditions		2.5kg					

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stanstead Terminal 2 (ST2)-Ground Investigation

Contract No: PSL22/4752

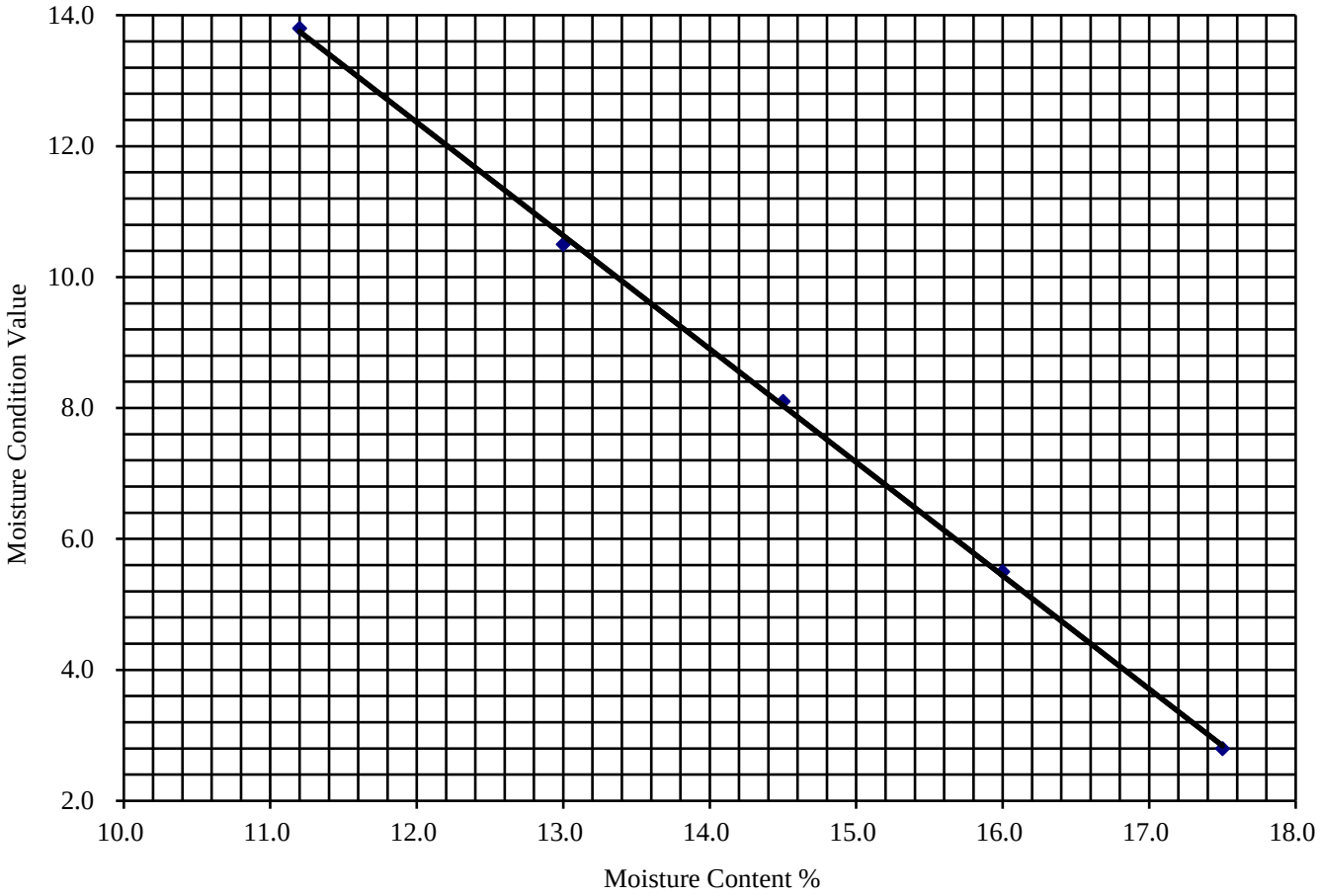
Client Ref: D2027-22

MOISTURE CONDITION VALUE CALIBRATION

BS1377 : Part 4 : 1990 Clause 5.5

Hole Number:	**CP03**	**Top Depth (m):**	**0.60**
Sample Number:	**101**	**Base Depth (m):**	**1.30**
Sample Type:	**LB**		

Initial Moisture Content (%):	7.3
Single/Separate Samples Tested	Separate
Material Retained on the 20mm BS Test Sieve (%):	8



Test Results.

Test Number	1	2	3	4	5
Moisture Content (%)	11.2	13.0	14.5	16.0	17.5
MCV	13.8	10.5	8.1	5.5	2.8

ONE DIMENSIONAL CONSOLIDATION TEST

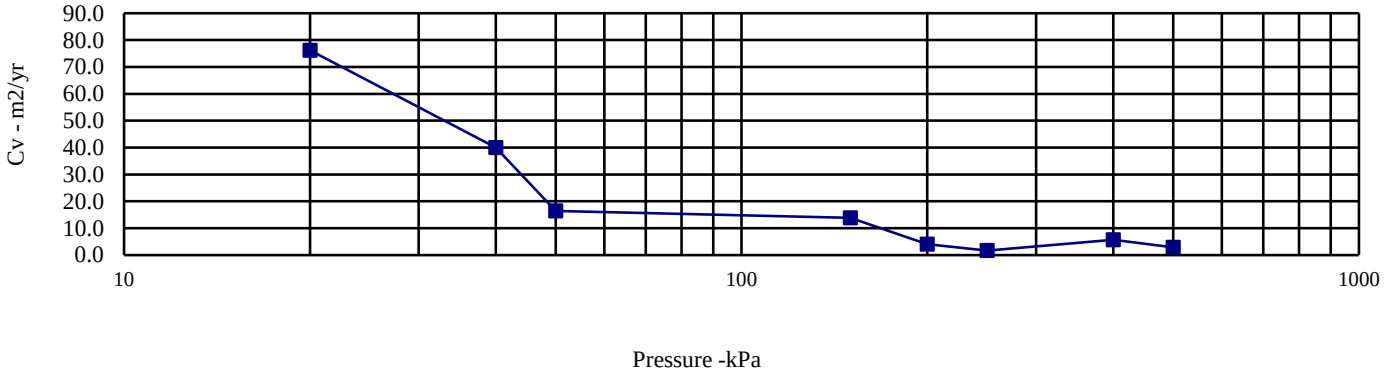
BS 1377: Part 5: 1990: Clause 3

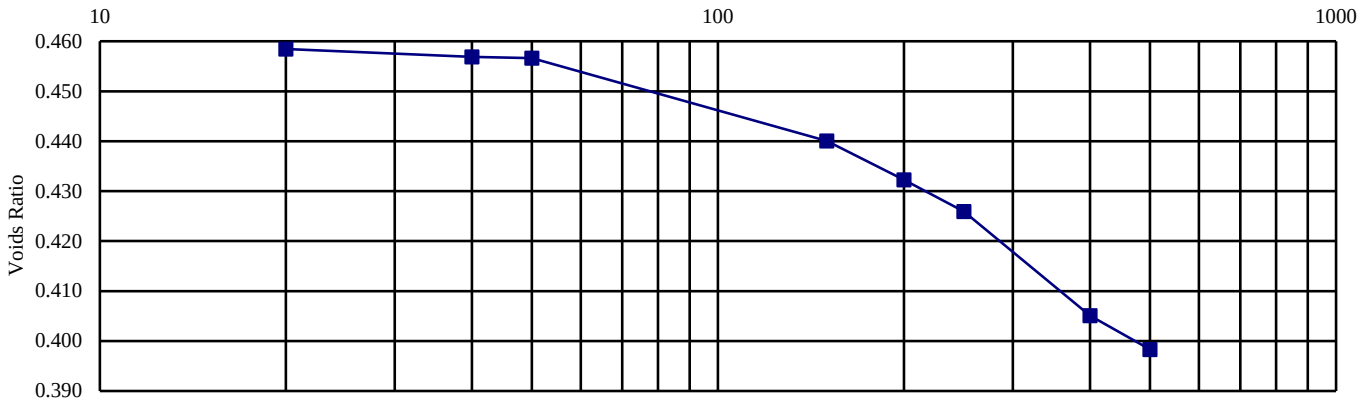
Hole Number: **CP03** **Top Depth (m):** **0.60**

Sample Number: **101** **Base Depth (m) :** **1.30**

Sample Type: **LB**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	14						
Bulk Density (Mg/m3):	2.08	0	20	0.087	76.234	Method used to	
Dry Density (Mg/m3):	1.81	20	40	0.055	40.056	determine CV:	T90
Voids Ratio:	0.461	40	50	0.015	16.482	Nominal temperature	
Degree of saturation:	83.0	50	150	0.114	13.893	during test ' C:	20
Height (mm):	20.096	150	200	0.108	4.085	Remarks:	
Diameter (mm)	75.085	200	250	0.088	1.682	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	250	400	0.098	5.686		
Assumed		400	500	0.048	2.851		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4752 **Client Ref:** D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			0.60-1.30m
	Description			See summary of soil descriptions.
	Type			Recompacted to 95% of MDD at OMC.
	Initial Sample Length	L_0	(mm)	200.1
	Initial Sample Diameter	D_0	(mm)	100.1
	Initial Sample Weight	W_0	(gr)	2712.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.72
	Particle Density	ρ_s	(Mg/m3)	2.72

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	700	800	1000	
Initial Back Pressure	U_{bi}	(kPa)	600	600	600	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	13			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.53			
Initial Voids Ratio	e_i	.	0.782			
Initial Degree of Saturation	S_i	(%)	45			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	15			
Final Dry Density	ρ_{df}	(Mg/m3)	1.68			
Final Voids Ratio	e_f	.	0.621			
Final Degree of Saturation	S_f	(%)	67.6			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.84	4.67	18.23	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	125.7	246.6	435.3	
Minor Stress At Failure	σ_3'	(kPa)	47.7	107.8	203.0	
Major Stress At Failure	σ_1'	(kPa)	173.4	354.4	638.3	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.635	3.287	3.144	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 0.60-1.30m
		Test Date	11/08/2022
		Borehole	CP03
Jobfile	Standsted Terminal 2	Sample	0.60-1.30m
Client	Socotec	Depth	0.60-1.30m

UKAS TESTING 4043

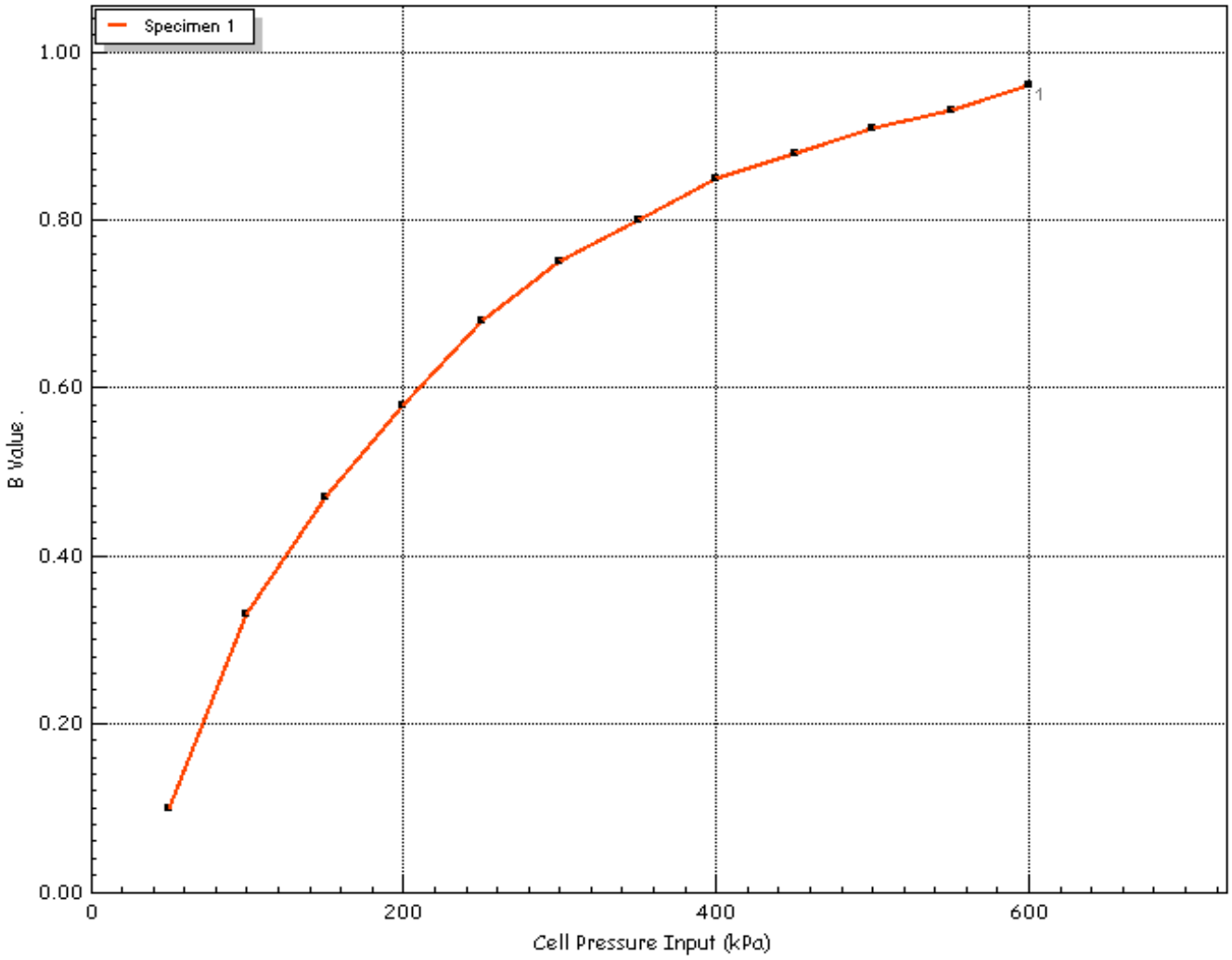
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u pwp	(kPa)	588
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 0.60-1.30m
		Test Date	11/08/2022
Jobfile	Standsted Terminal 2	Borehole	CP03
Client	Socotec	Sample	0.60-1.30m
		Depth	0.60-1.30m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

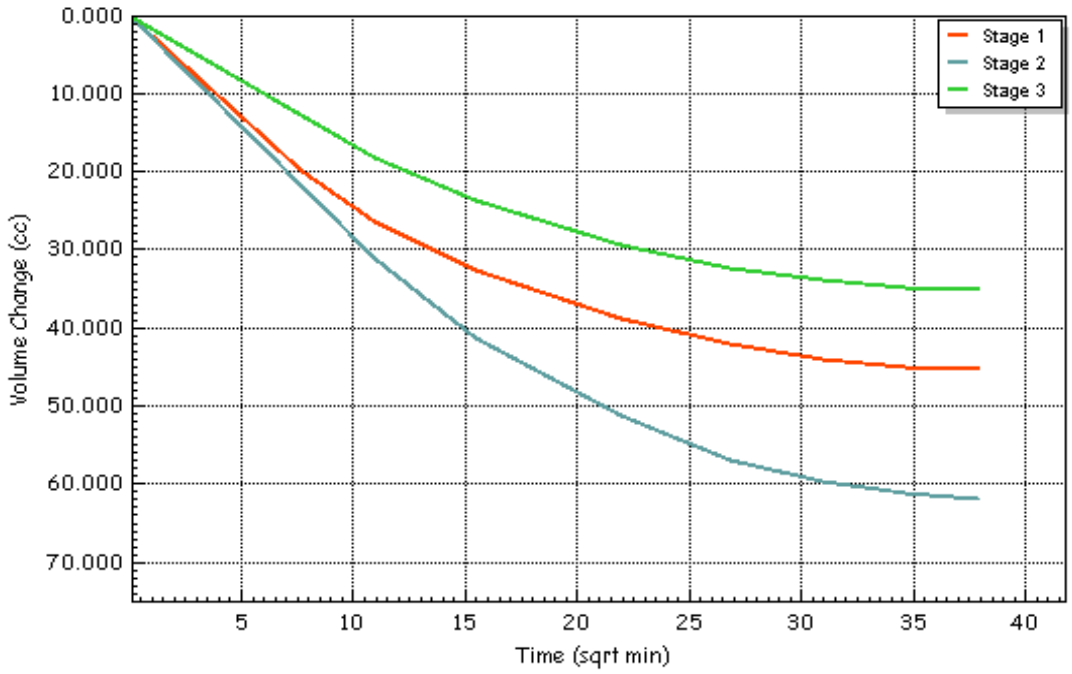
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	700	800	1000
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	687	739	842
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	2.87	6.81	9.04
Corrected Length	L_C	(mm)	198.2	190.1	178.5
Corrected Area	A_C	(cm2)	77.19	74.95	74.60
Corrected Volume	V_C	(cc)	1529.473	1467.555	1432.387
T100 Time to Failure	t_{100}	(min)	304.76	468.81	425.25
Consolidation	c_v	(m2/year)	0.679	0.442	0.487
Compressibility	m_v	(m2/MN)	0.332	0.489	0.374
Test Time	t_F	(h:m:s)	09:08:34	14:03:51	12:45:27
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.01806	0.01806	0.01806

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 0.60-1.30m
		Test Date	11/08/2022
		Borehole	CP03
Jobfile	Standsted Terminal 2	Sample	0.60-1.30m
Client	Socotec	Depth	0.60-1.30m

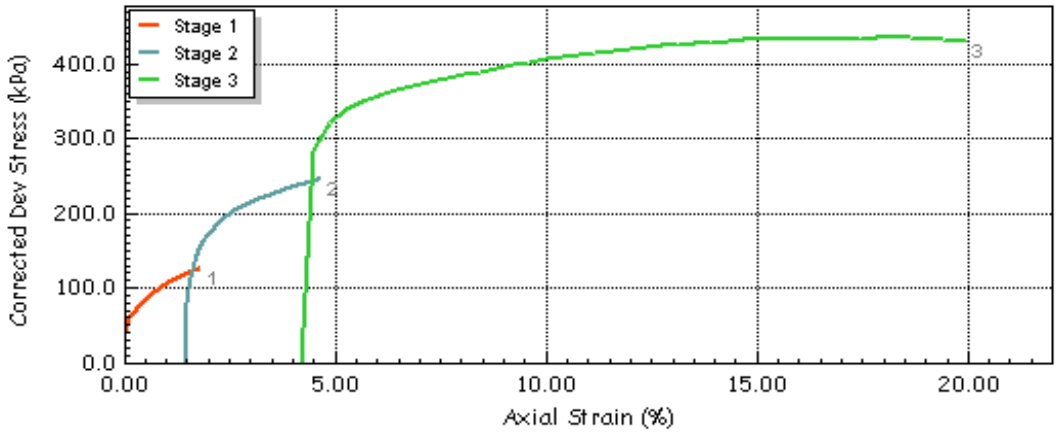
UKAS TESTING 4043

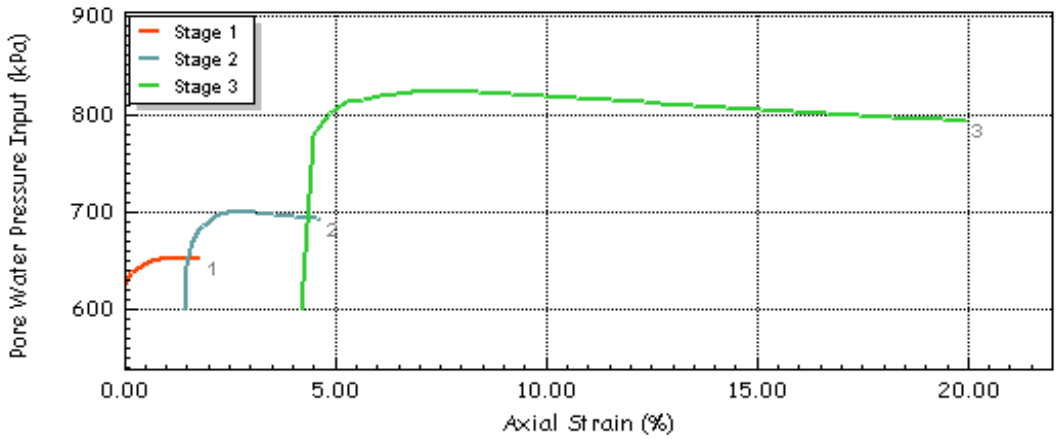
PSL PROFESSIONAL SOILS LABORATORY

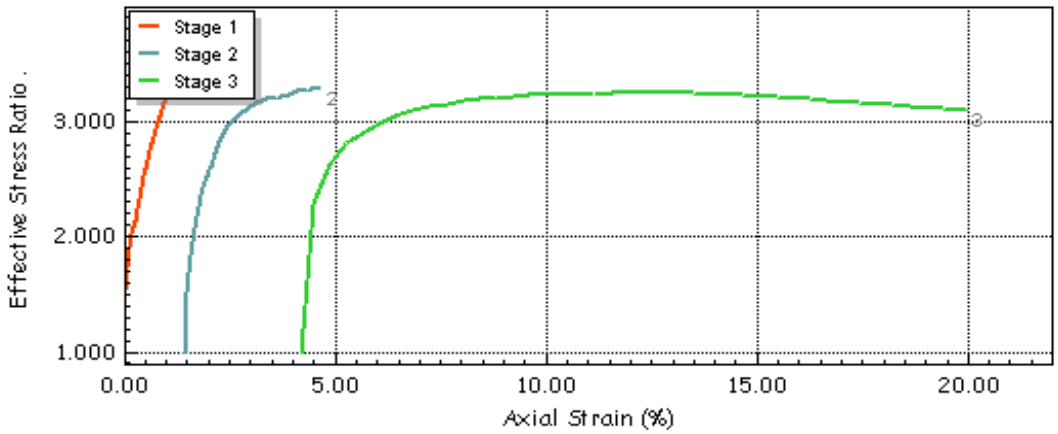
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 0.60-1.30m
		Test Date	11/08/2022
Jobfile	Standsted Terminal 2	Borehole	CP03
Client	Socotec	Sample	0.60-1.30m
		Depth	0.60-1.30m

UKAS TESTING 4043

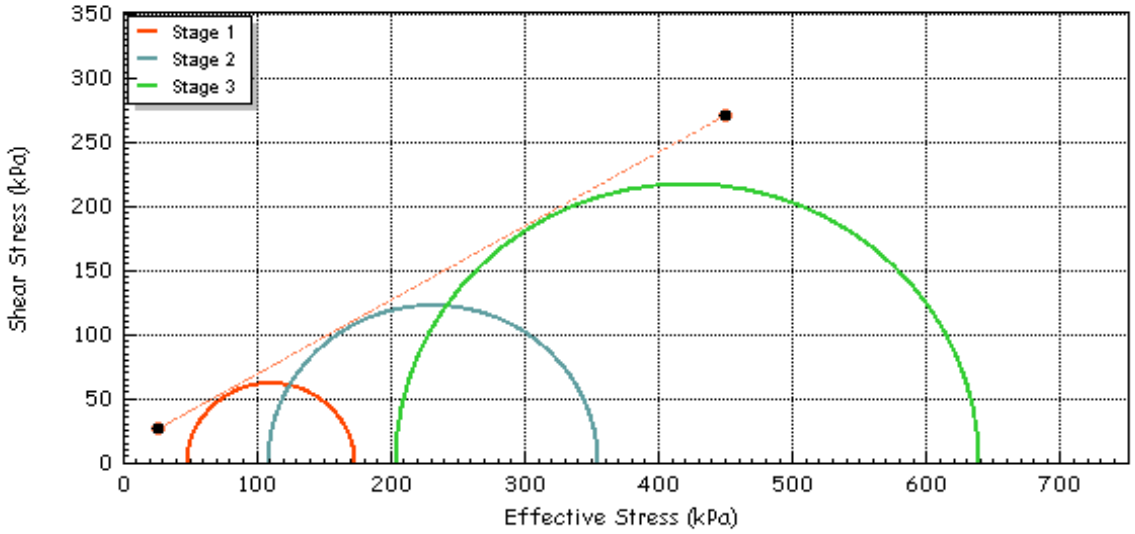
PSL PROFESSIONAL SOILS LABORATORY

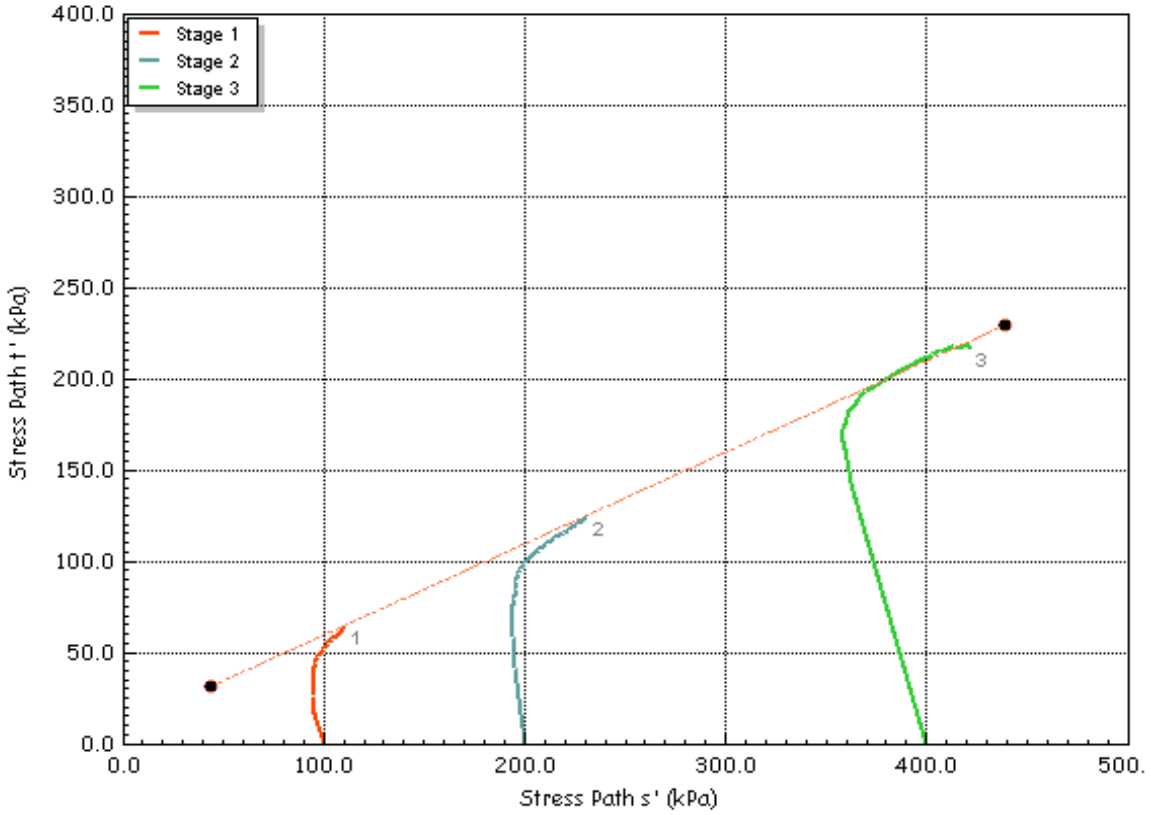
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	11.42	Effective Cohesion	c'	(kPa)	11.42
Effective Friction	ϕ'	(deg)	30.0	Effective Friction	ϕ'	(deg)	30.0





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 0.60-1.30m
		Test Date	11/08/2022
Jobfile	Standsted Terminal 2	Borehole	CP03
Client	Socotec	Sample	0.60-1.30m
		Depth	0.60-1.30m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

LABORATORY REPORT

4043

Contract Number: PSL22/4753

Report Date: 28 July 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins/Platon Kostelletos

Contract Title: Stanstead Terminal 2 (ST2)

Date Received: 15/7/2022
Date Commenced: 15/7/2022
Date Completed: 28/7/2022

Notes: **Opinions and Interpretations are outside the UKAS Accreditation**

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Checked and Approved Signatories:

A Watkins (Director)

R Berriman (Quality Manager)

S Royle (Laboratory Manager)

[redacted]

L Knight (Assistant Laboratory Manager)

S Eyre (Senior Technician)

R Gibbons (Senior Technician)

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Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS01	7	D	0.70		Brown very gravelly sandy CLAY.
DS01	14	D	2.20		Brown gravelly sandy CLAY.
DS02	5	D	0.50		Brown gravelly slightly sandy CLAY.
DS02	16	D	1.80		Brown gravelly sandy CLAY.
DS02	21	D	3.80		Brown gravelly sandy CLAY.
DS04	7	D	0.70		Brown gravelly slightly sandy CLAY.
DS04	23	D	2.80		Brown very gravelly slightly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS01	7	D	0.70		8.1			42	20	22	60	Intermediate Plasticity CI
DS01	14	D	2.20		18			38	19	19	85	Intermediate Plasticity CI
DS02	5	D	0.50		16			59	22	37	89	High Plasticity CH
DS02	16	D	1.80		18			47	20	27	81	Intermediate Plasticity CI
DS02	21	D	3.80		16			39	19	20	89	Intermediate Plasticity CI
DS04	7	D	0.70		16							
DS04	23	D	2.80		18			52	20	32	64	High Plasticity CH

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

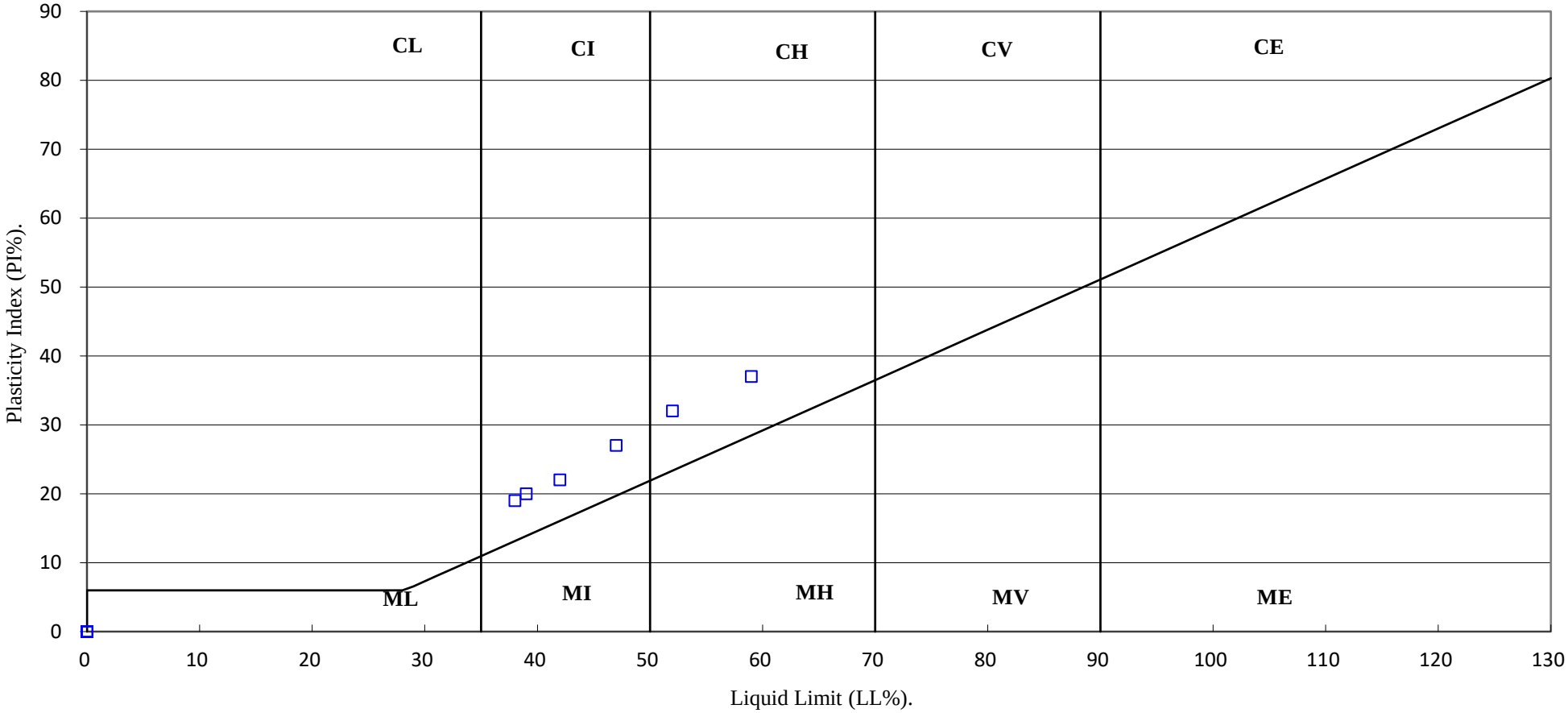
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/4753
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/4753 **Client Ref:** D2027-22

Certificate of Analysis

Certificate Number 22-14261 *Issued:* 29-Jul-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-14261

Client Reference PSL22/4753

Order No (not supplied)

Contract Title Stansted Terminal 2 (ST2)

Description One Soil sample.

Date Received 26-Jul-22

Date Started 26-Jul-22

Date Completed 29-Jul-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]
Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-14261
Client Ref PSL22/4753
Contract Title Stansted Terminal 2 (ST2)

Lab No	2037413
.Sample ID	DS04
Depth	1.30
Other ID	10
Sample Type	SOIL
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Inorganics				
Organic matter	DETSC 2002#	0.1	%	2.9

Key: # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-14261
Client Ref PSL22/4753
Contract Stansted Terminal 2 (ST2)

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2037413	DS04 1.30 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/4955

Report Date: 08 August 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 27/7/2022
Date Commenced: 27/7/2022
Date Completed: 8/8/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)

R Berriman (Quality Manager)

S Royle (Laboratory Manager)

[redacted]

L Knight (Senior Technician)

S Eyre (Senior Technician)

(Senior Technician)

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e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP02	12	UT	1.50	1.95	Stiff brown slightly gravelly sandy CLAY. Gravel is chalk.
CP02	14	B	1.50	2.00	Brown gravelly sandy CLAY. Gravel is chalk.
CP02	17	D	2.50		Brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP02	20	UT	3.50	3.95	Very stiff brown gravelly sandy CLAY. Gravel is chalk.
CP02	21	D	3.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP02	31	UT	5.50	5.95	Very stiff brown gravelly sandy CLAY. Gravel is chalk.
CP02	35	D	6.50		Brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP02	39	D	7.50		Brown mottled grey gravelly very sandy CLAY. Gravel is chalk.
CP02	44	D	8.50		Brown mottled grey gravelly very sandy CLAY. Gravel is chalk.
CP02	49	UT	9.50	9.95	Stiff grey slightly gravelly sandy CLAY. Gravel is chalk.
CP02	54	B	10.50	10.95	Grey sandy clayey GRAVEL. Gravel is chalk.
CP02	60	UT	12.50	12.95	Very stiff brown mottled grey slightly gravelly sandy CLAY. Gravel is chalk.
CP02	65	D	14.00		Brown mottled grey gravelly sandy CLAY. Gravel is chalk.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP02	17	D	2.50		16			38	19	19	82	Intermediate Plasticity CI
CP02	21	D	3.50		19			36	18	18	81	Intermediate Plasticity CI
CP02	35	D	6.50		19							
CP02	39	D	7.50		19			35	17	18	83	Intermediate Plasticity CI
CP02	44	D	8.50		20							
CP02	65	D	14.00		20			37	18	19	83	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

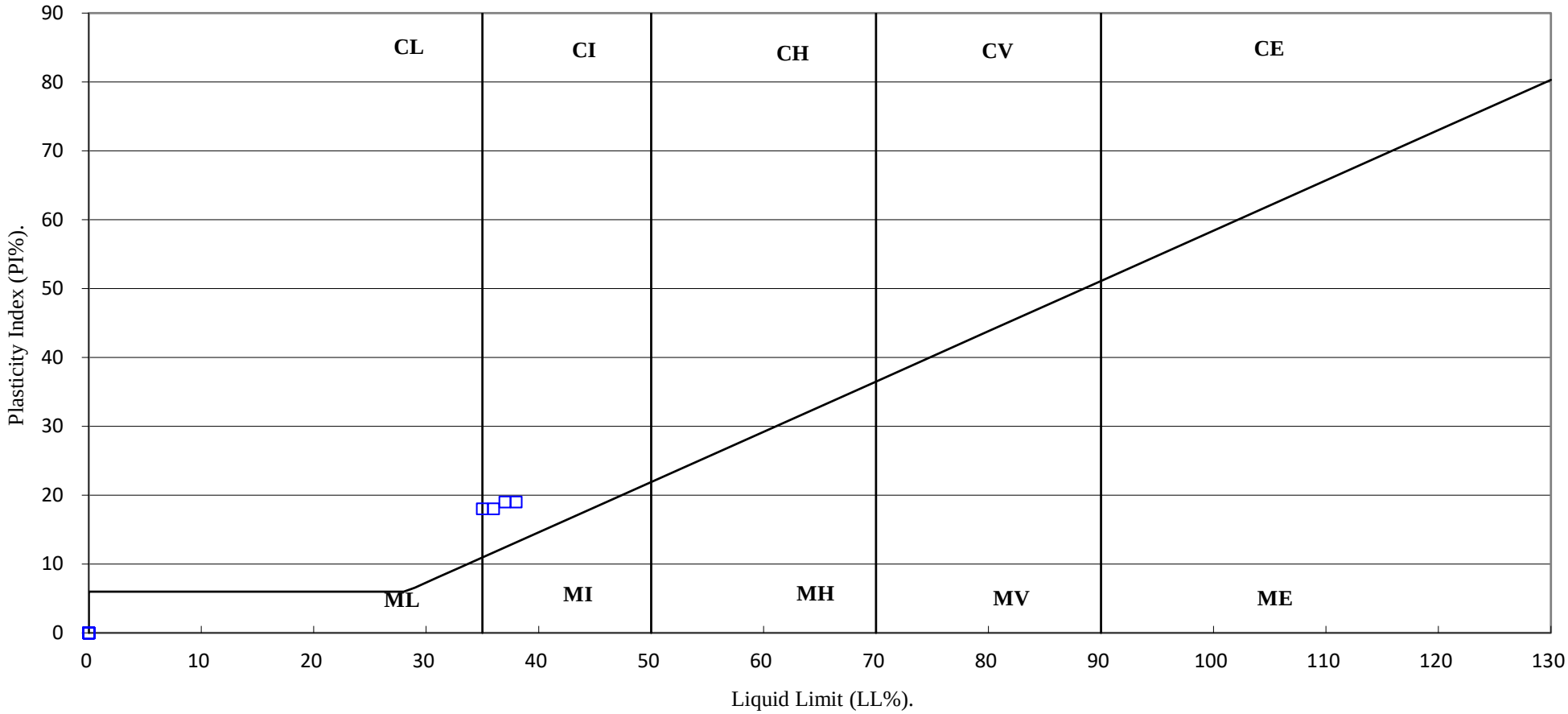
Contract No:

PSL22/4955

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



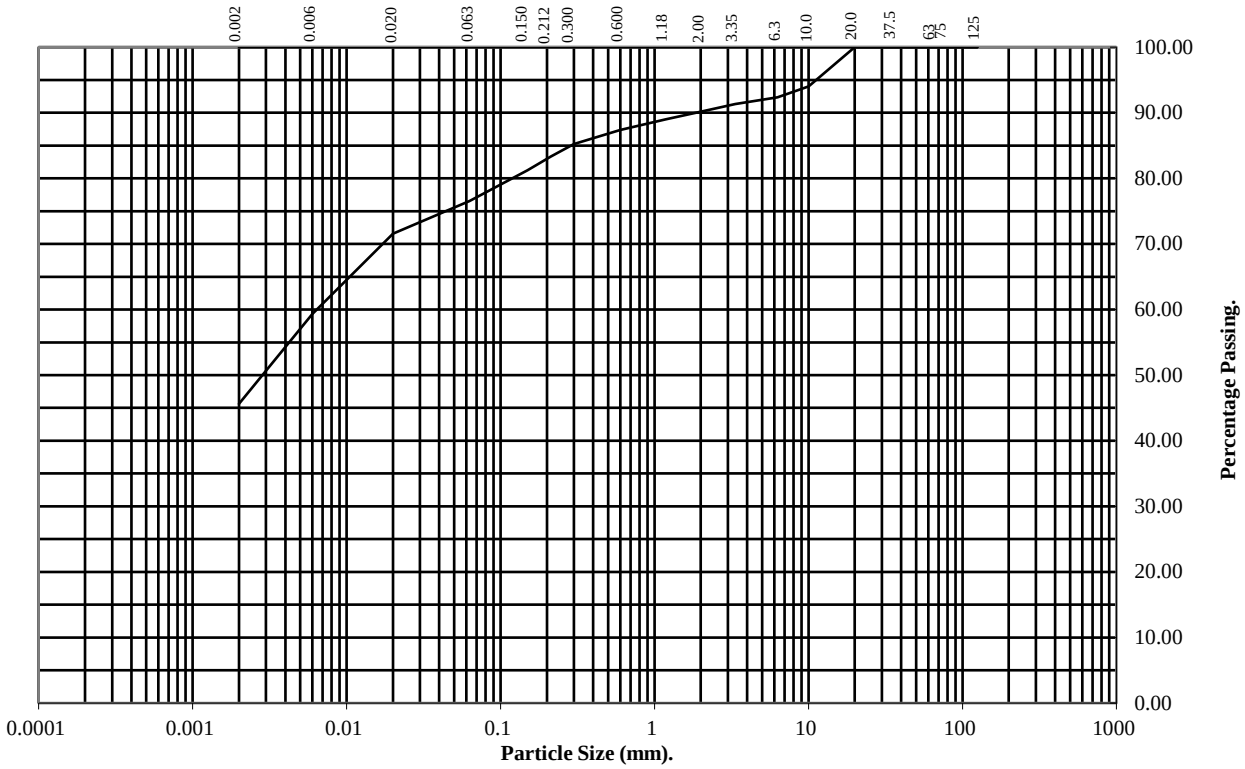
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP02**	**Top Depth (m):**	**1.50**
Sample Number:	**14**	**Base Depth(m):**	**2.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	94
6.3	92
3.35	91
2	90
1.18	89
0.6	87
0.3	85
0.212	83
0.15	81
0.063	77

Particle Diameter	Percentage Passing
0.02	72
0.006	59
0.002	46

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	13
Silt	31
Clay	46

Remarks:

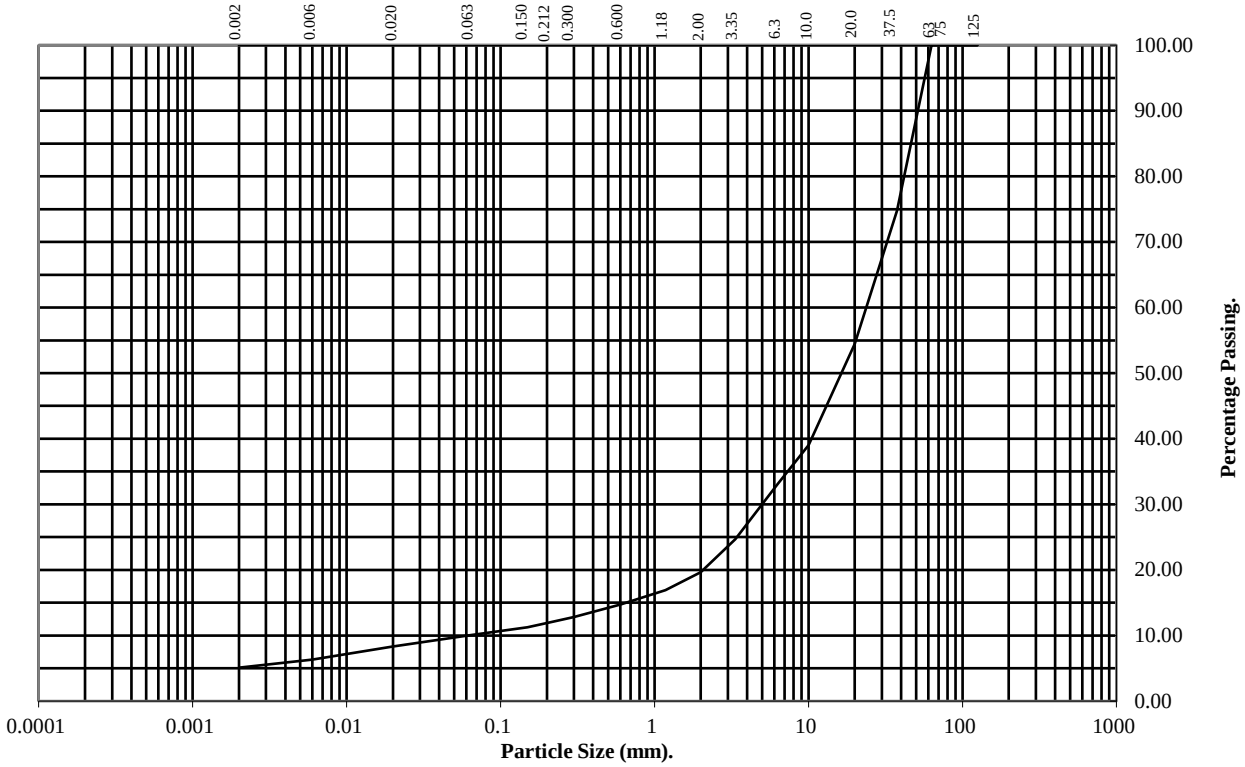
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP02**	**Top Depth (m):**	**10.50**
Sample Number:	**54**	**Base Depth(m):**	**10.95**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	75
20	54
10	39
6.3	33
3.35	25
2	20
1.18	17
0.6	15
0.3	13
0.212	12
0.15	11
0.063	10

Particle Diameter	Percentage Passing
0.02	8
0.006	6
0.002	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	80
Sand	10
Silt	5
Clay	5

Remarks:

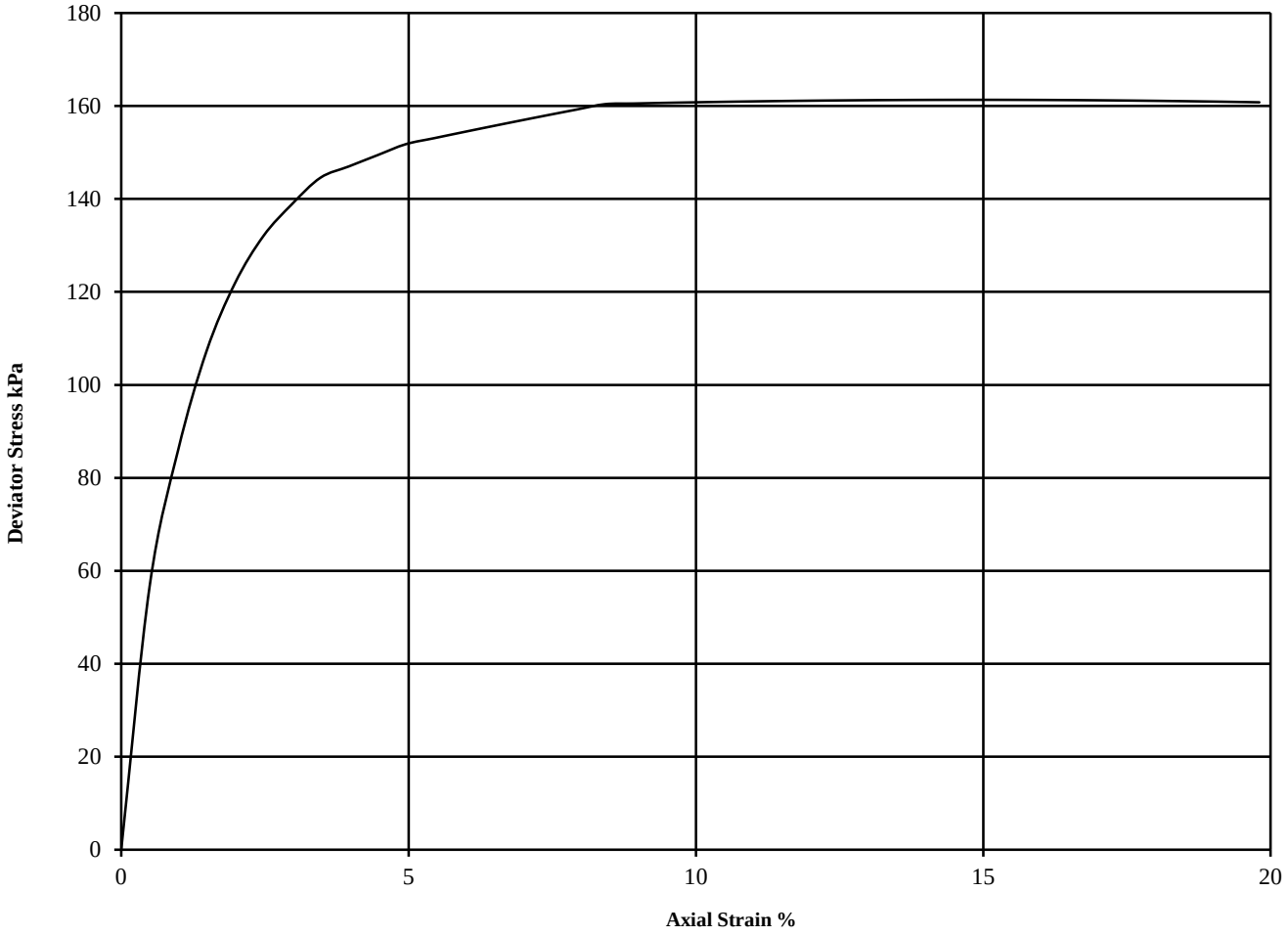
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP02**	**Top Depth (m):**	**1.50**
Sample Number:	**12**	**Base Depth (m):**	**1.95**
Sample Type	**UT**		



Diameter (mm):		102	Height (mm):		206	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	24	2.02	1.63	30	161	81	14.9	Plastic	See summary of soil descriptions

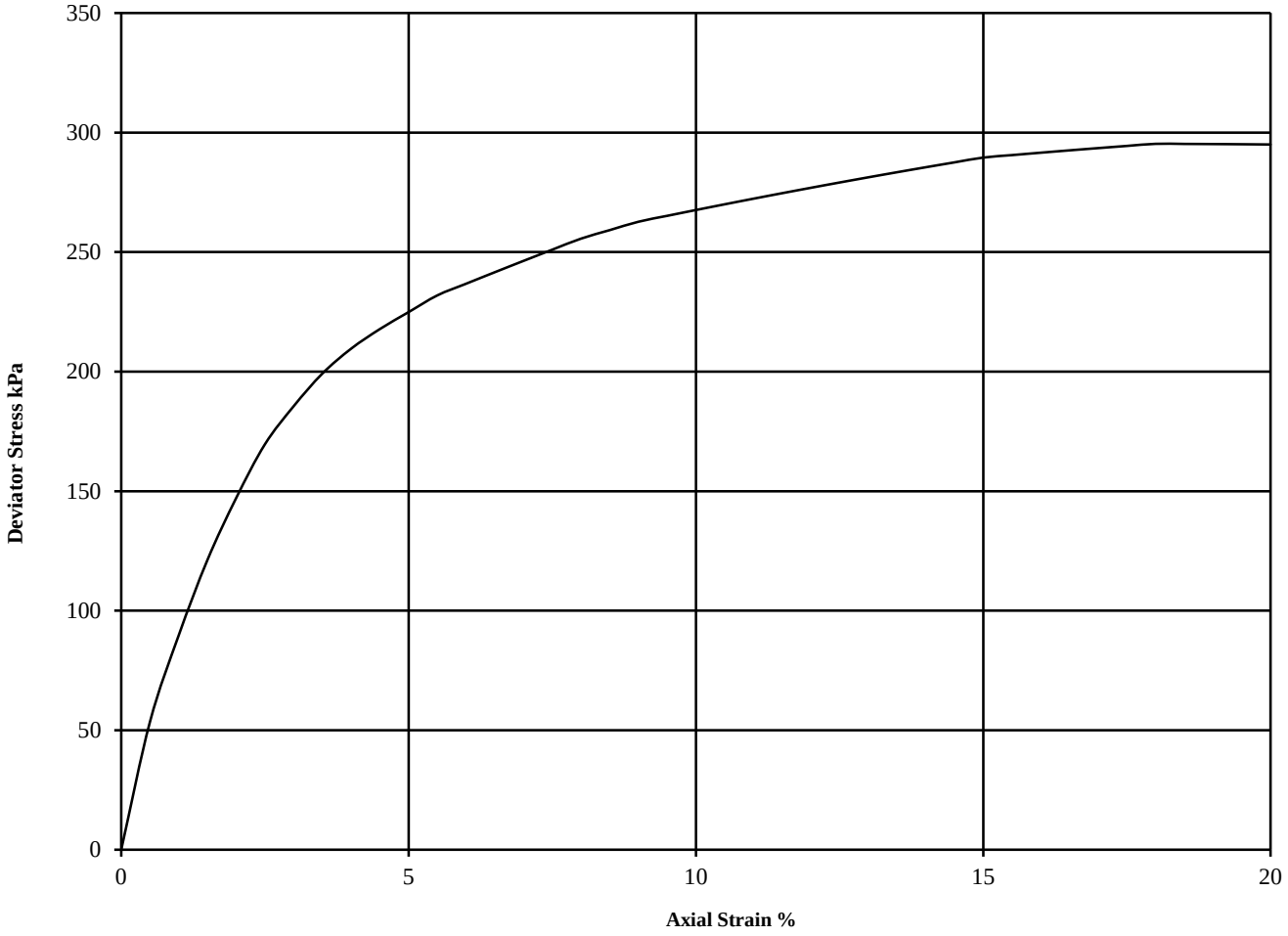
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP02**	**Top Depth (m):**	**3.50**
Sample Number:	**20**	**Base Depth (m):**	**3.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		206	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	18	2.13	1.80	70	295	148	18.0	Plastic	See summary of soil descriptions

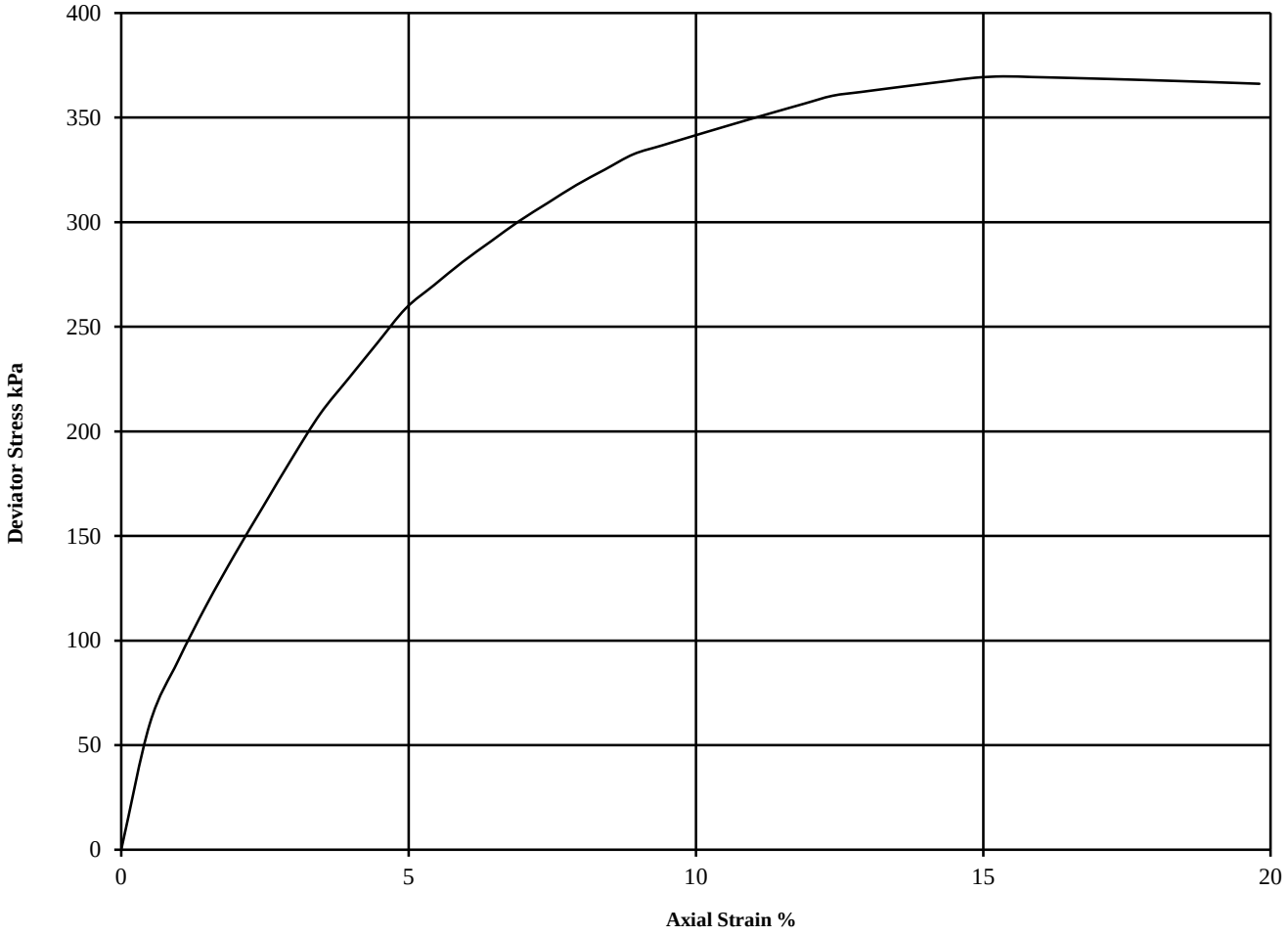
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP02**	**Top Depth (m):**	**5.50**
Sample Number:	**31**	**Base Depth (m):**	**5.95**
Sample Type	**UT**		



Diameter (mm):		102	Height (mm):		206	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	17	2.08	1.78	110	370	185	15.3	Plastic	See summary of soil descriptions

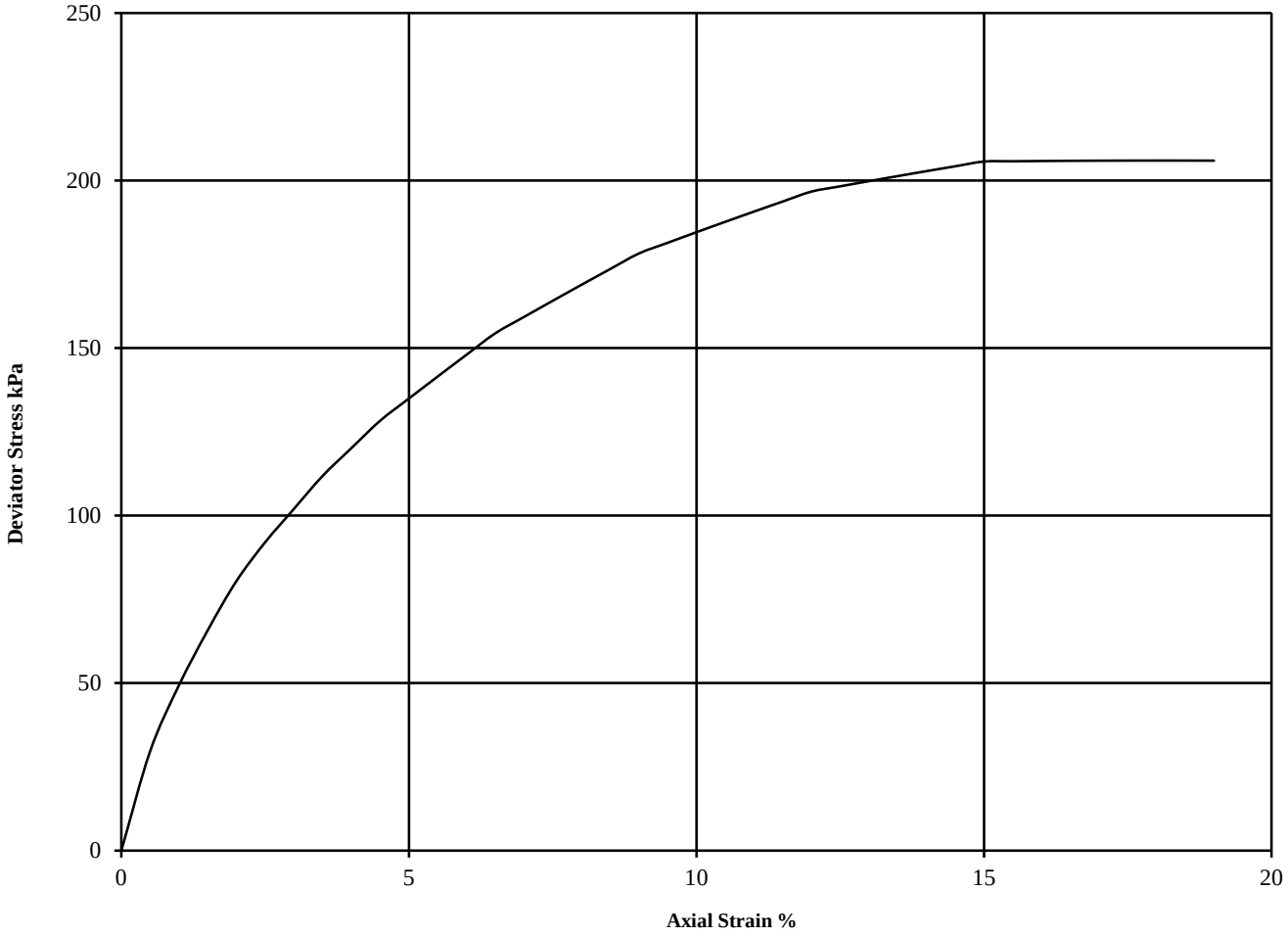
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP02**	**Top Depth (m):**	**9.50**
Sample Number:	**49**	**Base Depth (m):**	**9.95**
Sample Type	**UT**		



Diameter (mm):		38	Height (mm):		76	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.73
1	20	2.11	1.76	190	206	103	18.0	Plastic	See summary of soil descriptions

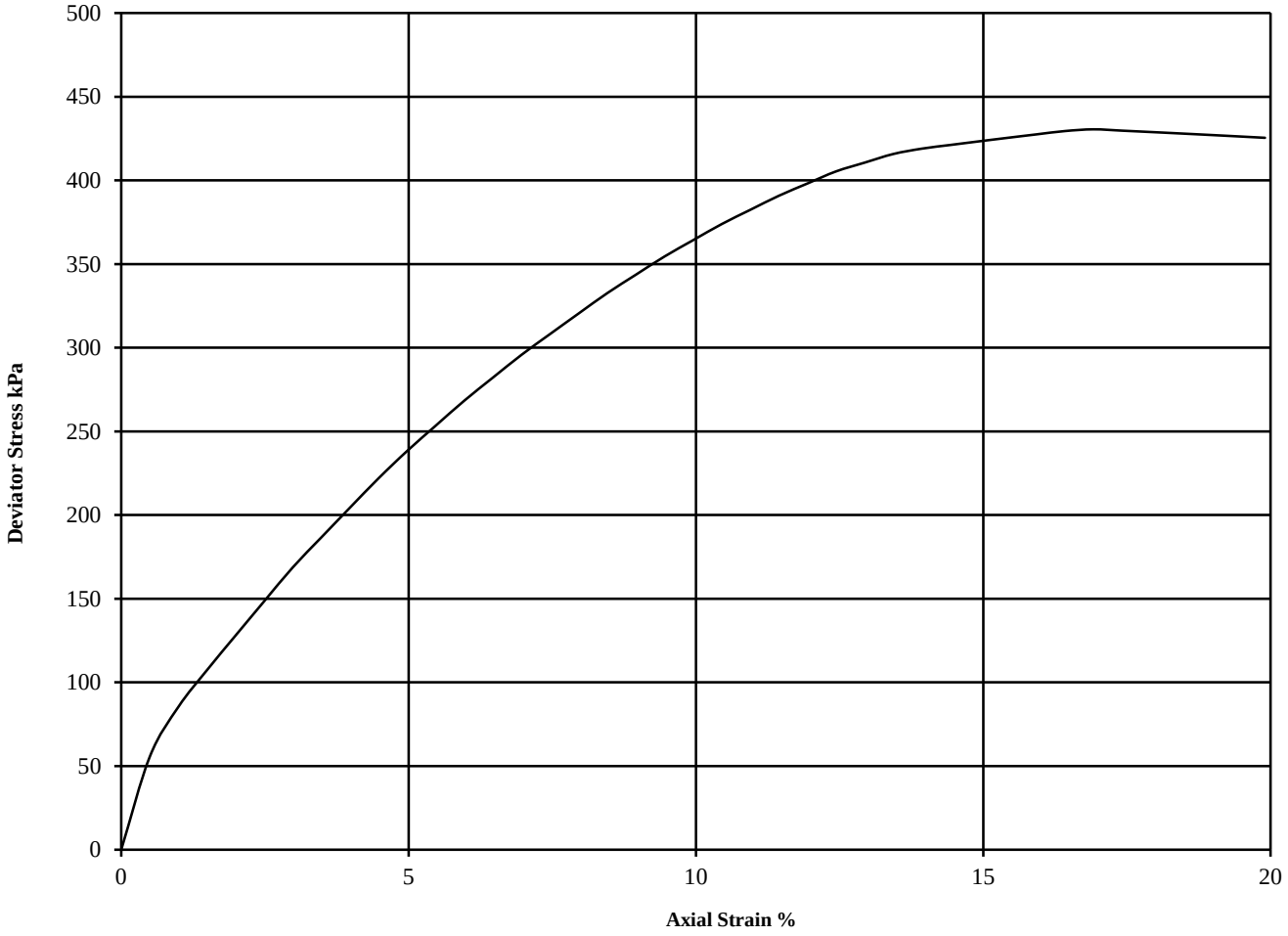
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP02**	**Top Depth (m):**	**12.50**
Sample Number:	**60**	**Base Depth (m):**	**12.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	19	2.06	1.73	220	430	215	16.9	Plastic	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/4955 **Client Ref:** D2027-22

LABORATORY REPORT

4043

Contract Number: PSL22/5218

Report Date: 02 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 10/8/2022
Date Commenced: 10/8/2022
Date Completed: 2/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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Checked and Approved Signatories:

A Watkins (Director)
[redacted]

R Berriman (Quality Manager)

S Royle (Laboratory Manager)

L Knight (Assistant Laboratory Manager)

S Eyre (Senior Technician)

T Watkins (Senior Technician)

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[redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP01	7	D	1.00		Brown mottled grey gravelly very sandy CLAY.
CP01	12	D	2.00		Brown gravelly very sandy CLAY.
CP01	13	UT	2.50	2.95	Brown gravelly sandy CLAY.
CP01	16	D	3.50		Brown mottled grey gravelly sandy CLAY.
CP01	19	UT	4.50	4.95	Brown mottled grey gravelly sandy CLAY.
CP01	20	D	5.00		Brown mottled grey gravelly sandy CLAY.
CP01	26	UT	6.50	6.95	Very stiff brown mottled grey gravelly sandy CLAY.
CP01	27	D	7.00		Brown mottled grey gravelly sandy CLAY.
CP01	30	B	7.50	8.00	Brown mottled grey gravelly sandy CLAY.
CP01	32	UT	8.50	8.95	Brown mottled grey gravelly sandy CLAY.
CP01	33	D	9.00		Brown mottled grey gravelly very sandy CLAY.
CP01	41	B	11.50	12.00	Grey sandy clayey GRAVEL.
CP01	44	D	13.00		Grey very gravelly very sandy CLAY.
CP01	45	UT	13.50	13.95	Stiff brown mottled grey gravelly sandy CLAY.
CP01	51	B	16.50	17.00	Brown mottled grey gravelly sandy CLAY.
CP01	52	D	17.00		Brown mottled grey gravelly sandy CLAY.
CP01	54	D	18.00		Brown mottled grey gravelly sandy CLAY.
CP08	6	D	0.50		Brown very gravelly very sandy CLAY.
CP08	13	D	2.00		Brown gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP08	14	UT	2.50	2.95	Brown gravelly sandy CLAY.
CP08	15	D	3.00		Brown mottled grey gravelly sandy CLAY.
CP08	20	UT	4.50	4.95	Brown mottled grey gravelly sandy CLAY.
CP08	21	D	5.00		Brown gravelly sandy CLAY.
CP08	27	D	7.00		Brown mottled grey gravelly sandy CLAY.
CP08	28	B	7.00	7.50	Brown mottled grey gravelly sandy CLAY.
CP08	31	D	8.50		Brown gravelly sandy CLAY.
CP08	34	D	9.50		Brown gravelly sandy CLAY.
CP08	36	UT	10.50	10.95	Brown mottled grey gravelly sandy CLAY.
CP08	41	D	12.00		Brown mottled grey gravelly sandy CLAY.
CP08	47	UT	14.50	14.95	Hard brown mottled grey gravelly sandy CLAY.
CP08	50	D	15.50		Brown mottled grey gravelly very sandy CLAY.
CP08	53	D	17.00		Grey gravelly very sandy CLAY.
CP08	60	D	19.50		Brown gravelly very sandy CLAY.
DS19	6	D	0.50		Brown mottled grey gravelly sandy CLAY.
DS19	13	D	2.00		Brown mottled grey gravelly sandy CLAY.
DS19	25	D	5.00		Brown very gravelly sandy CLAY.
DS20	3	B	0.10	0.30	MADE GROUND brown mottled grey very gravelly sandy CLAY with many cobbles.
DS20	13	D	2.00		Brown very gravelly very sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS20	24	D	5.00		Brown very gravelly very sandy CLAY.
TP12	7	D	1.00		Brown very gravelly very sandy CLAY.
TP12	15	D	2.50		Brown gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP01	7	D	1.00		12							
CP01	12	D	2.00		18			34	16	18	77	Low Plasticity CL
CP01	13	UT	2.50	2.95	18		2.64					
CP01	16	D	3.50		16							
CP01	20	D	5.00		15			39	18	21	85	Intermediate Plasticity CI
CP01	27	D	7.00		17							
CP01	32	UT	8.50	8.95	16		2.65					
CP01	33	D	9.00		16			32	17	15	83	Low Plasticity CL
CP01	44	D	13.00		19			30	16	14	70	Low Plasticity CL
CP01	52	D	17.00		19			42	20	22	77	Intermediate Plasticity CI
CP01	54	D	18.00		17							
CP08	6	D	0.50		10			37	18	19	63	Intermediate Plasticity CI
CP08	13	D	2.00		16			39	19	20	83	Intermediate Plasticity CI
CP08	14	UT	2.50	2.95	17		2.65					
CP08	15	D	3.00		18							
CP08	21	D	5.00		17			45	21	24	85	Intermediate Plasticity CI
CP08	27	D	7.00		15			43	20	23	81	Intermediate Plasticity CI
CP08	31	D	8.50		15							
CP08	34	D	9.50		17							

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

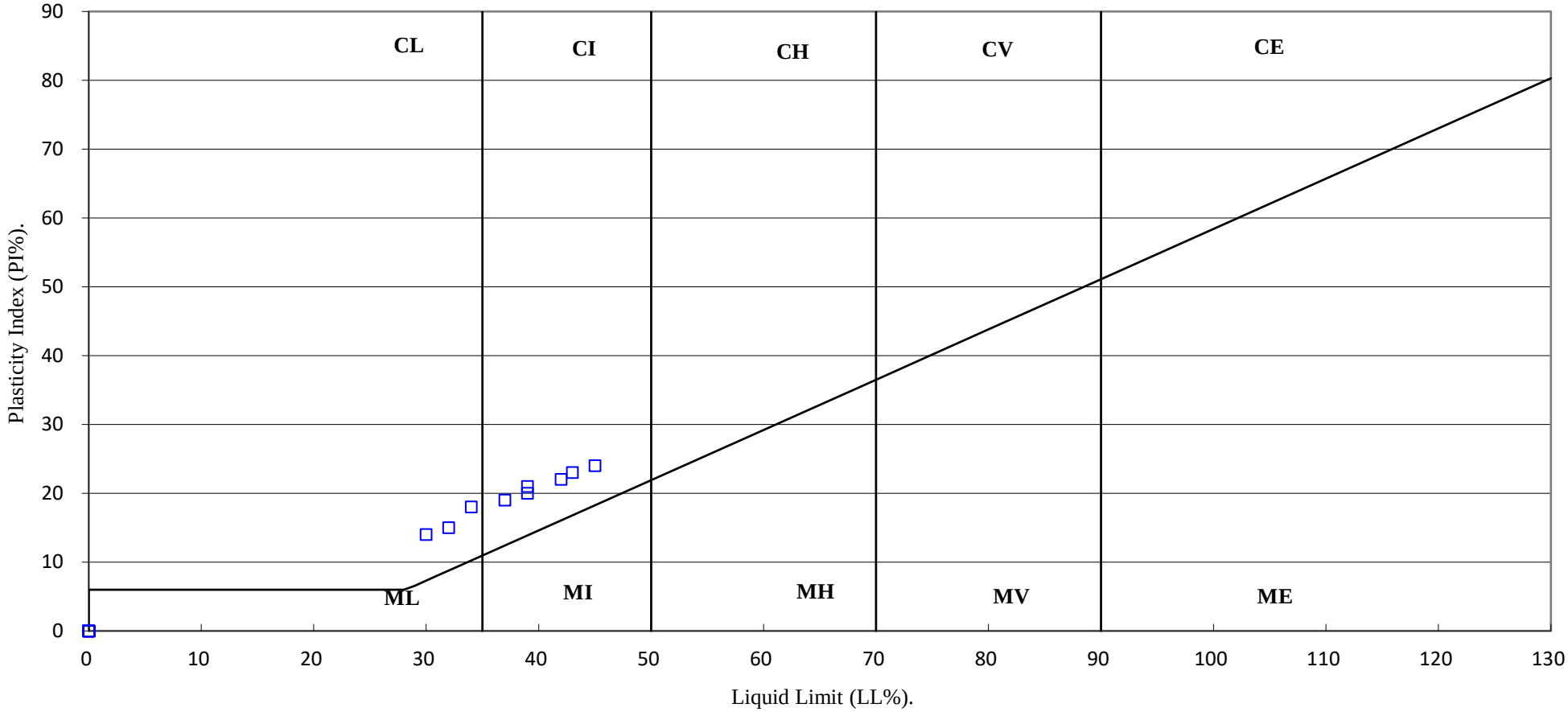
Contract No:

PSL22/5218

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP08	36	UT	10.50	10.95	17		2.63					
CP08	41	D	12.00		16			37	18	19	78	Intermediate Plasticity CI
CP08	50	D	15.50		13							
CP08	53	D	17.00		14			34	16	18	81	Low Plasticity CL
CP08	60	D	19.50		18							
DS19	6	D	0.50		15							
DS19	13	D	2.00		16			43	20	23	87	Intermediate Plasticity CI
DS19	25	D	5.00		16			39	18	21	66	Intermediate Plasticity CI
DS20	13	D	2.00		14			35	18	17	64	Intermediate Plasticity CI
DS20	24	D	5.00		12			35	17	18	61	Intermediate Plasticity CI
TP12	7	D	1.00		16			32	15	17	63	Low Plasticity CL
TP12	15	D	2.50		21							

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

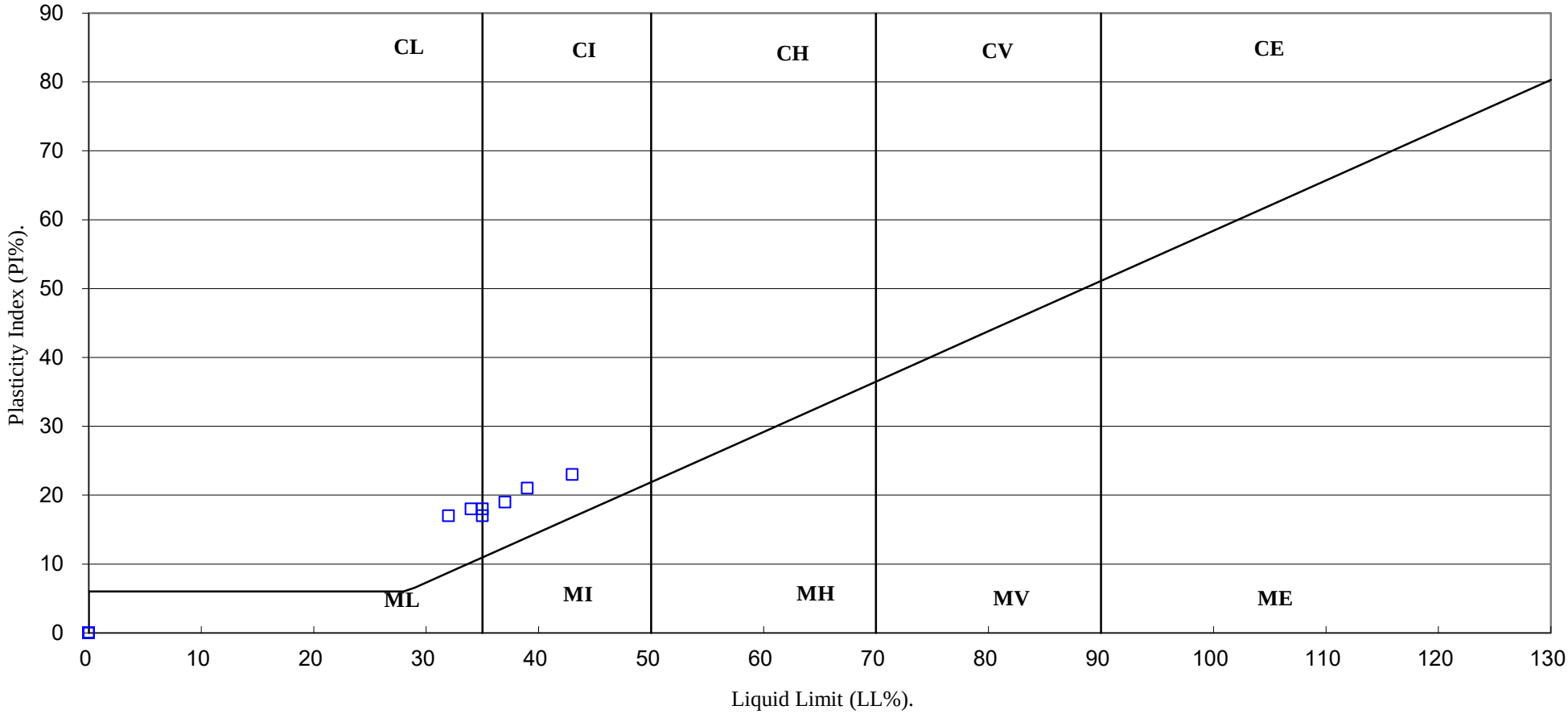
Contract No:

PSL22/5218

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



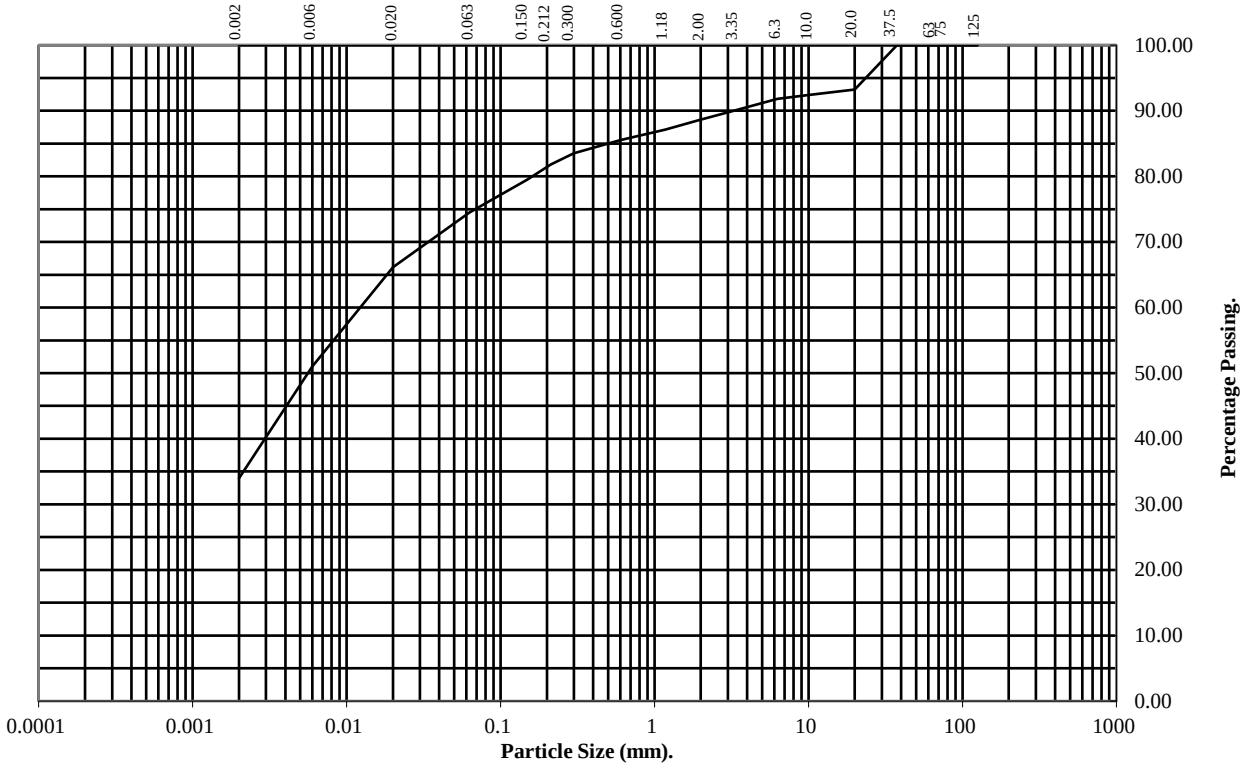
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP01**	**Top Depth (m):**	**7.50**
Sample Number:	**30**	**Base Depth(m):**	**8.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	92
6.3	92
3.35	90
2	89
1.18	87
0.6	86
0.3	84
0.212	82
0.15	80
0.063	75

Particle Diameter	Percentage Passing
0.02	66
0.006	51
0.002	34

Soil Fraction	Total Percentage
Cobbles	0
Gravel	11
Sand	14
Silt	41
Clay	34

Remarks:

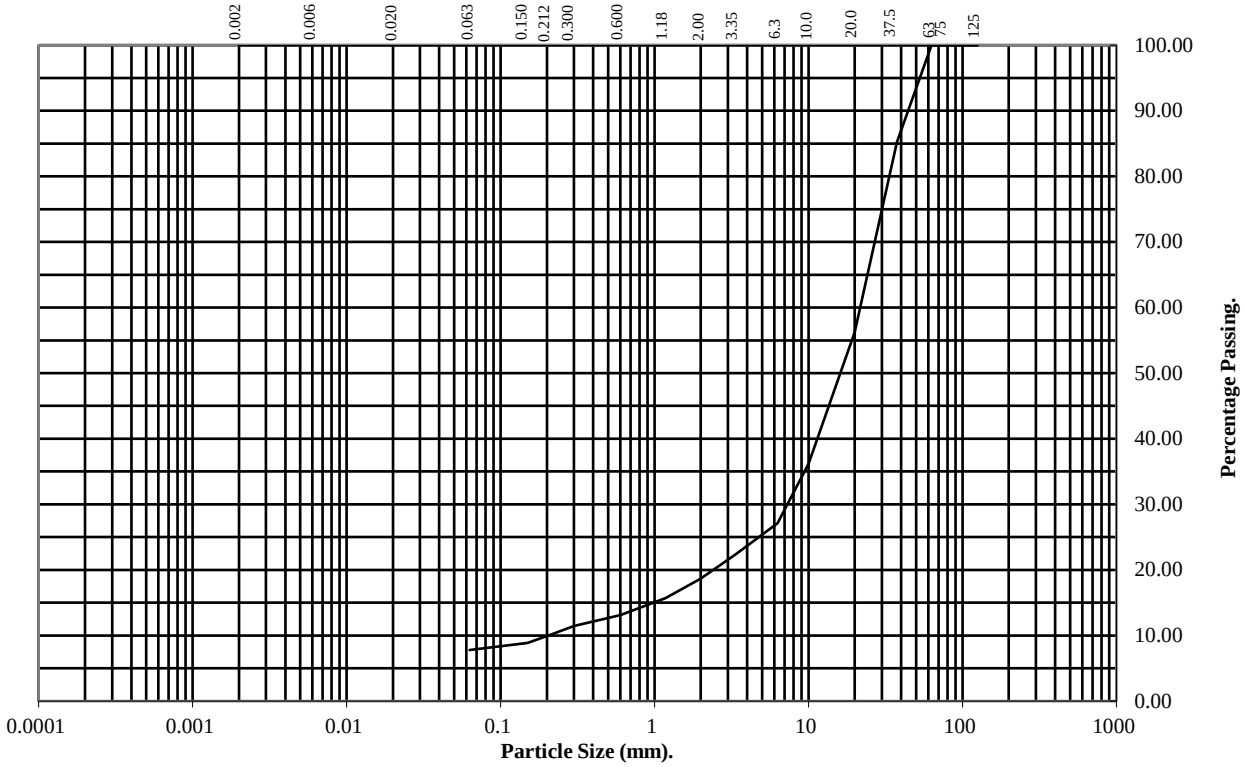
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP01**	**Top Depth (m):**	**11.50**
Sample Number:	**41**	**Base Depth(m):**	**12.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	85
20	56
10	36
6.3	27
3.35	22
2	19
1.18	16
0.6	13
0.3	11
0.212	10
0.15	9
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	81
Sand	11
Silt/Clay	8

Remarks:

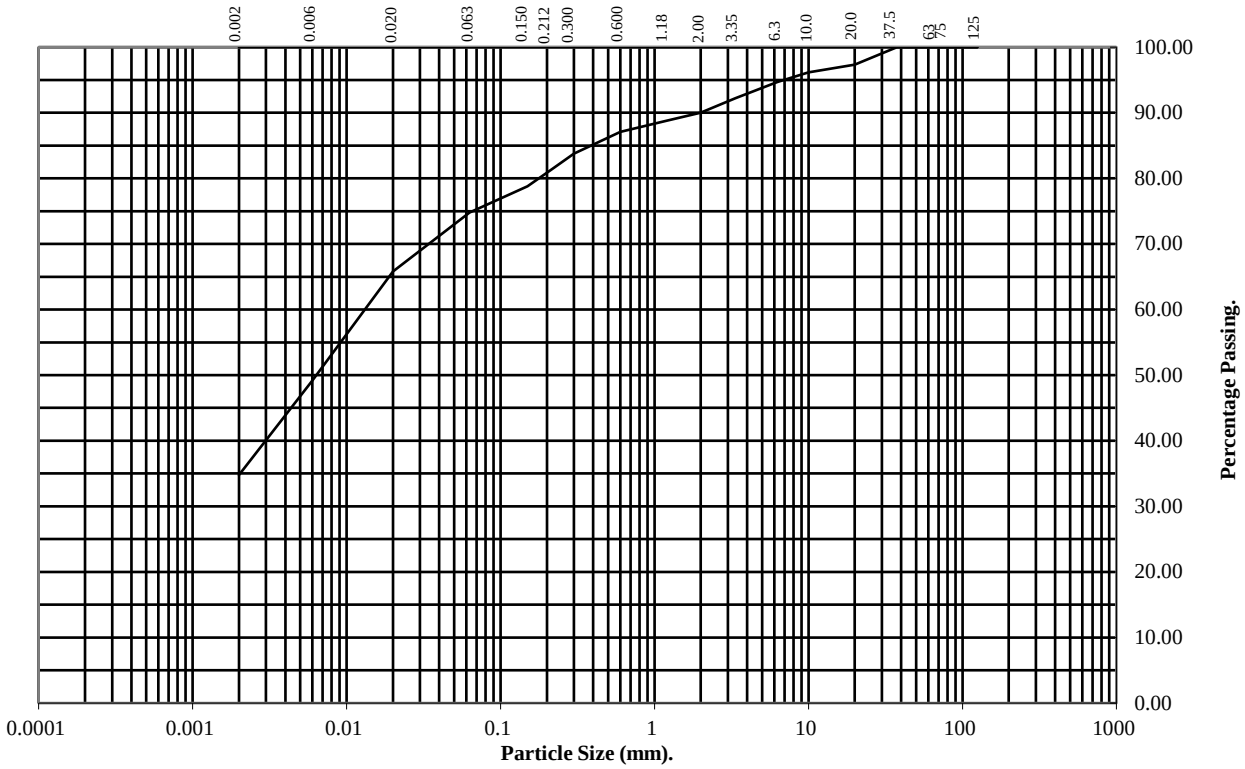
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP01**	**Top Depth (m):**	**16.50**
Sample Number:	**51**	**Base Depth(m):**	**17.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	96
6.3	95
3.35	92
2	90
1.18	89
0.6	87
0.3	84
0.212	81
0.15	79
0.063	75

Particle Diameter	Percentage Passing
0.02	66
0.006	49
0.002	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	15
Silt	40
Clay	35

Remarks:

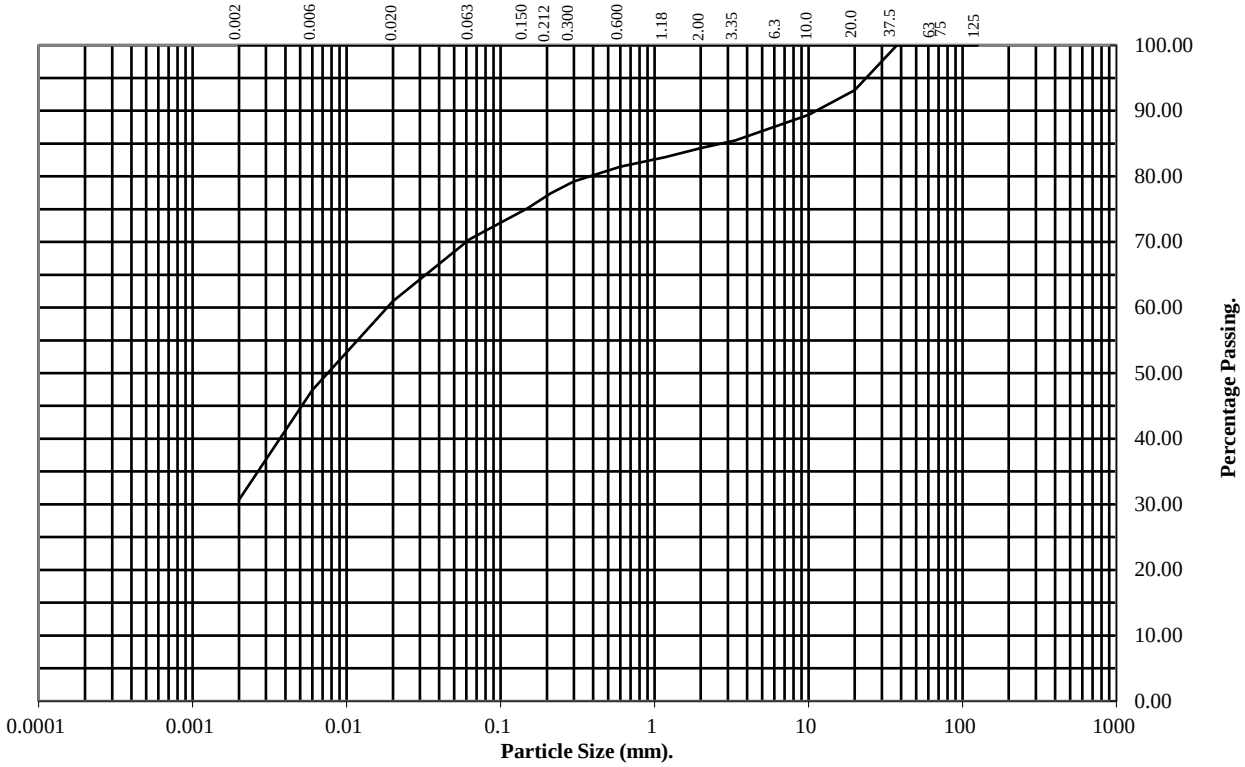
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP08**	**Top Depth (m):**	**7.00**
Sample Number:	**28**	**Base Depth(m):**	**7.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	93
10	89
6.3	88
3.35	85
2	84
1.18	83
0.6	81
0.3	79
0.212	77
0.15	75
0.063	70

Particle Diameter	Percentage Passing
0.02	61
0.006	47
0.002	31

Soil Fraction	Total Percentage
Cobbles	0
Gravel	16
Sand	14
Silt	39
Clay	31

Remarks:

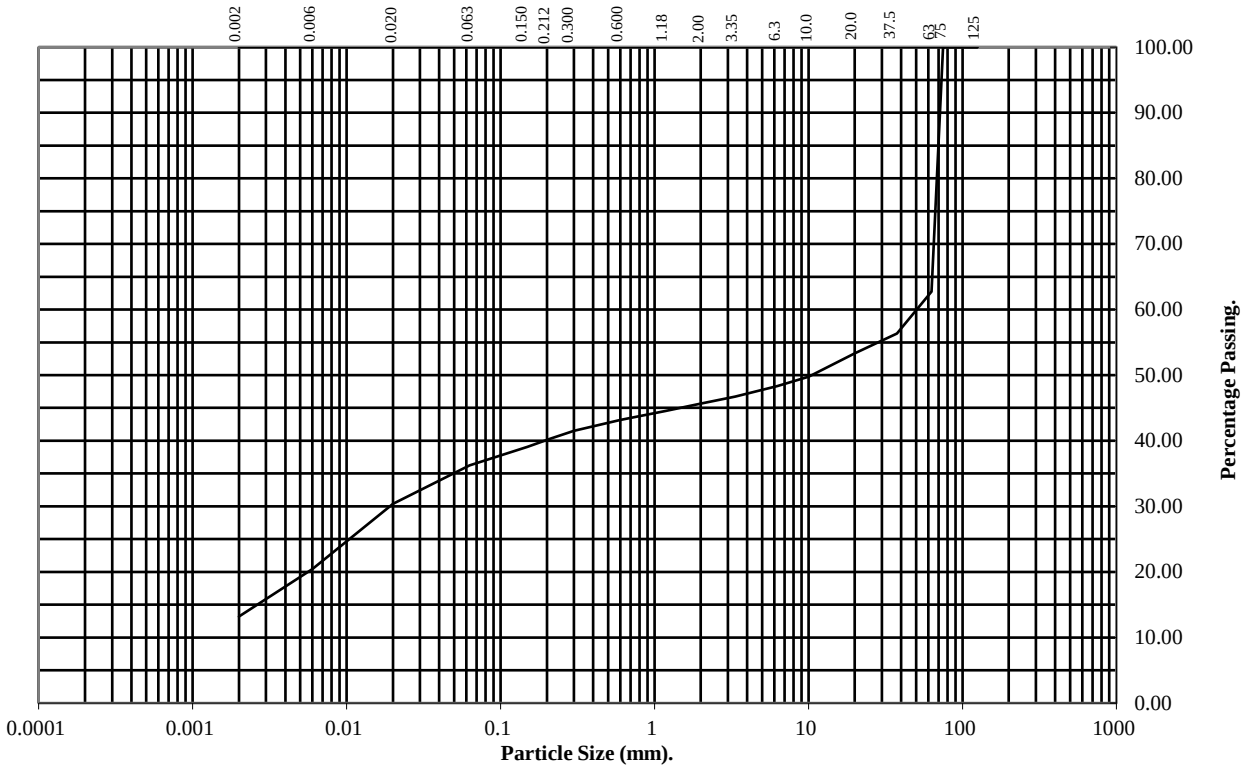
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**DS20**	**Top Depth (m):**	**0.10**
Sample Number:	**3**	**Base Depth(m):**	**0.30**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	63
37.5	56
20	53
10	50
6.3	48
3.35	47
2	46
1.18	45
0.6	43
0.3	41
0.212	40
0.15	39
0.063	36

Particle Diameter	Percentage Passing
0.02	30
0.006	20
0.002	13

Soil Fraction	Total Percentage
Cobbles	37
Gravel	17
Sand	10
Silt	23
Clay	13

Remarks:

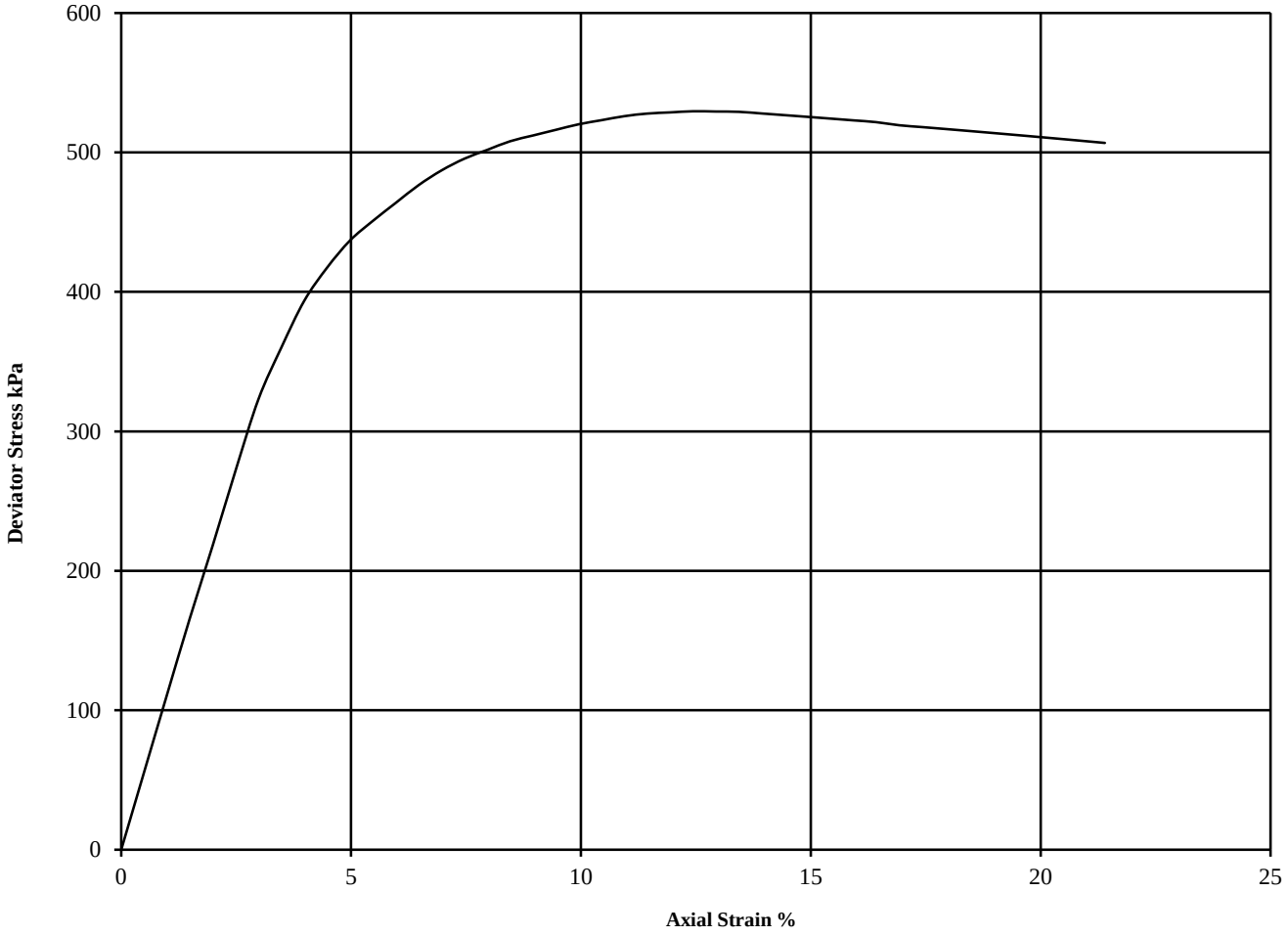
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP01**	**Top Depth (m):**	**6.50**
Sample Number:	**26**	**Base Depth (m):**	**6.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	16	2.16	1.86	130	530	265	12.4	Intermediate	See summary of soil descriptions

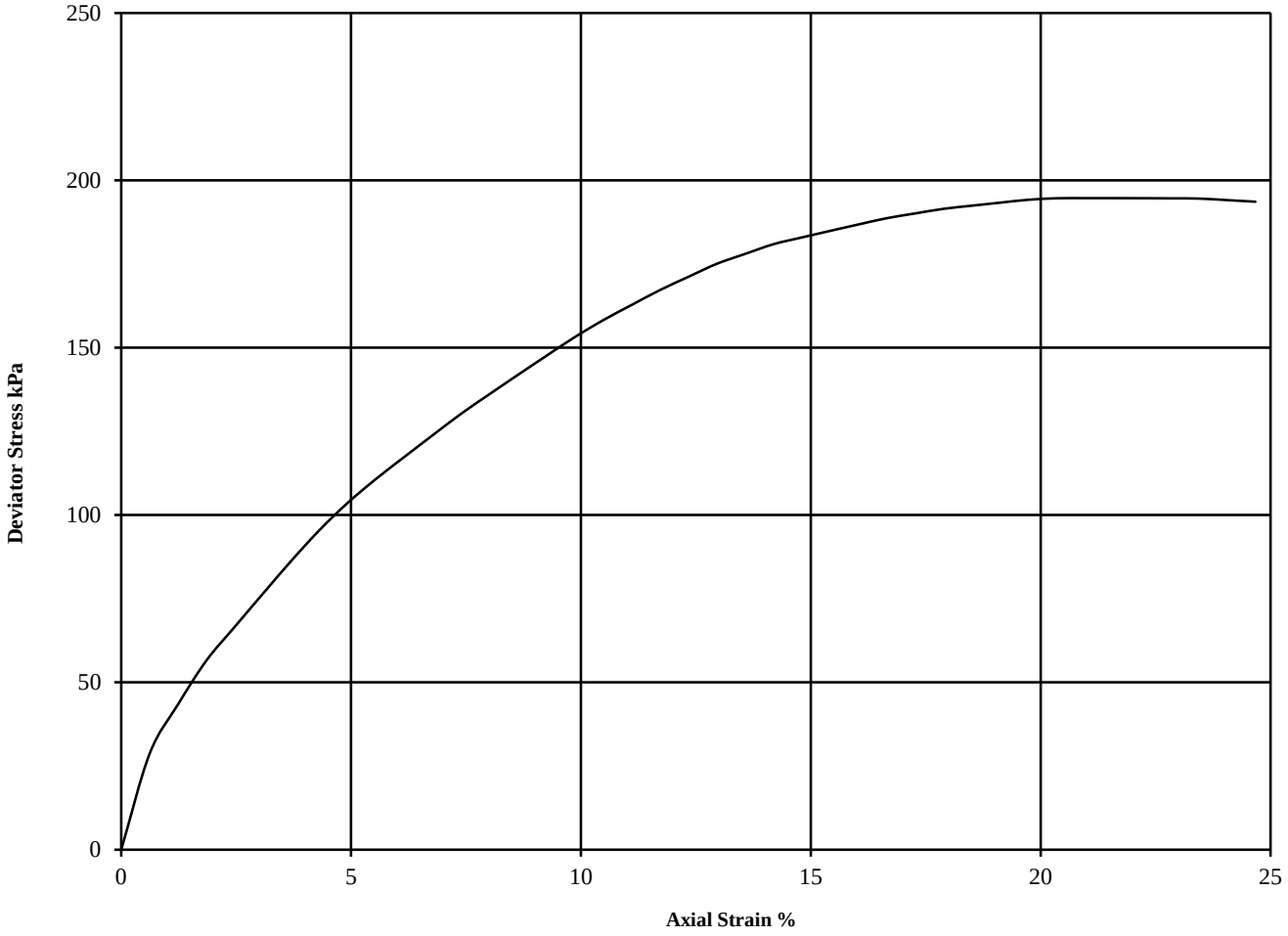
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP01**	**Top Depth (m):**	**13.50**
Sample Number:	**45**	**Base Depth (m):**	**13.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		167	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	20	2.12	1.77	210	195	97	21.6	Plastic	See summary of soil descriptions

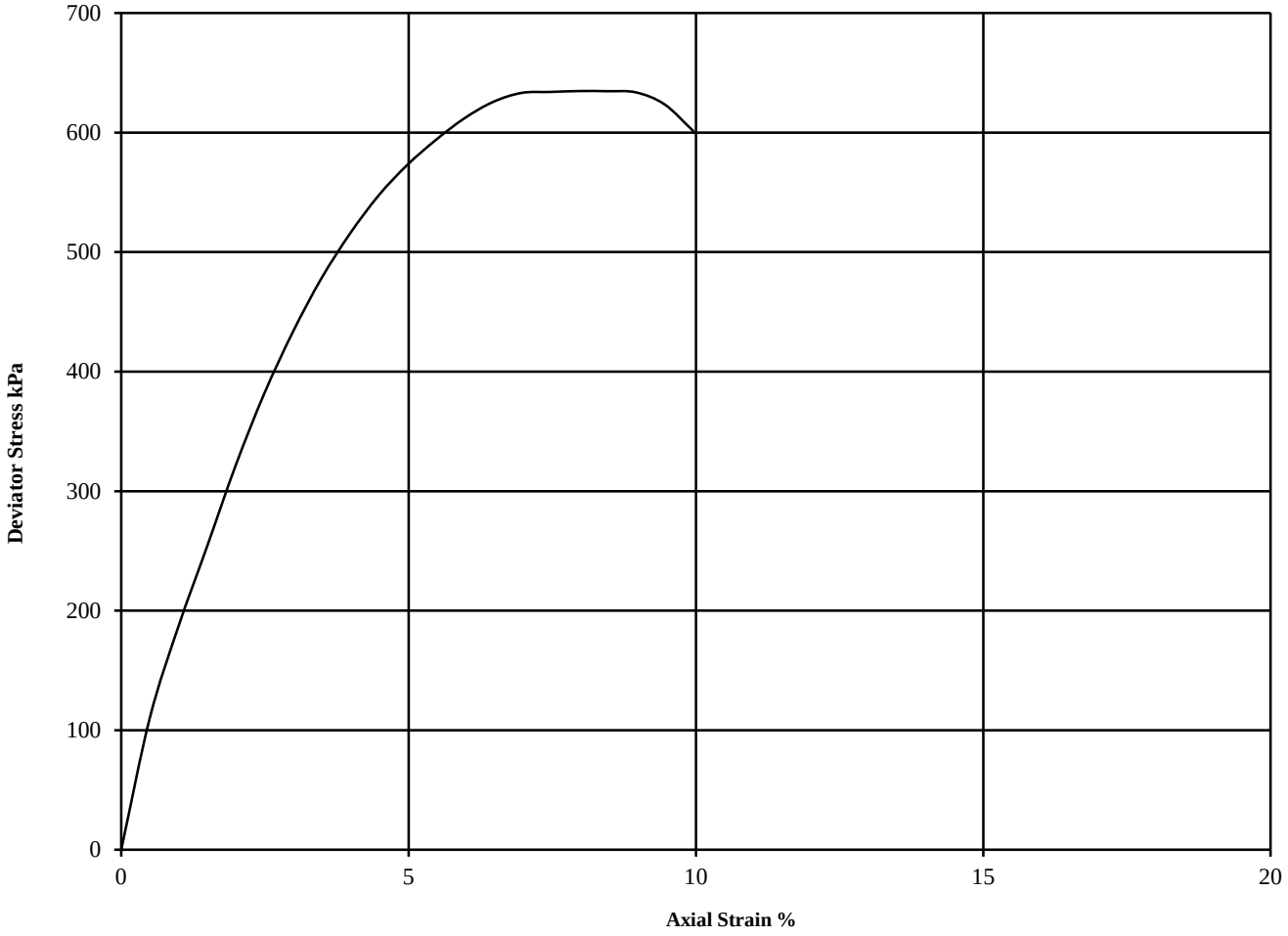
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP08**	**Top Depth (m):**	**14.50**
Sample Number:	**47**	**Base Depth (m):**	**14.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	16	2.19	1.90	225	635	317	8.0	Brittle	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

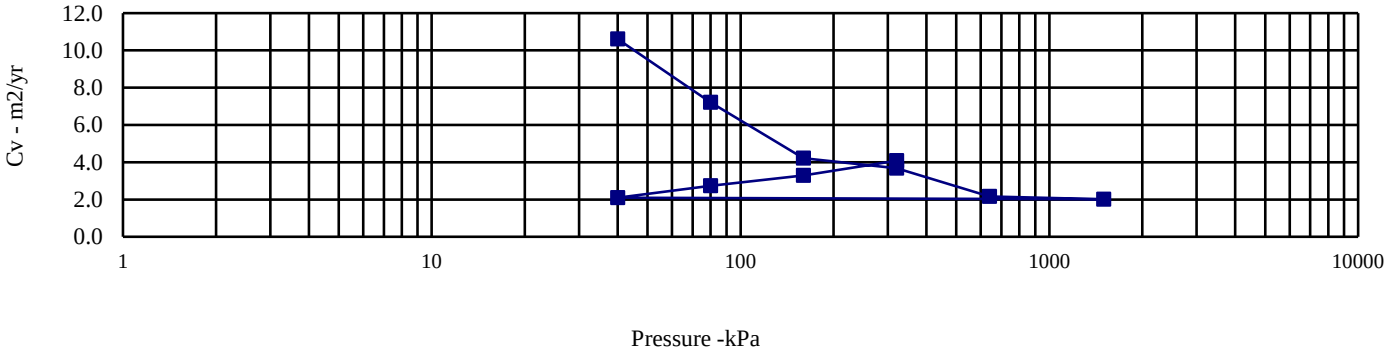
BS 1377: Part 5: 1990: Clause 3

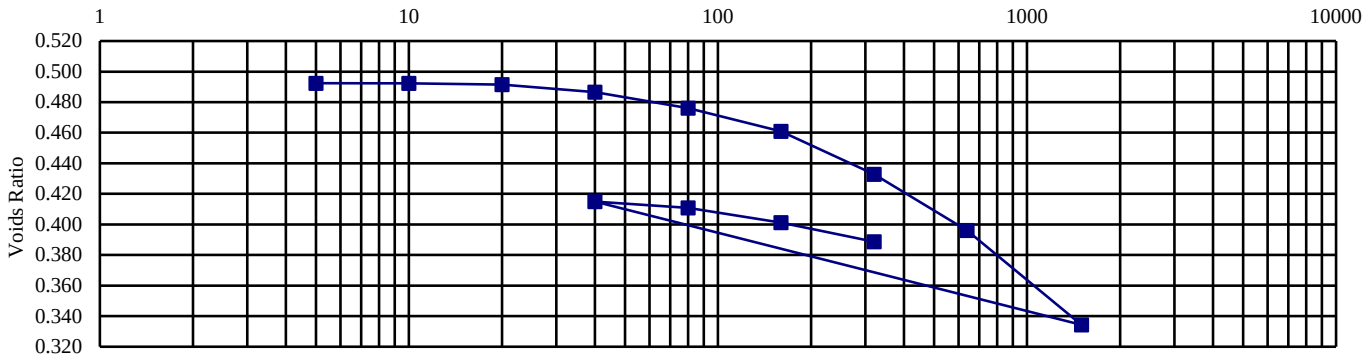
Hole Number: **CP01** **Top Depth (m):** **2.50**

Sample Number: **13** **Base Depth (m) :** **2.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.09	0	5	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.77	5	10	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.492	10	20	Swelling	Swelling	Nominal temperature	
Degree of saturation:	97.8	20	40	0.170	10.608	during test ' C:	20
Height (mm):	20.032	40	80	0.174	7.210	Remarks:	
Diameter (mm)	75.06	80	160	0.129	4.222	See summary of soil descriptions	
Particle Density (Mg/m3): Actual	2.64	160	320	0.120	3.676		
		320	640	0.080	2.170		
		640	1500	0.052	2.013		
		1500	40	0.041	2.096		
		40	80	0.075	2.728		
		80	160	0.085	3.288		
		160	320	0.055	4.087		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/5218

Client Ref: D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

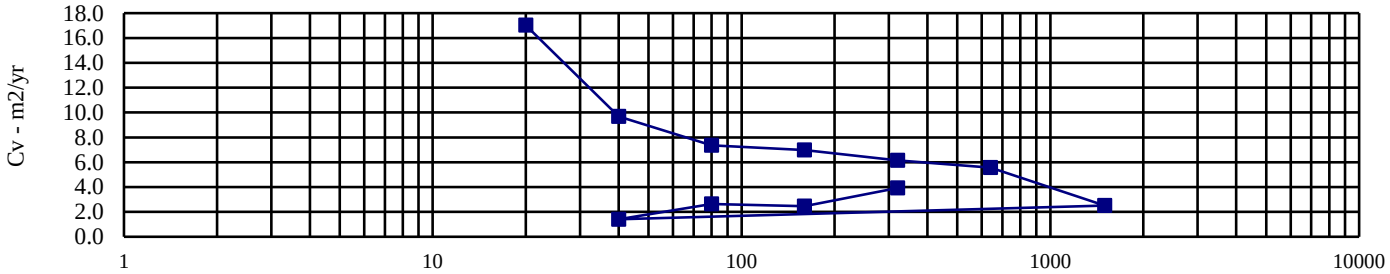
BS 1377: Part 5: 1990: Clause 3

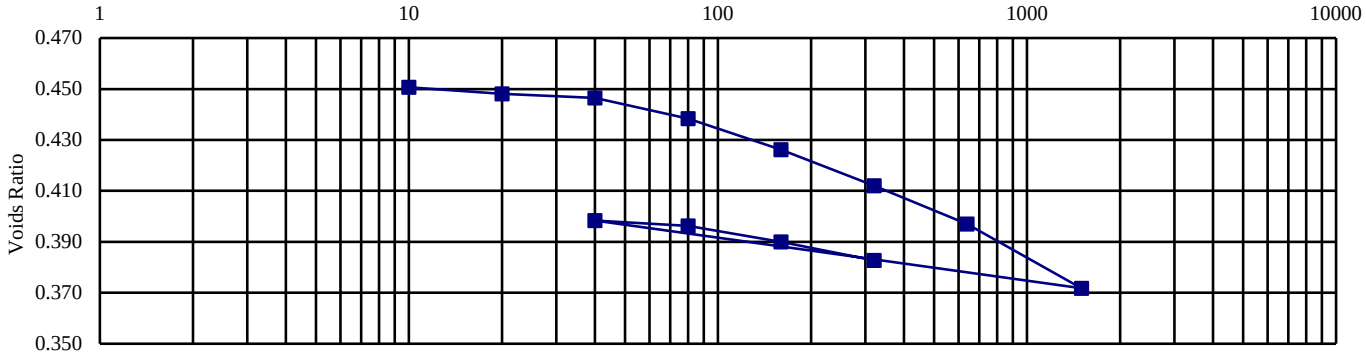
Hole Number: **CP01** **Top Depth (m):** **8.50**

Sample Number: **32** **Base Depth (m) :** **8.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	16						
Bulk Density (Mg/m3):	2.12	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.83	10	20	0.180	17.026	determine CV:	T90
Voids Ratio:	0.452	20	40	0.055	9.683	Nominal temperature	
Degree of saturation:	95.3	40	80	0.140	7.361	during test ' C:	20
Height (mm):	20.024	80	160	0.105	6.975	Remarks:	
Diameter (mm)	75.013	160	320	0.062	6.137	See summary of soil descriptions	
Particle Density (Mg/m3): Actual	2.65	320	640	0.033	5.555		
		640	1500	0.021	2.523		
		1500	40	0.013	1.409		
		40	80	0.036	2.645		
		80	160	0.056	2.465		
		160	320	0.033	3.935		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5218 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: **CP08** **Top Depth (m):** **2.50**

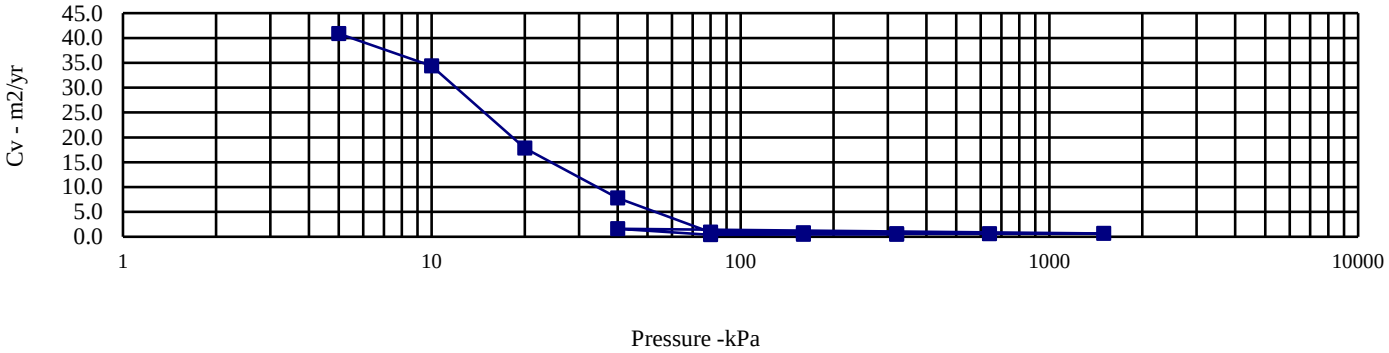
Sample Number: **14** **Base Depth (m) :** **2.95**

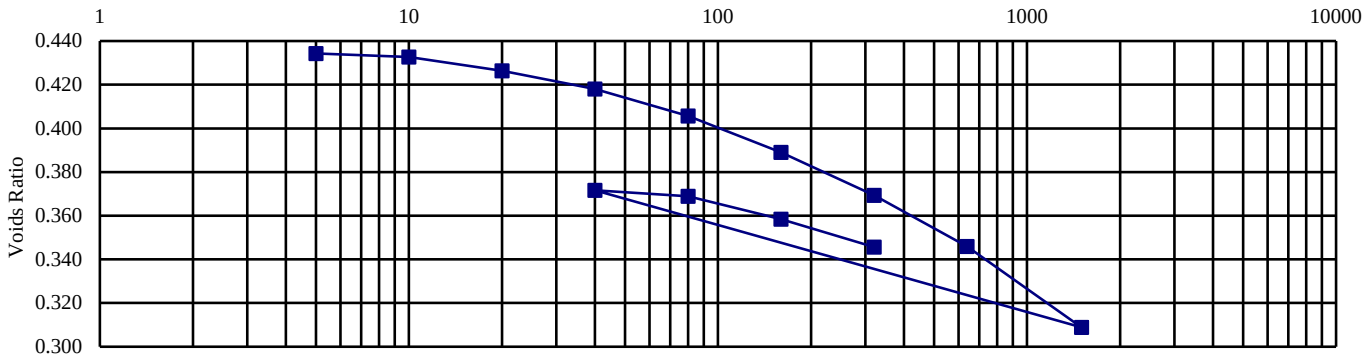
Sample Type: **UT**

Initial Conditions	
Moisture Content (%):	17
Bulk Density (Mg/m3):	2.16
Dry Density (Mg/m3):	1.85
Voids Ratio:	0.435
Degree of saturation:	103.0
Height (mm):	20.01
Diameter (mm)	75.015
Particle Density (Mg/m3): Actual	2.65

Pressure Range kPa		Mv m2/MN	Cv m2/yr
0	5	0.230	40.869
5	10	0.230	34.356
10	20	0.435	17.844
20	40	0.292	7.772
40	80	0.220	0.908
80	160	0.148	0.802
160	320	0.088	0.630
320	640	0.054	0.620
640	1500	0.032	0.675
1500	40	0.033	1.634
40	80	0.050	0.389
80	160	0.096	0.452
160	320	0.058	0.466

Specimen location within tube:	Middle
Method used to determine CV:	T90
Nominal temperature during test ' C:	20
Remarks: See summary of soil descriptions	





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5218
Client Ref:
D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

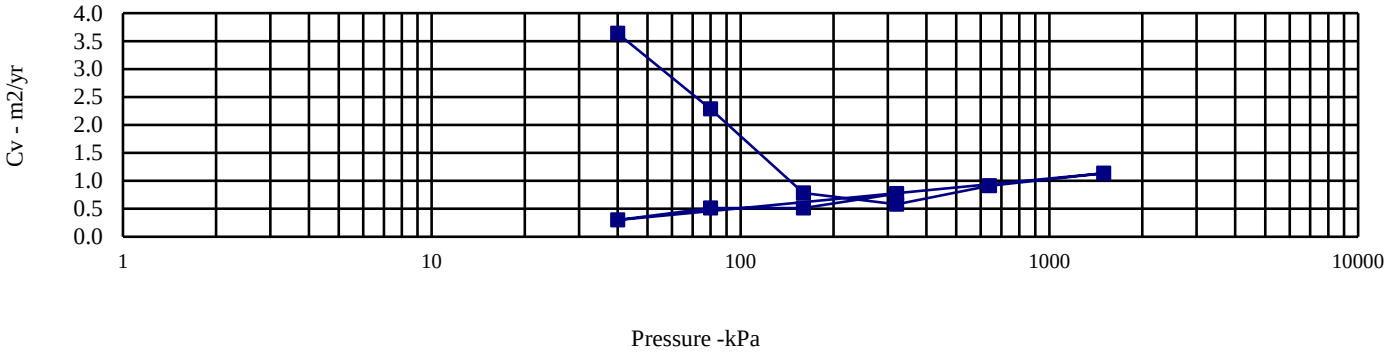
BS 1377: Part 5: 1990: Clause 3

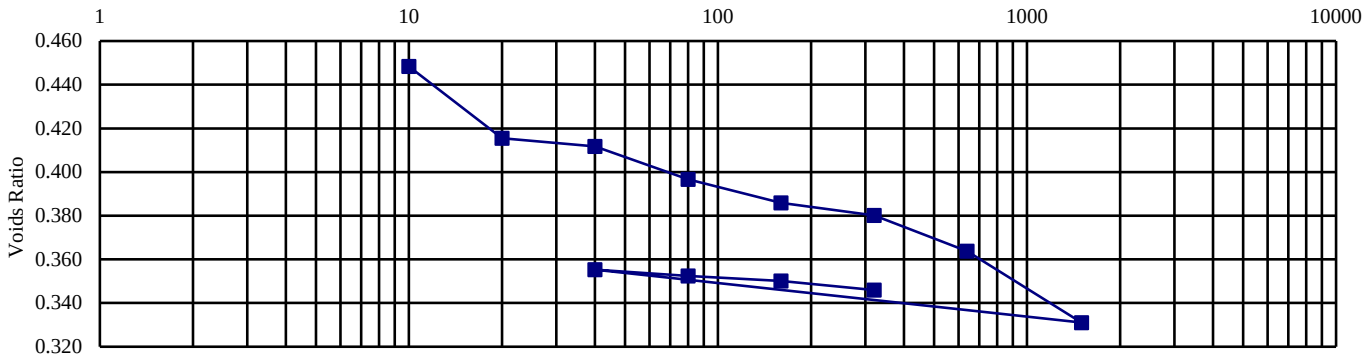
Hole Number: **CP08** **Top Depth (m):** **10.50**

Sample Number: **36** **Base Depth (m) :** **10.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	17						
Bulk Density (Mg/m3):	2.12	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.81	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.455	20	40	0.128	3.637	Nominal temperature	
Degree of saturation:	99.9	40	80	0.268	2.285	during test ' C:	20
Height (mm):	20.026	80	160	0.097	0.785	Remarks:	
Diameter (mm)	75.02	160	320	0.026	0.581	See summary of soil descriptions	
Particle Density (Mg/m3): Actual	2.63	320	640	0.037	0.913		
		640	1500	0.028	1.136		
		1500	40	0.012	0.300		
		40	80	0.054	0.516		
		80	160	0.021	0.515		
		160	320	0.019	0.774		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5218
Client Ref:
D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			4.50-4.95m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.5
	Initial Sample Weight	W_0	(gr)	3916.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.16
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	495	540	630	
Initial Back Pressure	U_{bi}	(kPa)	450	450	450	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	16			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.86			
Initial Voids Ratio	e_i	.	0.432			
Initial Degree of Saturation	S_i	(%)	100			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	16			
Final Dry Density	ρ_{df}	(Mg/m3)	1.90			
Final Voids Ratio	e_f	.	0.397			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.99	3.82	18.80	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	103.7	210.0	416.8	
Minor Stress At Failure	σ_3'	(kPa)	29.4	88.1	242.4	
Major Stress At Failure	σ_1'	(kPa)	133.1	298.1	659.2	
Principal Stress Ratio At Failure	σ_1'/σ_3'		4.529	3.384	2.719	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP01 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP01
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

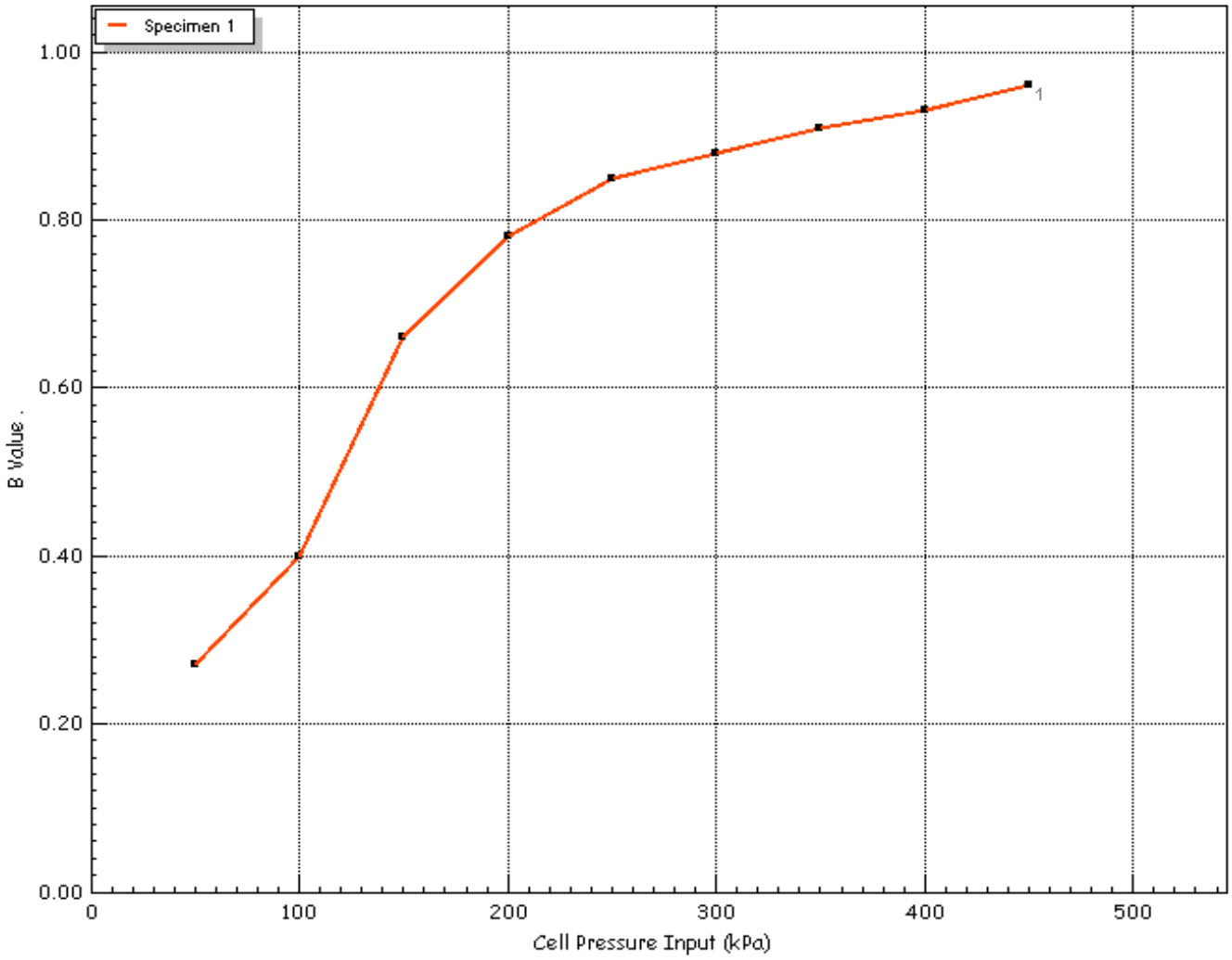
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	450
Pore Water Pressure Input	u pwp	(kPa)	439
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP01 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP01
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

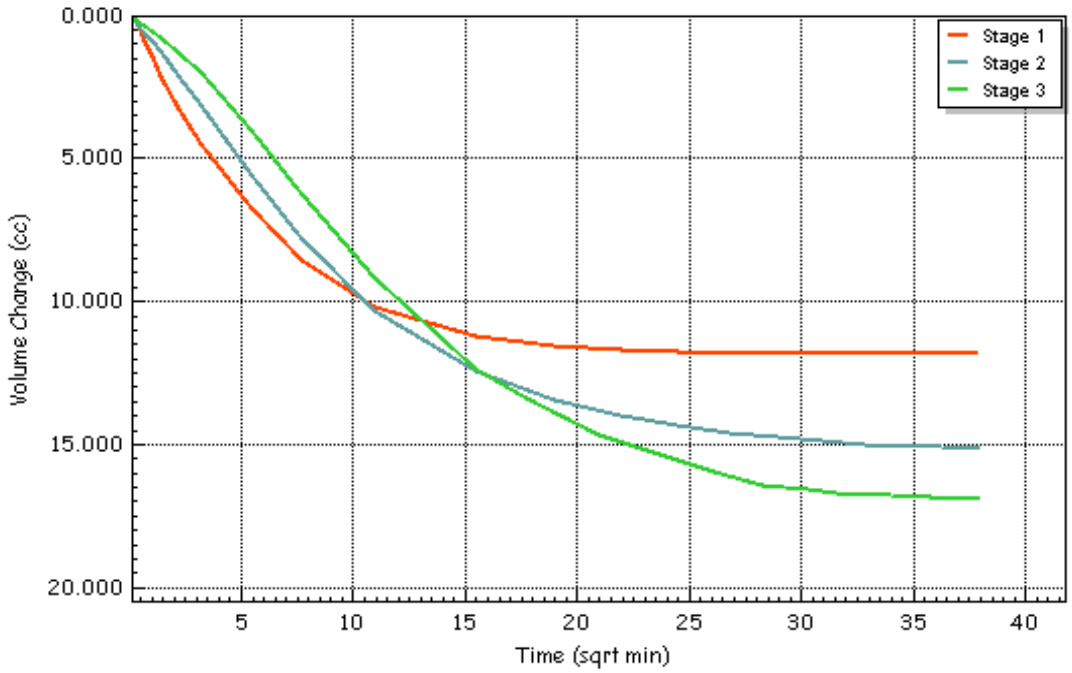
Consolidated Undrained

Consolidation Plots

Initial Conditions					
			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	495	540	630
Initial Back Pressure	u_{bi}	(kPa)	450	450	450
Pore Water Pressure Input	u_{pwp}	(kPa)	480	504	557
Drainage Method			Radial+One End		

Final Conditions					
			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	0.65	1.49	2.43
Corrected Length	L_C	(mm)	210.5	205.1	198.7
Corrected Area	A_C	(cm2)	85.39	86.35	87.55
Corrected Volume	V_C	(cc)	1797.864	1782.711	1765.806
T100 Time to Failure	t_{100}	(min)	71.71	205.50	339.72
Consolidation	c_v	(m2/year)	3.145	1.097	0.664
Compressibility	m_v	(m2/MN)	0.215	0.277	0.227
Test Time	t_F	(h:m:s)	02:09:04	06:09:54	10:11:29
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08156	0.08156	0.08156

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP01 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP01
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

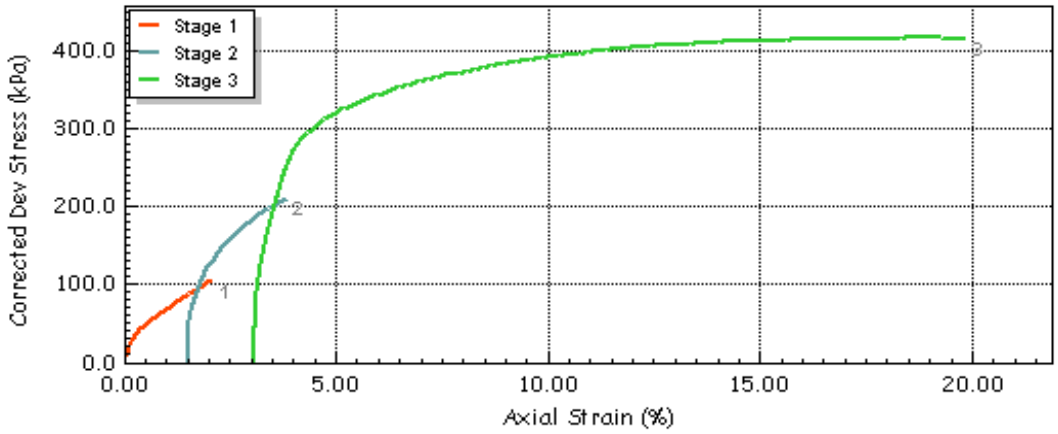
UKAS TESTING 4043

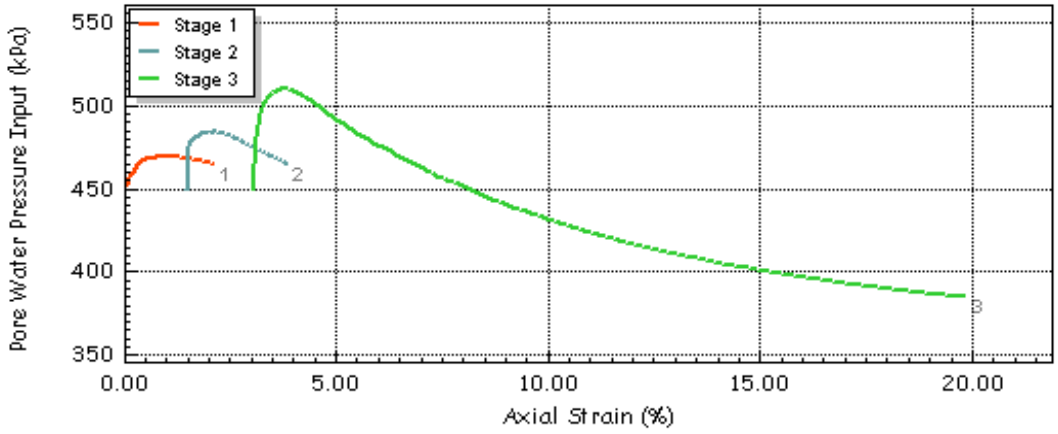
PSL PROFESSIONAL SOILS LABORATORY

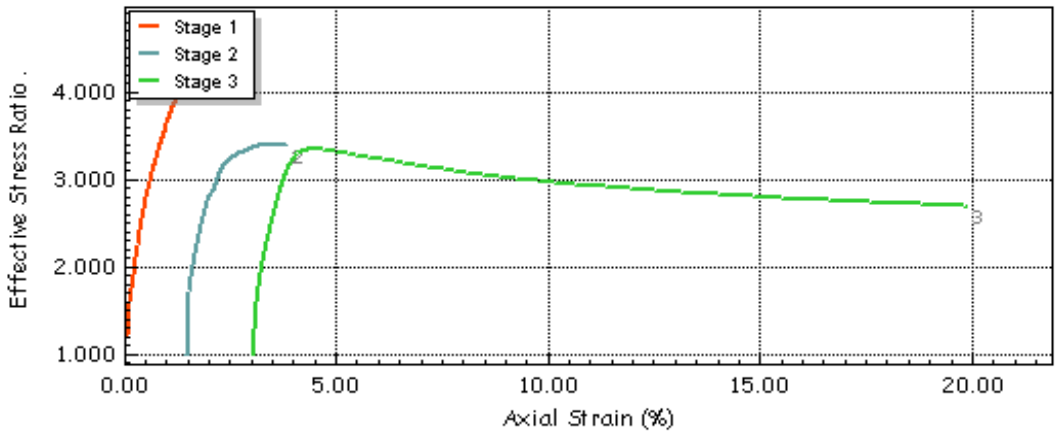
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP01 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP01
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

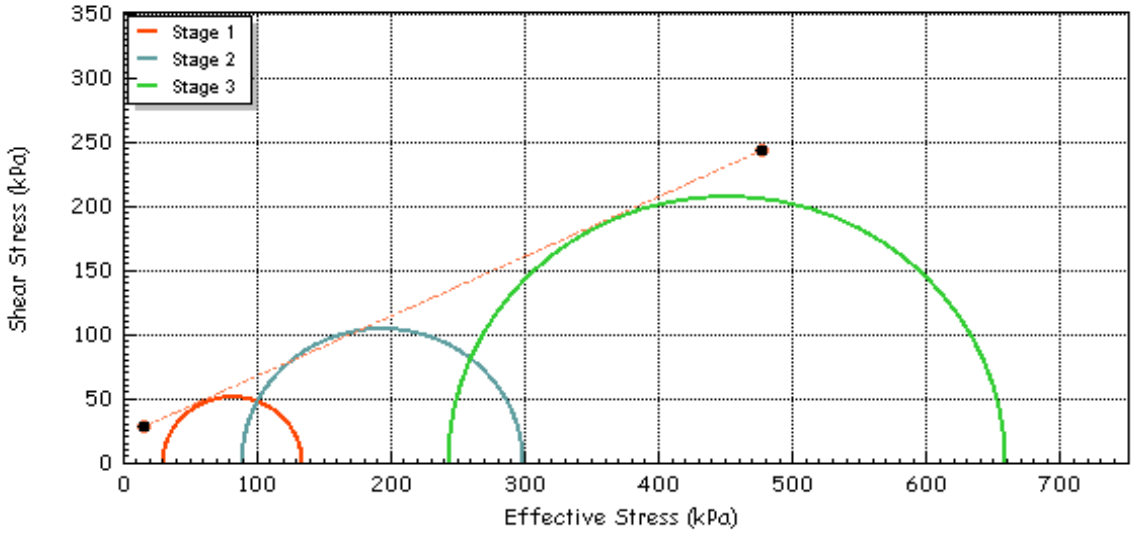
PSL PROFESSIONAL SOILS LABORATORY

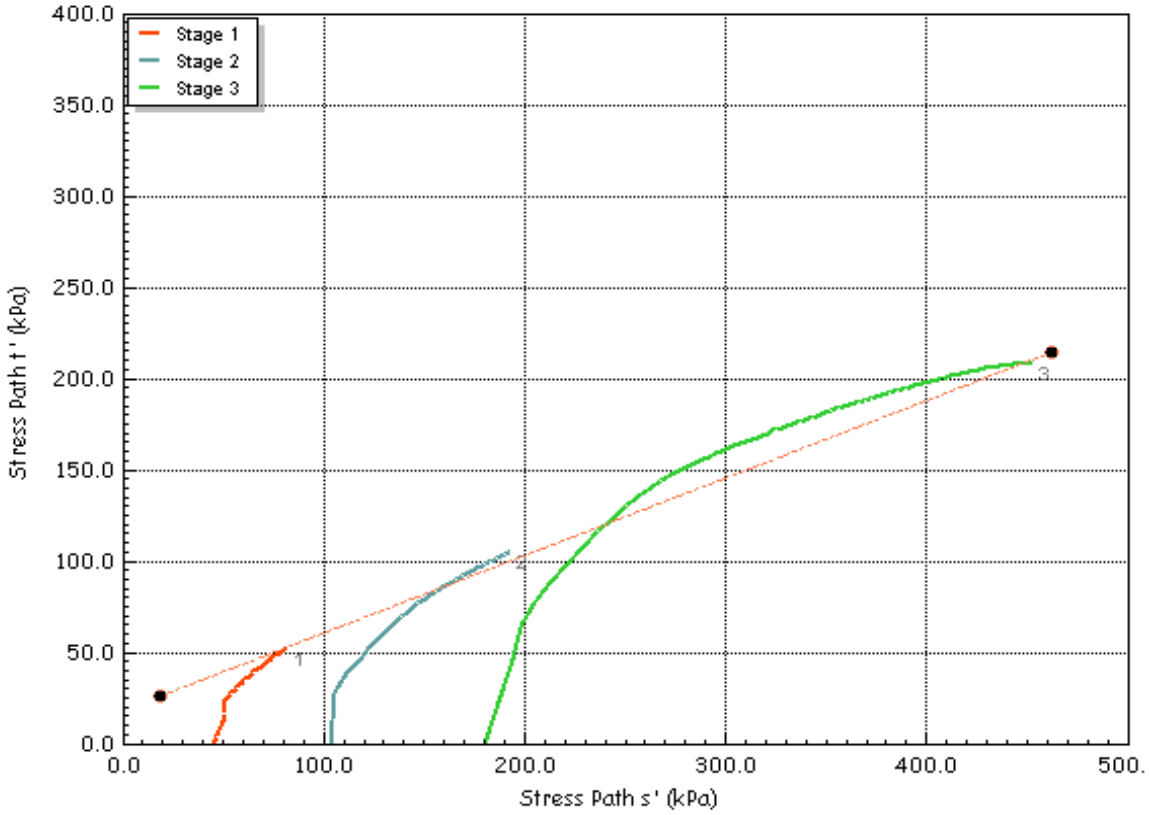
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	20.44	Effective Cohesion	c'	(kPa)	20.44
Effective Friction	ϕ'	(deg)	25.1	Effective Friction	ϕ'	(deg)	25.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP01 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP01
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
	Depth			4.50-4.95m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.8
	Initial Sample Weight	W_0	(gr)	3724.0
sketch showing specimen location in original sample	Initial Bulk Density	ρ_0	(Mg/m3)	2.05
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	700	750	900	
Initial Back Pressure	U_{bi}	(kPa)	650	650	650	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	19			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.73			
Initial Voids Ratio	e_i	.	0.542			
Initial Degree of Saturation	S_i	(%)	91			
B Value	B	.	0.95			

Final Conditions						
Final Moisture	ω_f	(%)	19			
Final Dry Density	ρ_{df}	(Mg/m3)	1.76			
Final Voids Ratio	e_f	.	0.510			
Final Degree of Saturation	S_f	(%)	96.8			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.99	3.27	10.80	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	90.9	142.0	363.8	
Minor Stress At Failure	σ_3'	(kPa)	50.6	72.1	237.0	
Major Stress At Failure	σ_1'	(kPa)	141.5	214.1	600.8	
Principal Stress Ratio At Failure	σ_1'/σ_3'		2.796	2.969	2.535	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP08 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP08
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

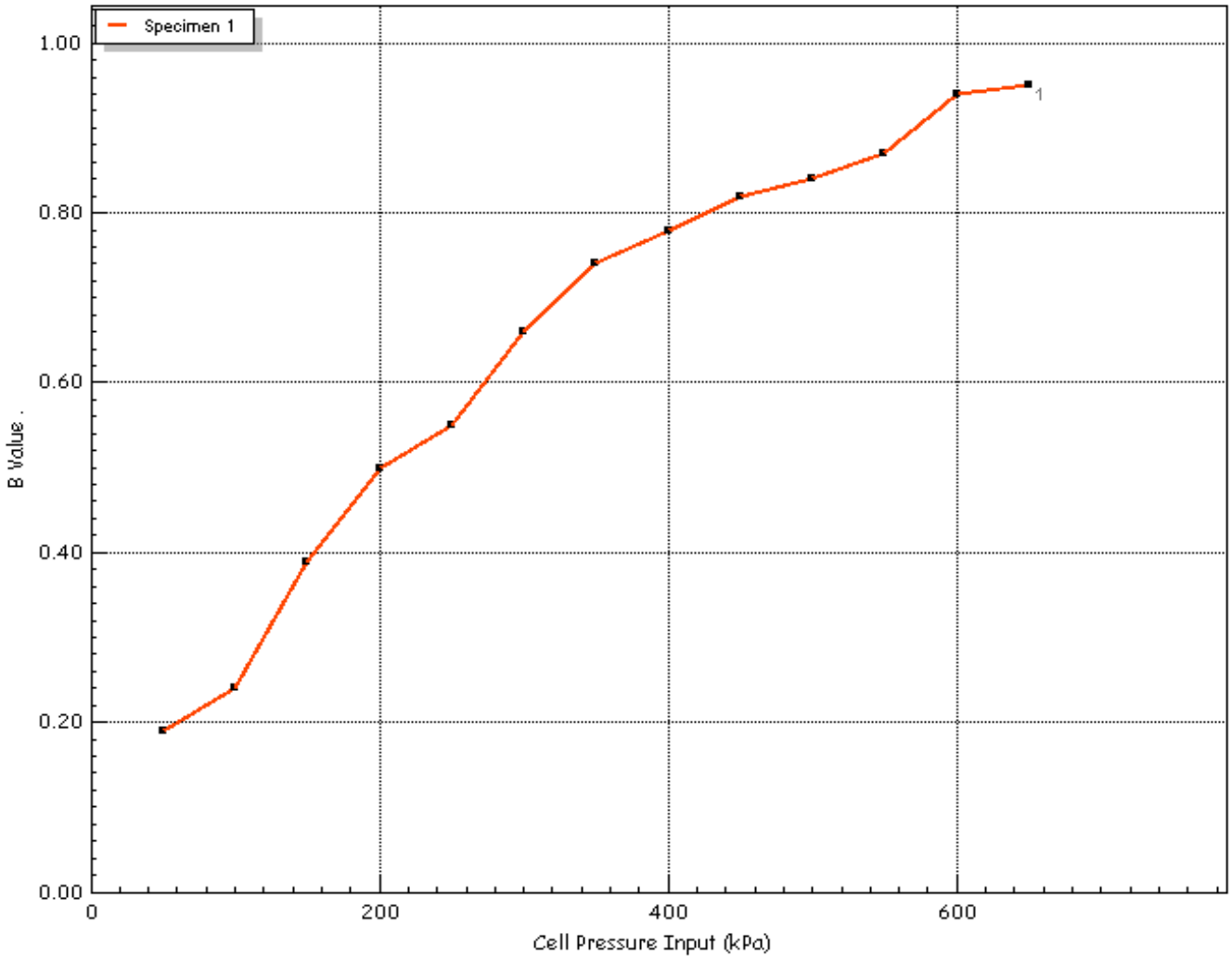
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	650
Pore Water Pressure Input	u pwp	(kPa)	592
B Value	B	.	0.95



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP08 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP08
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

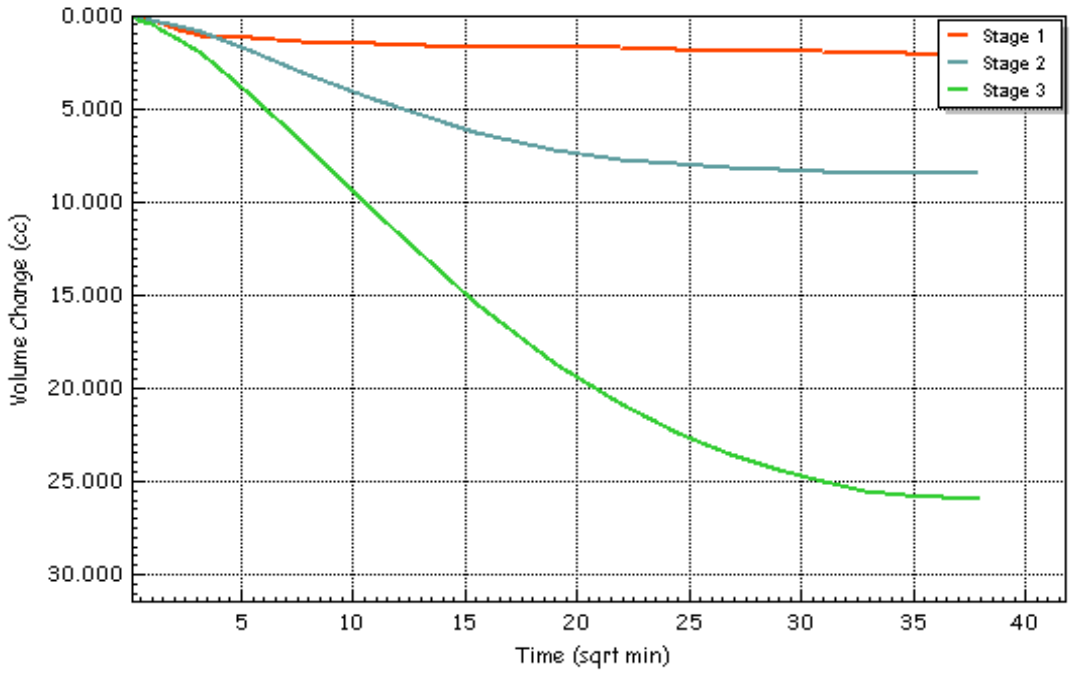
Initial Conditions

			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	700	750	900
Initial Back Pressure	u_{bi}	(kPa)	650	650	650
Pore Water Pressure Input	u_{pwp}	(kPa)	674	680	814
Drainage Method			Radial+One End		

Final Conditions

			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	0.11	0.58	2.01
Corrected Length	L_C	(mm)	210.9	206.2	200.8
Corrected Area	A_C	(cm2)	86.19	87.64	88.32
Corrected Volume	V_C	(cc)	1818.018	1809.504	1783.551
T100 Time to Failure	t_{100}	(min)	33.52	347.97	593.98
Consolidation	c_v	(m2/year)	6.766	0.652	0.382
Compressibility	m_v	(m2/MN)	0.048	0.197	0.122
Test Time	t_F	(h:m:s)	02:00:00	10:26:20	17:49:09
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08788	0.08788	0.08788

Notes



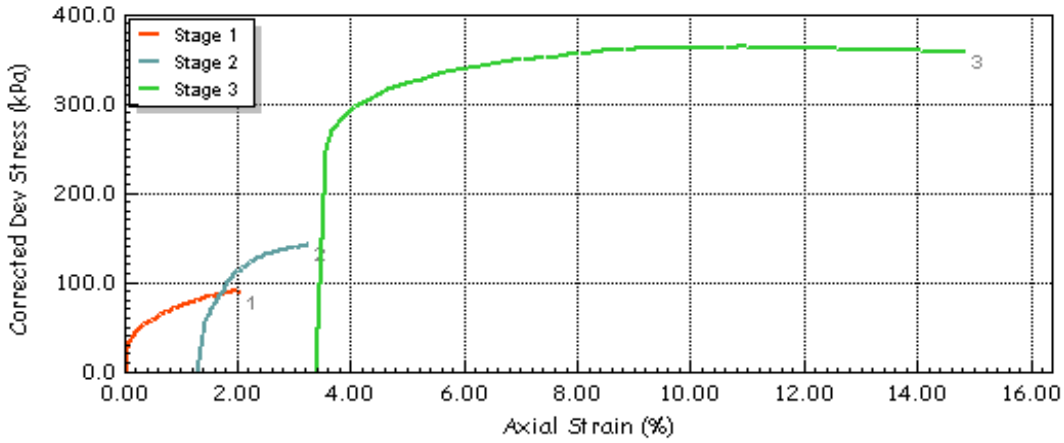
UKAS TESTING 4043	Test Method	BS1377-8 : 1990 : Clause 7	Test Name: CP08 4.50-4.95m Test Date: 24/08/2022
	Jobfile: Stansted Terminal 2 ST2 - Ground Investigation Client: Socotec		Borehole: CP08 Sample: 4.50-4.95m Depth: 4.50-4.95m

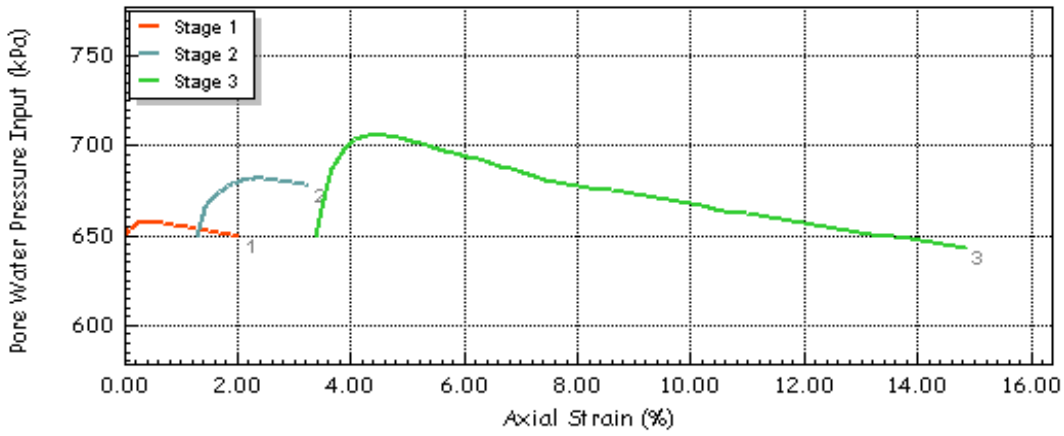
PSL PROFESSIONAL SOILS LABORATORY

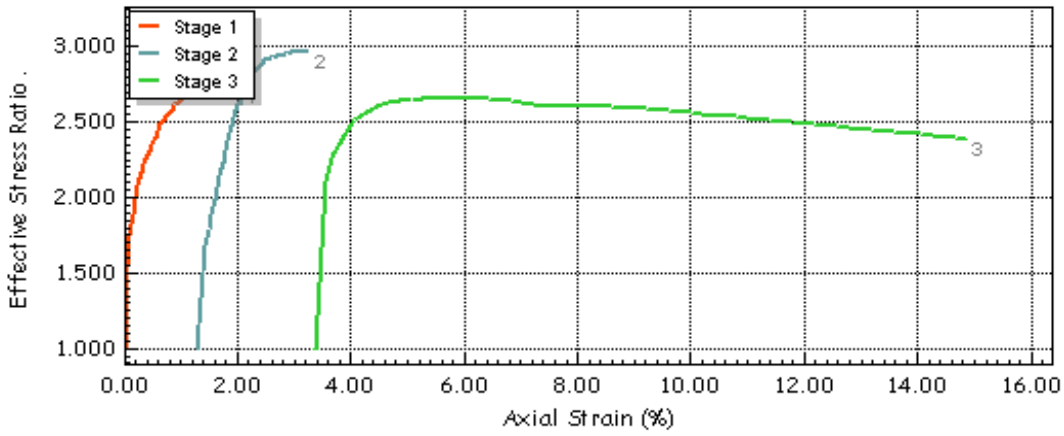
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP08 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP08
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

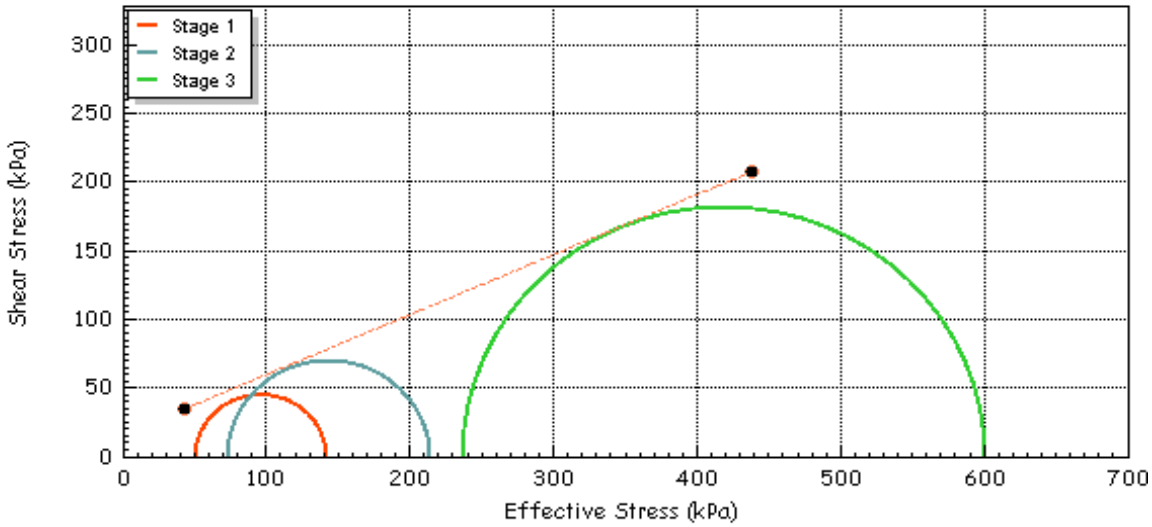
PSL PROFESSIONAL SOILS LABORATORY

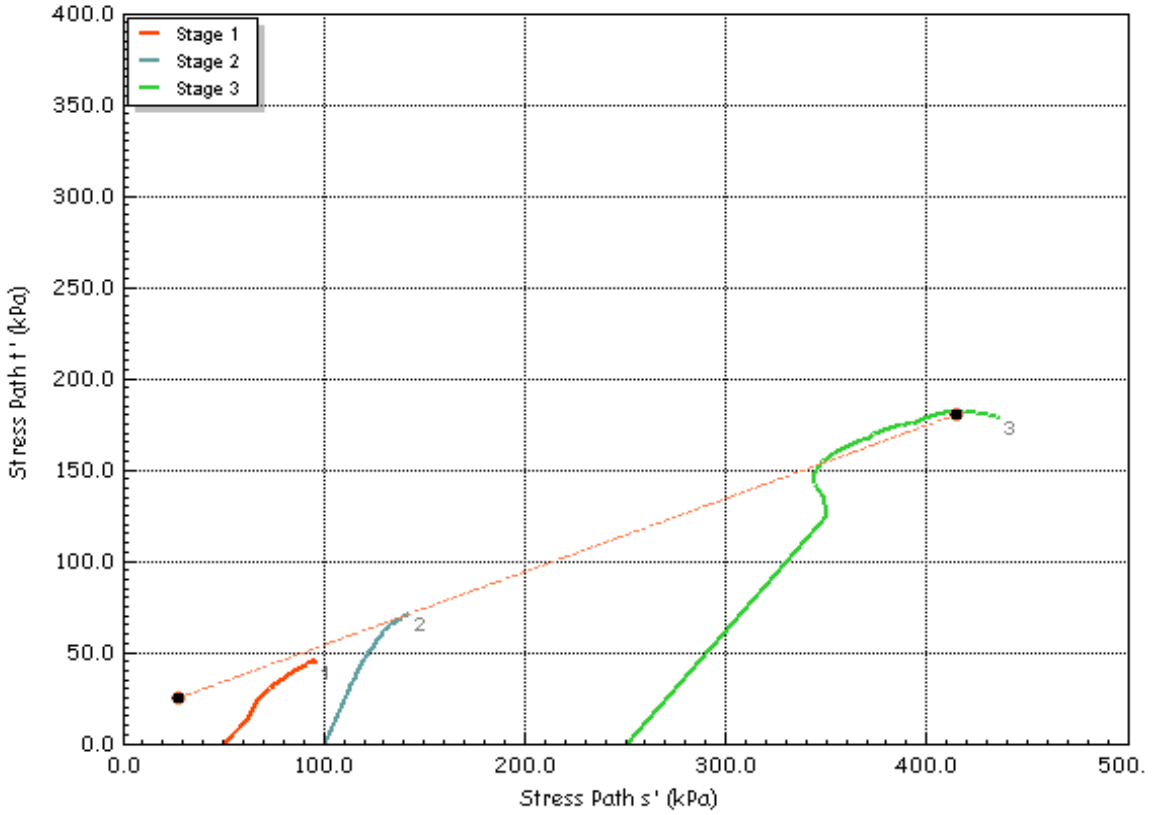
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	15.58	Effective Cohesion	c'	(kPa)	15.58
Effective Friction	ϕ'	(deg)	23.6	Effective Friction	ϕ'	(deg)	23.6





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP08 4.50-4.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP08
		Sample	4.50-4.95m
Client	Socotec	Depth	4.50-4.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-16544 *Issued:* 26-Aug-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-16544

Client Reference PSL22/5218

Order No (not supplied)

Contract Title Stansted Terminal 2 (STS)-Ground Investigation

Description 4 Soil samples.

Date Received 23-Aug-22

Date Started 23-Aug-22

Date Completed 26-Aug-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-16544
Client Ref PSL22/5218
Contract Title Stansted Terminal 2 (STS)-Ground Investigation

	Lab No	2049330	2049331	2049332	2049333
	.Sample ID	CP01	CP08	CP08	CP01
	Depth	3.00	1.50	13.00	17.50
	Other ID				
	Sample Type	D	D	D	UT
	Sampling Date	n/s	n/s	n/s	n/s
	Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	13	< 10
Inorganics					
pH	DETSC 2008#		pH	8.1	7.8	8.1	7.9
Chloride Aqueous Extract	DETSC 2055	1	mg/l	4.3	3.4	37	6.1
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	34	320	190	180
Sulphur as S, Total	DETSC 2320	0.01	%	0.04	0.26	0.42	0.32
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	0.13	0.10	0.09

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-16544
Client Ref PSL22/5218
Contract Stansted Terminal 2 (STS)-Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2049330	CP01 3.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2049331	CP08 1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2049332	CP08 13.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2049333	CP01 17.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/5219

Report Date: 02 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 10/8/2022
Date Commenced: 10/8/2022
Date Completed: 2/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail:

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP03	5	D	0.60		Brown gravelly sandy CLAY. Gravel contains chalk.
CP03	13	UT	1.60	2.05	Brown very gravelly sandy CLAY.Gravel is chalk.
CP03	16	D	2.50		Brown gravelly sandy CLAY.Gravel contains chalk.
CP03	22	UT	3.50	3.95	Very stiff brown gravelly sandy CLAY.Gravel contains chalk.
CP03	30	D	5.00		Brown gravelly sandy CLAY. Gravel is chalk.
CP03	32	UT	5.50	5.95	Brown very gravelly sandy CLAY.Gravel is chalk.
CP03	41	UT	7.50	7.95	Very stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP03	45	D	8.50		Brown gravelly very sandy CLAY. Gravel is chalk.
CP03	57	D	11.00		Brown gravelly sandy CLAY. Gravel is chalk.
CP03	59	UT	11.50	11.95	Brown gravelly sandy CLAY. Gravel is chalk.
CP03	70	B	13.70	14.00	Brown mottled grey sandy very clayey GRAVEL.
CP03	79	UT	16.00	16.45	Very stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP03	84	D	17.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP03	89	D	19.00		Brown gravelly sandy CLAY. Gravel is chalk.
CP04	6	D	0.70		Brown gravelly sandy CLAY.
CP04	14	UT	2.00	2.45	Stiff brown slightly gravelly sandy CLAY.
CP04	15	D	2.45	2.55	Brown gravelly sandy CLAY.
CP04	23	D	4.00		Brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP04	24	UT	4.00	4.45	Very stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP04	30	D	5.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP04	37	D	7.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP04	39	UT	8.00	8.45	Very stiff brown gravelly sandy CLAY. Gravel is chalk.
CP04	46	UT	10.00	10.45	Grey mottled brown very gravelly sandy CLAY.Gravel is chalk.
CP04	51	D	11.50		Brown gravelly very sandy CLAY. Gravel is chalk.
CP04	57	B	12.50	12.95	Grey sandy silty GRAVEL. Gravel contains chalk.
CP04	61	D	13.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP05	11	D	1.50		Brown gravelly sandy CLAY. Gravel contains chalk.
CP05	15	UT	3.50	3.95	Brown gravelly sandy CLAY. Gravel contains chalk.
CP05	19	D	4.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP05	22	UT	5.50	5.95	Brown very gravelly sandy CLAY.Gravel is chalk.
CP05	25	D	6.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP05	31	UT	9.00	9.45	Very stiff brown gravelly sandy CLAY. Gravel is chalk.
CP05	34	D	10.00		Brown gravelly sandy CLAY. Gravel is chalk.
CP05	37	D	11.50		Brown gravelly sandy CLAY. Gravel is chalk.
CP05	39	UT	12.50	12.95	Grey mottled brown very gravelly sandy CLAY.Gravel is chalk.
CP05	43	B	13.50	14.00	Grey very gravelly slightly sandy CLAY.Gravel is chalk.
CP05	44	UT	14.50	14.95	Very stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.
CP05	50	D	17.00		Brown gravelly sandy CLAY. Gravel is chalk.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP05	55	D	19.00		Brown gravelly sandy CLAY. Gravel is chalk.
DS09	7	D	2.50		Brown gravelly sandy CLAY.
DS09	17	D	4.50		Brown mottled grey gravelly sandy CLAY. Gravel contains chalk.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP03	5	D	0.60		21			45	21	24	83	Intermediate Plasticity CI
CP03	13	UT	1.60	2.05			2.63					
CP03	16	D	2.50		25			36	18	18	82	Intermediate Plasticity CI
CP03	30	D	5.00		20			40	20	20	83	Intermediate Plasticity CI
CP03	32	UT	5.50	5.95			2.61					
CP03	45	D	8.50		17			32	16	16	83	Low Plasticity CL
CP03	57	D	11.00		16			35	17	18	81	Intermediate Plasticity CI
CP03	84	D	17.50		21							
CP03	89	D	19.00		18			37	18	19	82	Intermediate Plasticity CI
CP04	6	D	0.70		13							
CP04	15	D	2.45	2.55	17							
CP04	23	D	4.00		17			38	19	19	85	Intermediate Plasticity CI
CP04	30	D	5.50		18			39	19	20	82	Intermediate Plasticity CI
CP04	37	D	7.50		17							
CP04	46	UT	10.00	10.45			2.65					
CP04	51	D	11.50		22			34	17	17	81	Low Plasticity CL
CP04	61	D	13.50		19			40	20	20	84	Intermediate Plasticity CI
CP05	11	D	1.50		16			38	19	19	80	Intermediate Plasticity CI
CP05	19	D	4.50		15			32	16	16	81	Low Plasticity CL

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

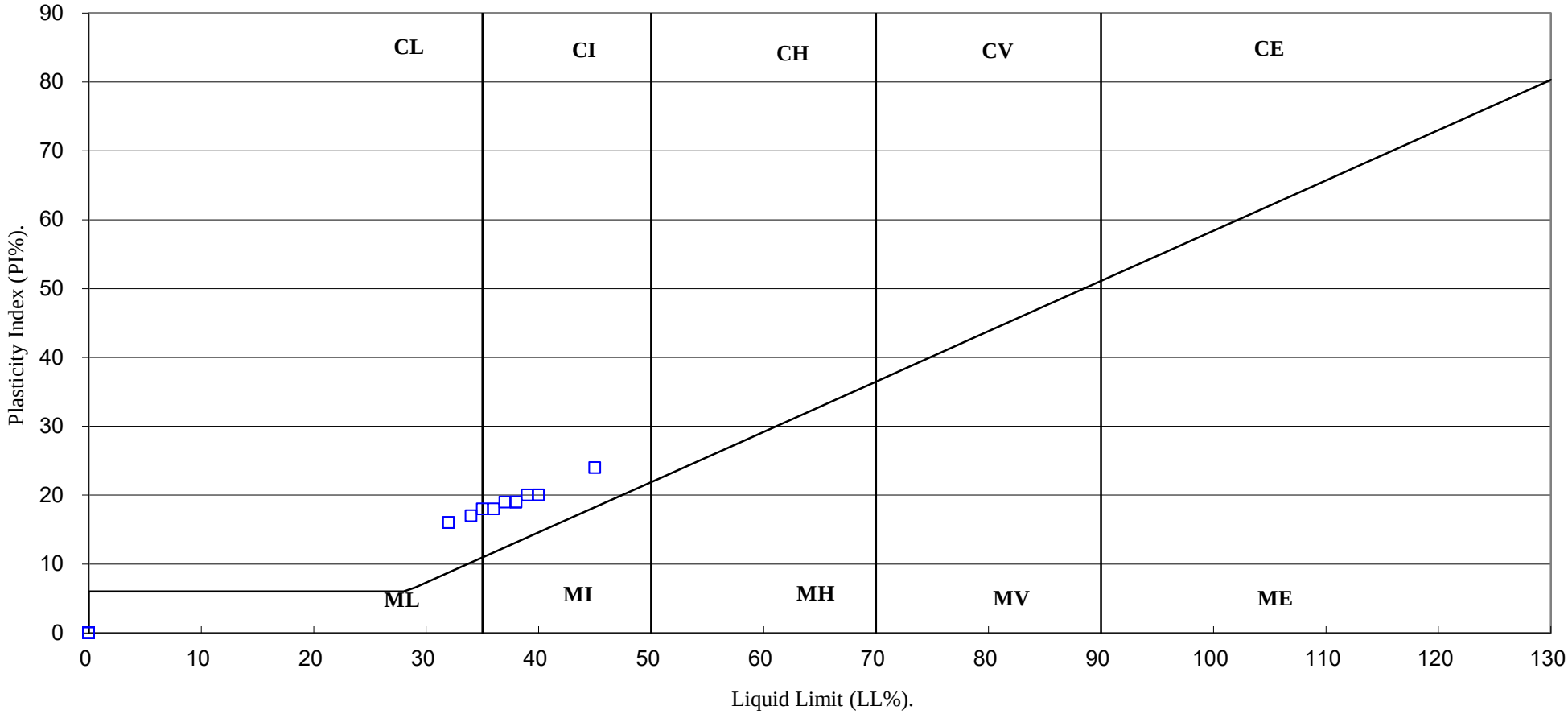
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5219
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP05	22	UT	5.50	5.95			2.66					
CP05	25	D	6.50		17			35	17	18	84	Intermediate Plasticity CI
CP05	34	D	10.00		19			40	19	21	80	Intermediate Plasticity CI
CP05	37	D	11.50		13			39	19	20	82	Intermediate Plasticity CI
CP05	39	UT	12.50	12.95			2.64					
CP05	50	D	17.00		17			45	22	23	81	Intermediate Plasticity CI
CP05	55	D	19.00		17			40	20	20	82	Intermediate Plasticity CI
DS09	7	D	2.50		18			41	20	21	81	Intermediate Plasticity CI
DS09	17	D	4.50		16			36	18	18	82	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

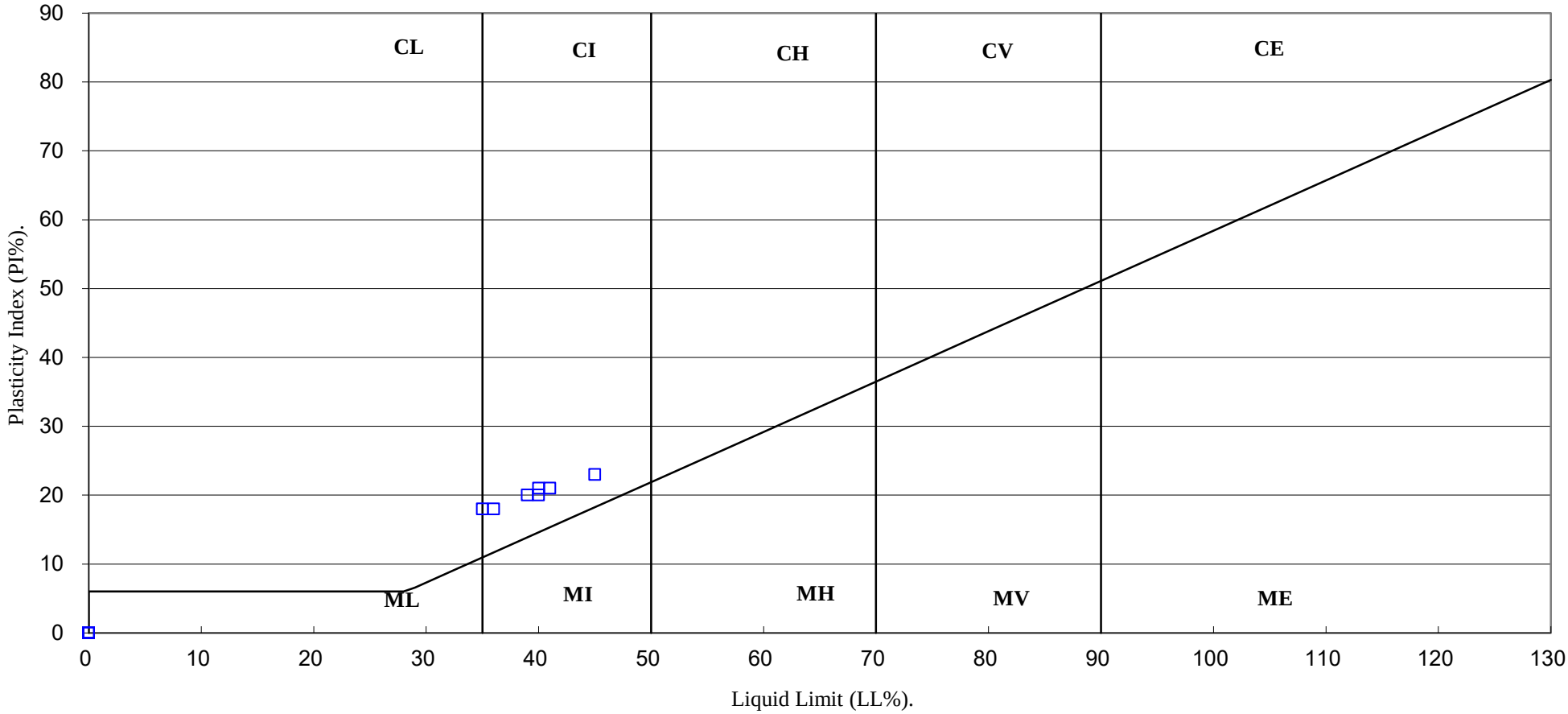
Contract No:

PSL22/5219

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



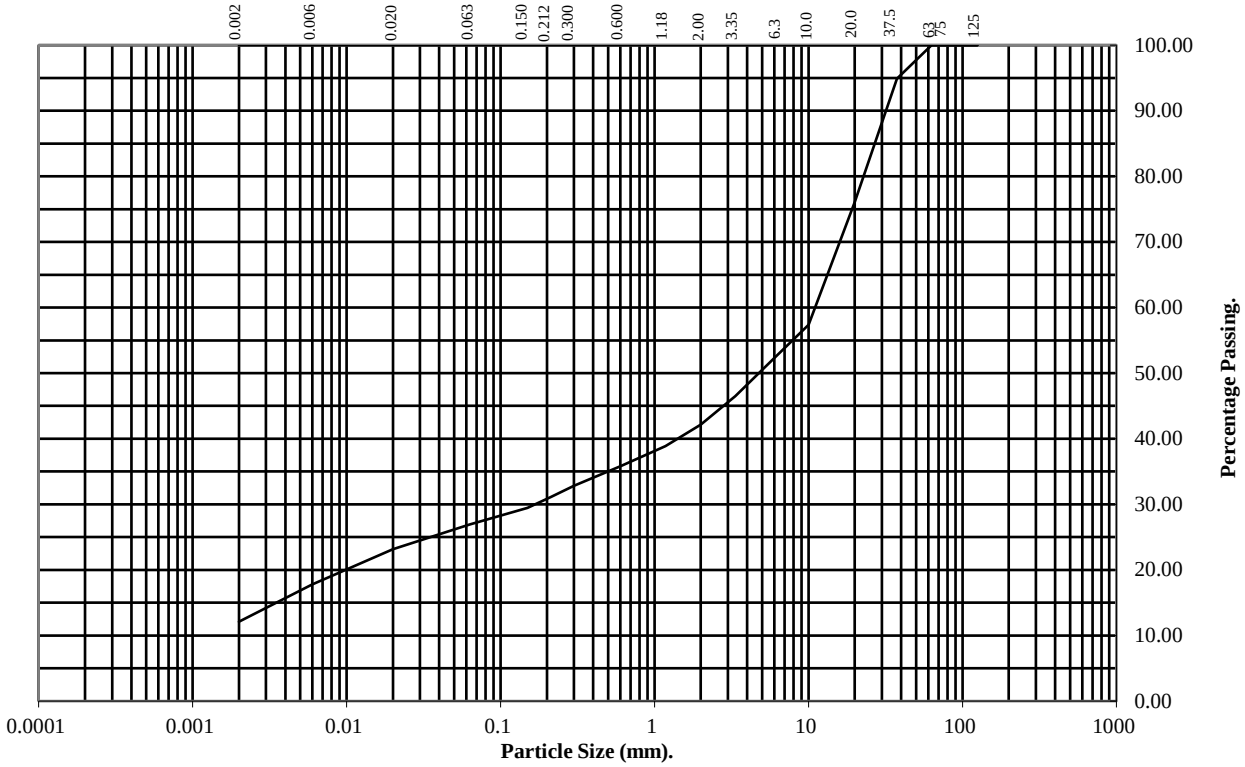
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP03**	**Top Depth (m):**	**13.70**
Sample Number:	**70**	**Base Depth(m):**	**14.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	95
20	76
10	57
6.3	53
3.35	47
2	42
1.18	39
0.6	36
0.3	33
0.212	31
0.15	29
0.063	27

Particle Diameter	Percentage Passing
0.02	23
0.006	18
0.002	12

Soil Fraction	Total Percentage
Cobbles	0
Gravel	58
Sand	15
Silt	15
Clay	12

Remarks:

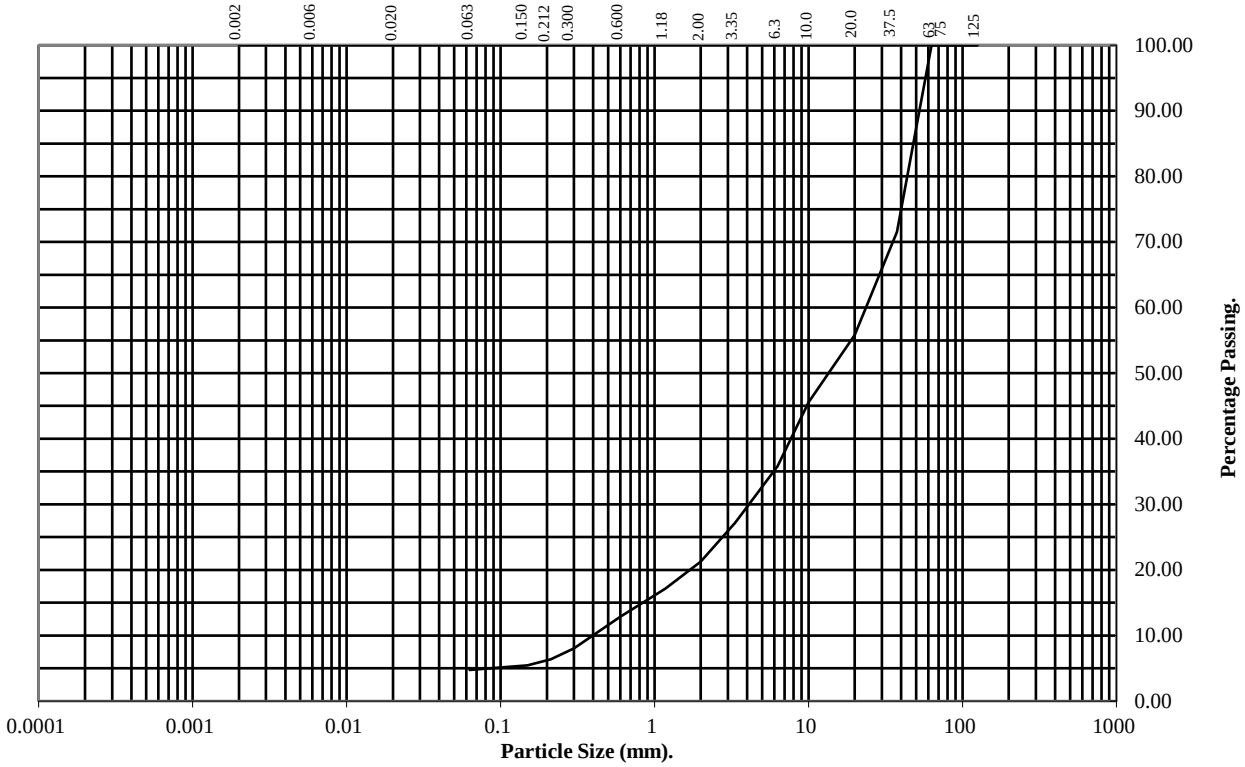
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP04**	**Top Depth (m):**	**12.50**
Sample Number:	**57**	**Base Depth(m):**	**12.95**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	72
20	56
10	46
6.3	36
3.35	27
2	21
1.18	17
0.6	13
0.3	8
0.212	6
0.15	5
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	79
Sand	16
Silt/Clay	5

Remarks:

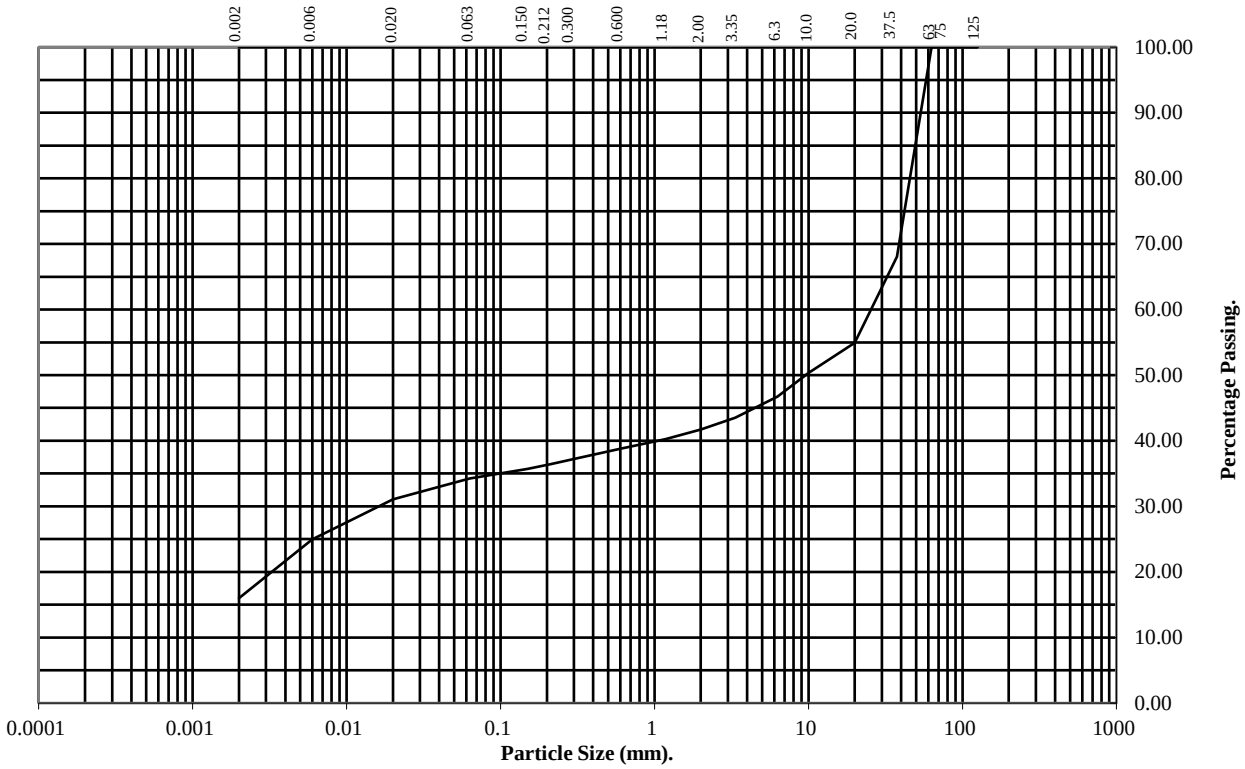
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP05**	**Top Depth (m):**	**13.50**
Sample Number:	**43**	**Base Depth(m):**	**14.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	68
20	55
10	50
6.3	47
3.35	43
2	42
1.18	40
0.6	39
0.3	37
0.212	36
0.15	36
0.063	34

Particle Diameter	Percentage Passing
0.02	31
0.006	25
0.002	16

Soil Fraction	Total Percentage
Cobbles	0
Gravel	58
Sand	8
Silt	18
Clay	16

Remarks:

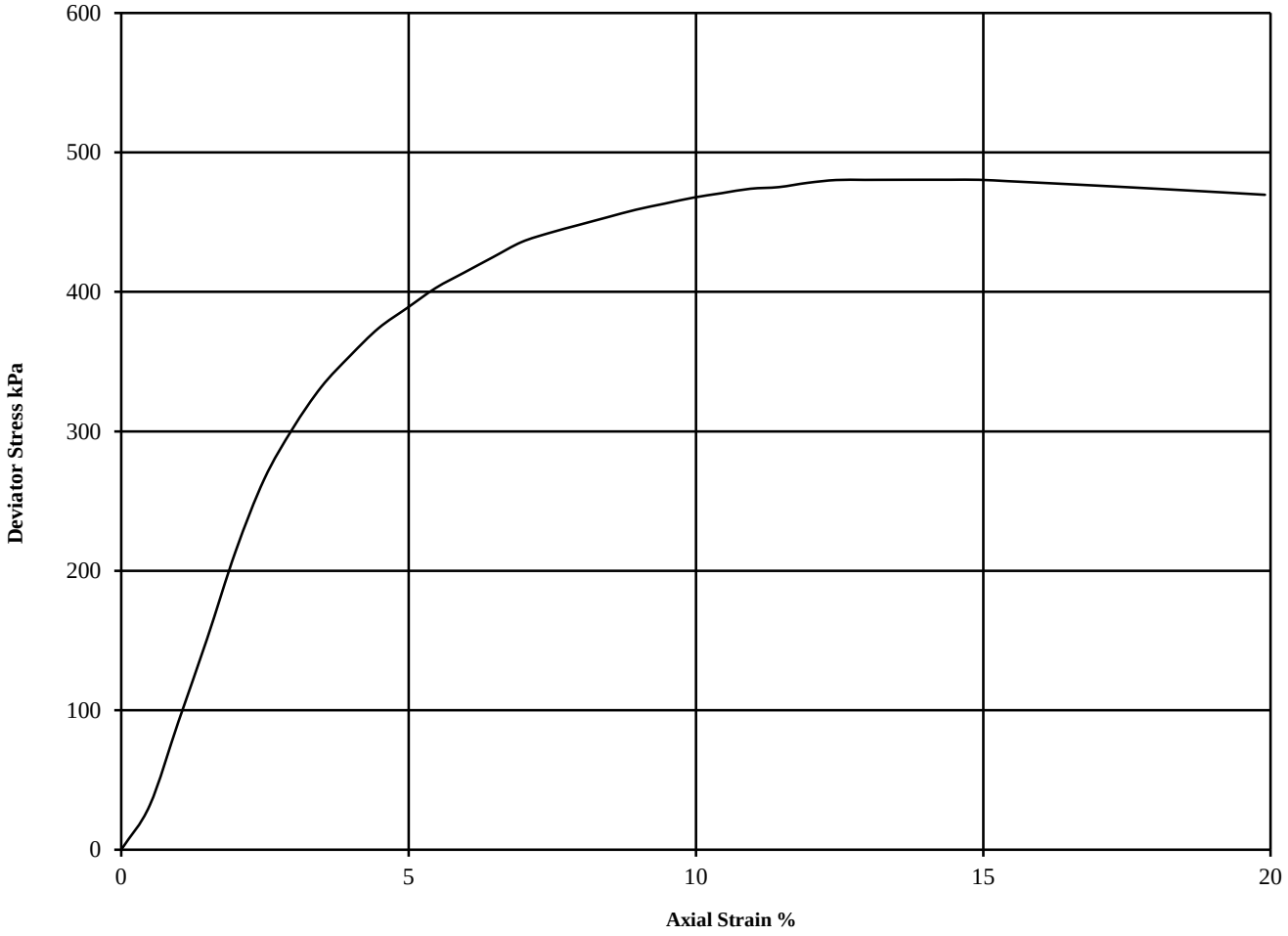
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP04**	**Top Depth (m):**	**8.00**
Sample Number:	**39**	**Base Depth (m):**	**8.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	17	2.14	1.83	160	480	240	14.4	Plastic	See summary of soil descriptions

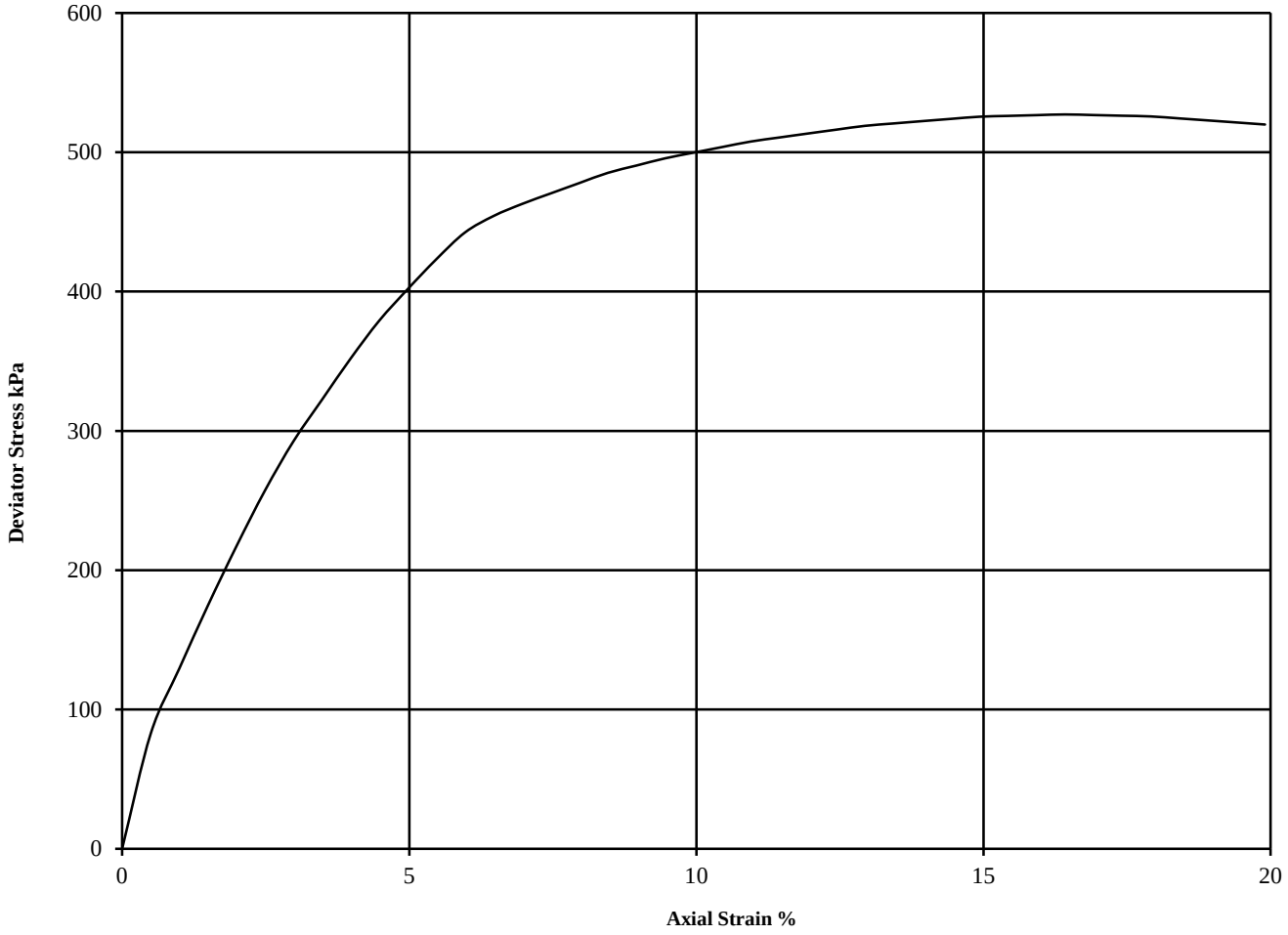
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP03**	**Top Depth (m):**	**3.50**
Sample Number:	**22**	**Base Depth (m):**	**3.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	16	2.15	1.85	70	527	264	16.4	Plastic	See summary of soil descriptions

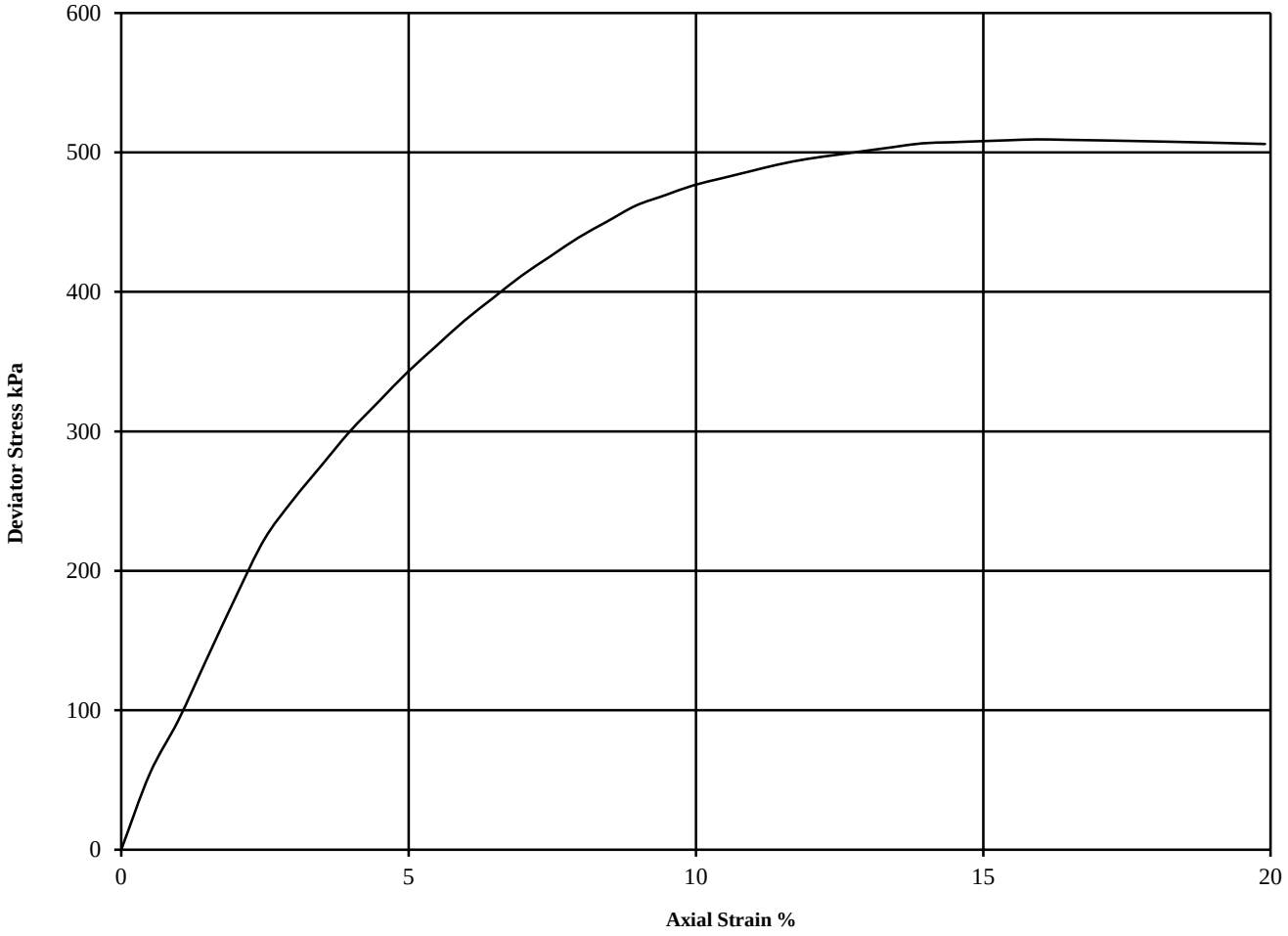
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP03**	**Top Depth (m):**	**7.50**
Sample Number:	**41**	**Base Depth (m):**	**7.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	16	2.16	1.85	150	509	255	15.9	Plastic	See summary of soil descriptions

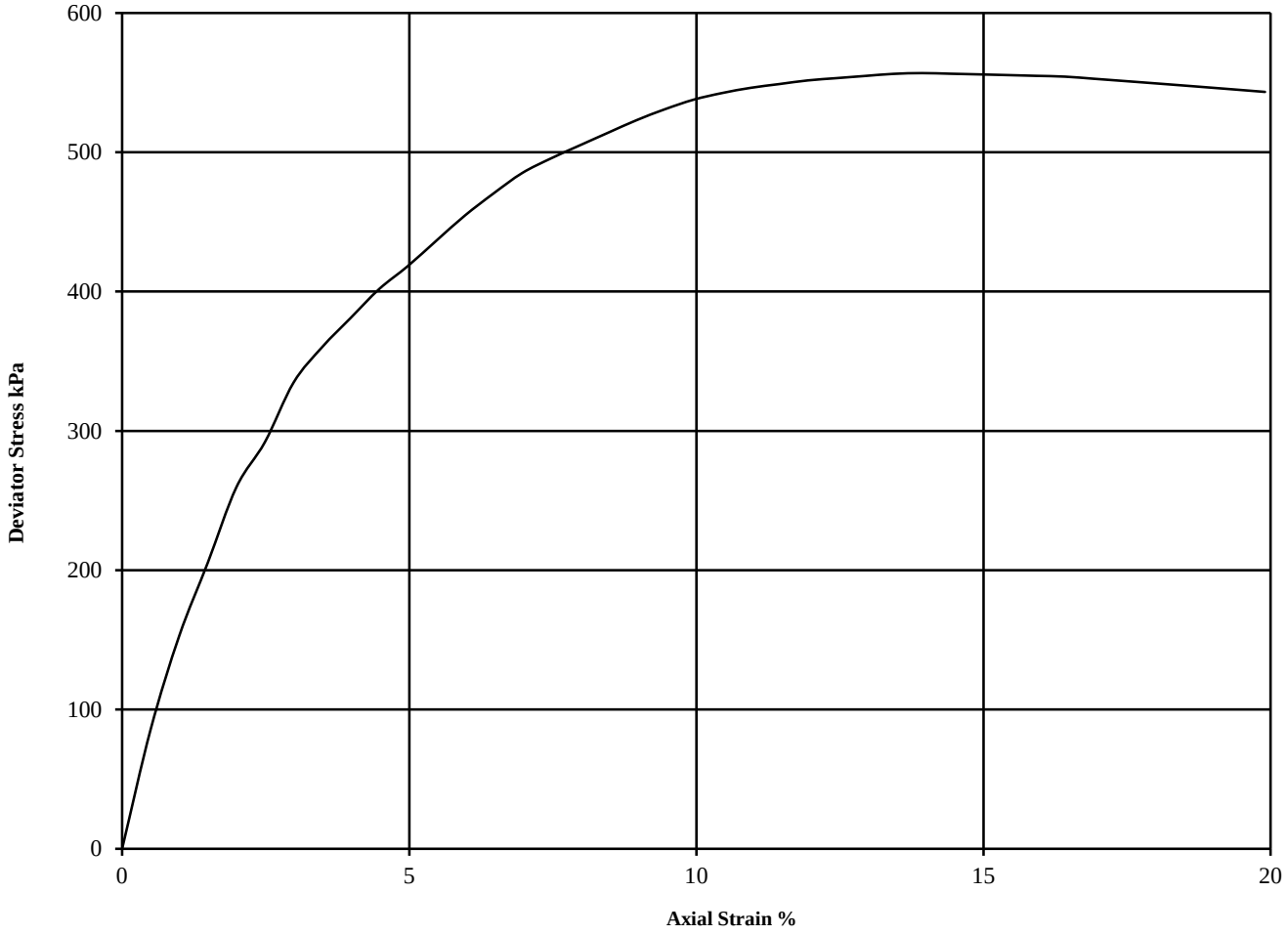
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP03**	**Top Depth (m):**	**16.00**
Sample Number:	**79**	**Base Depth (m):**	**16.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	18	2.13	1.81	240	557	278	13.9	Plastic	See summary of soil descriptions

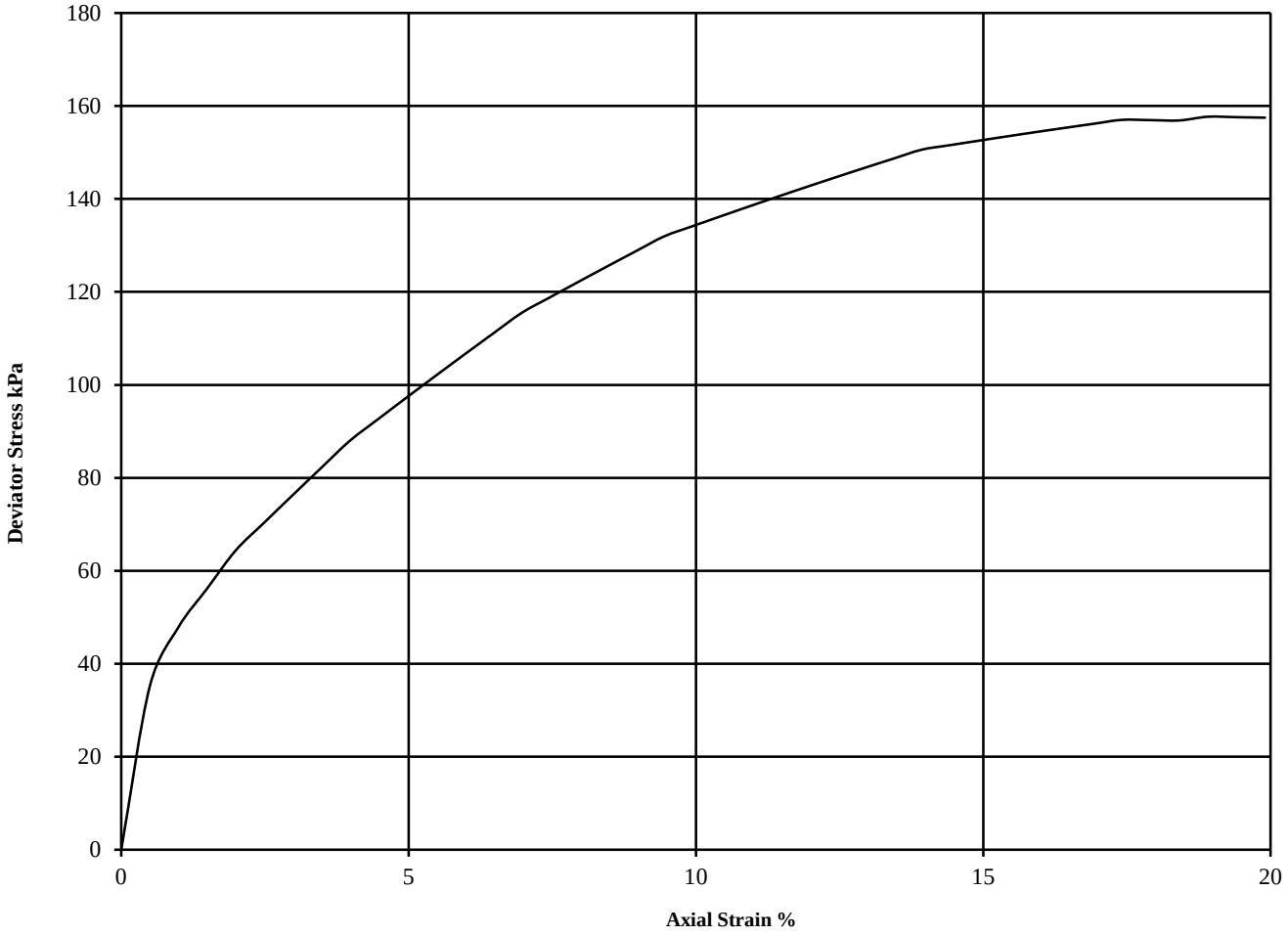
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP04**	**Top Depth (m):**	**2.00**
Sample Number:	**14**	**Base Depth (m):**	**2.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	17	2.09	1.79	40	158	79	18.9	Plastic	See summary of soil descriptions

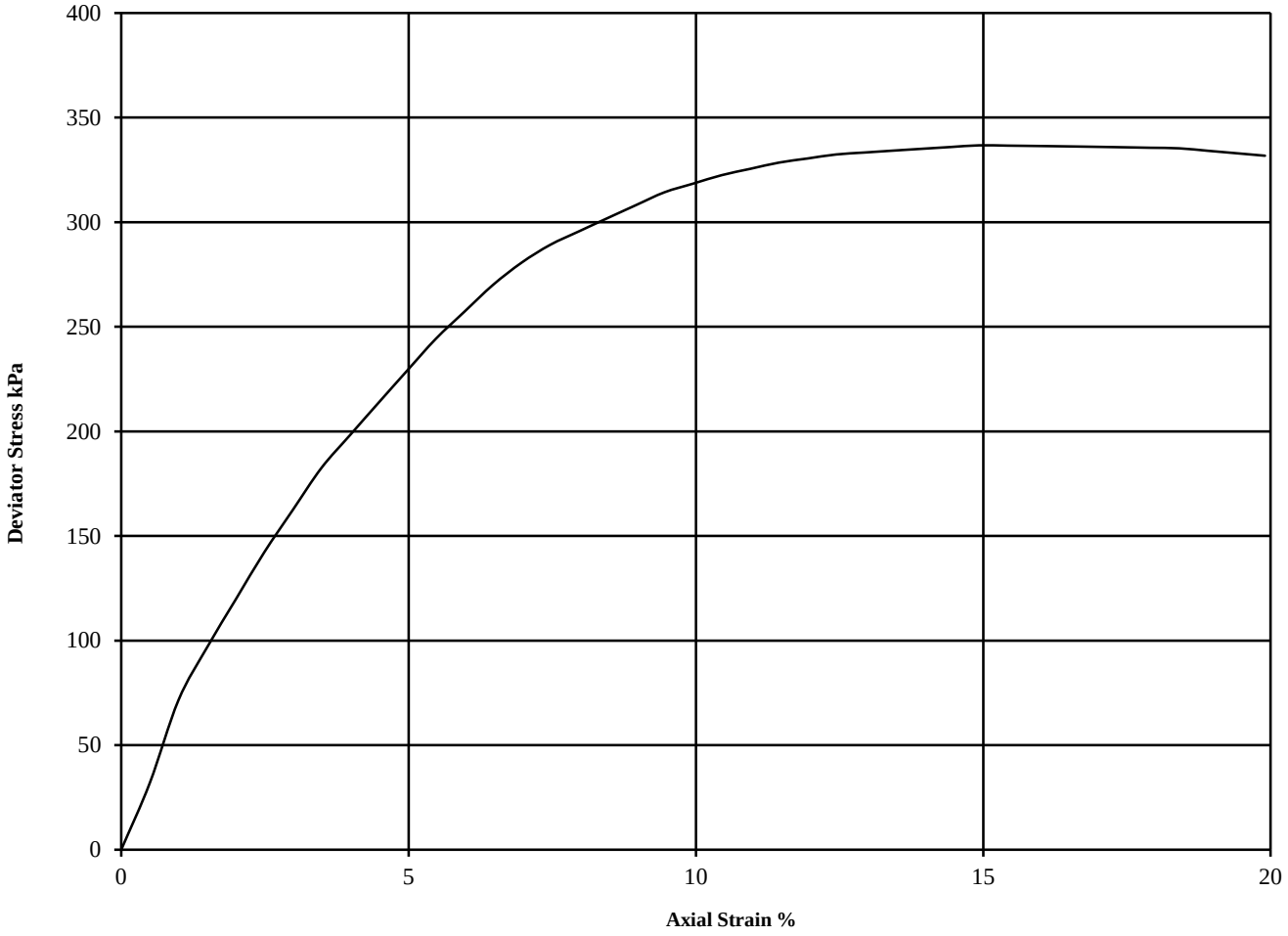
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP04**	**Top Depth (m):**	**4.00**
Sample Number:	**24**	**Base Depth (m):**	**4.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	17	2.12	1.81	80	337	168	14.9	Plastic	See summary of soil descriptions

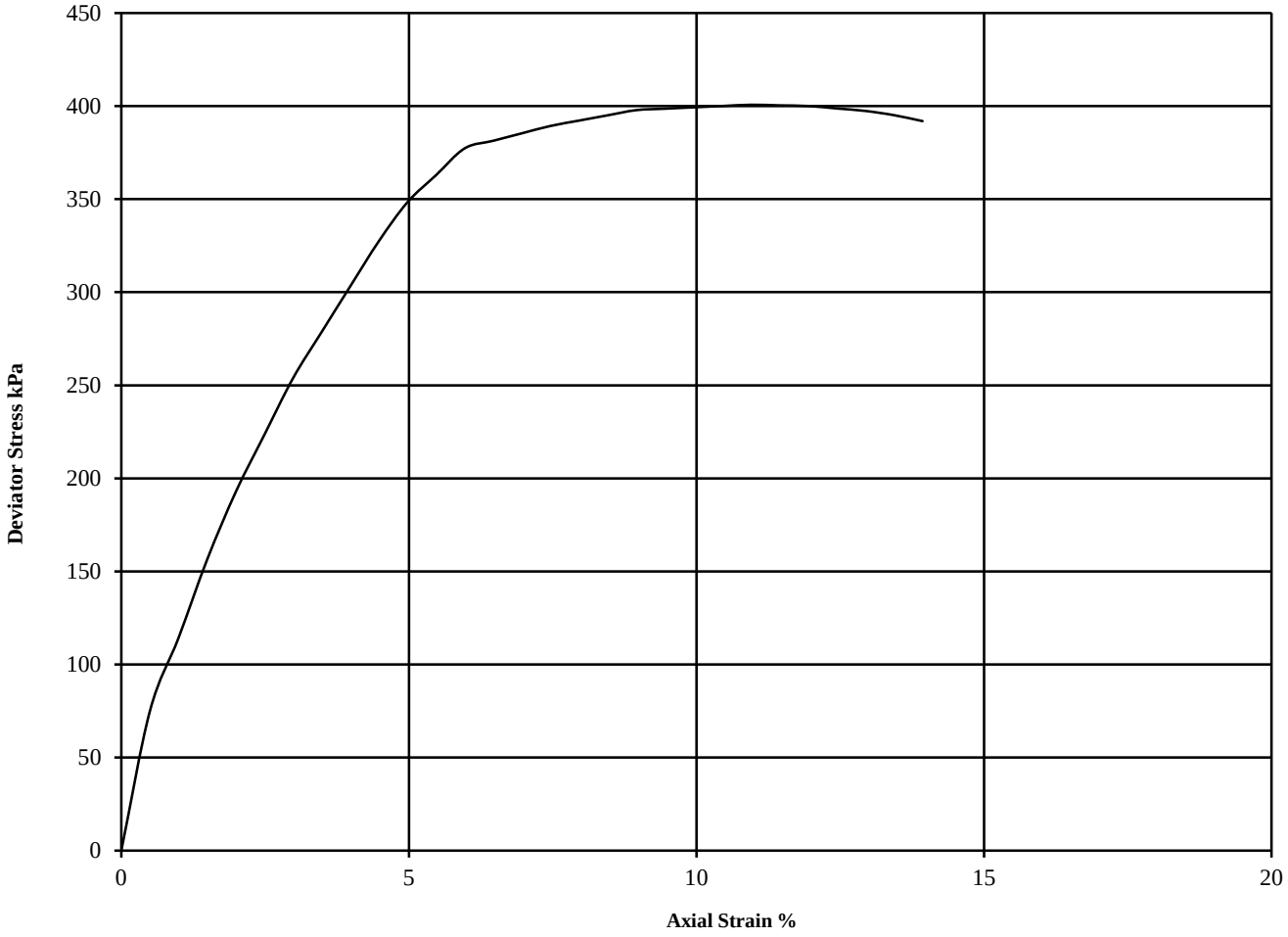
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP05**	**Top Depth (m):**	**9.00**
Sample Number:	**31**	**Base Depth (m):**	**9.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	18	2.15	1.83	170	401	200	10.9	Brittle	See summary of soil descriptions

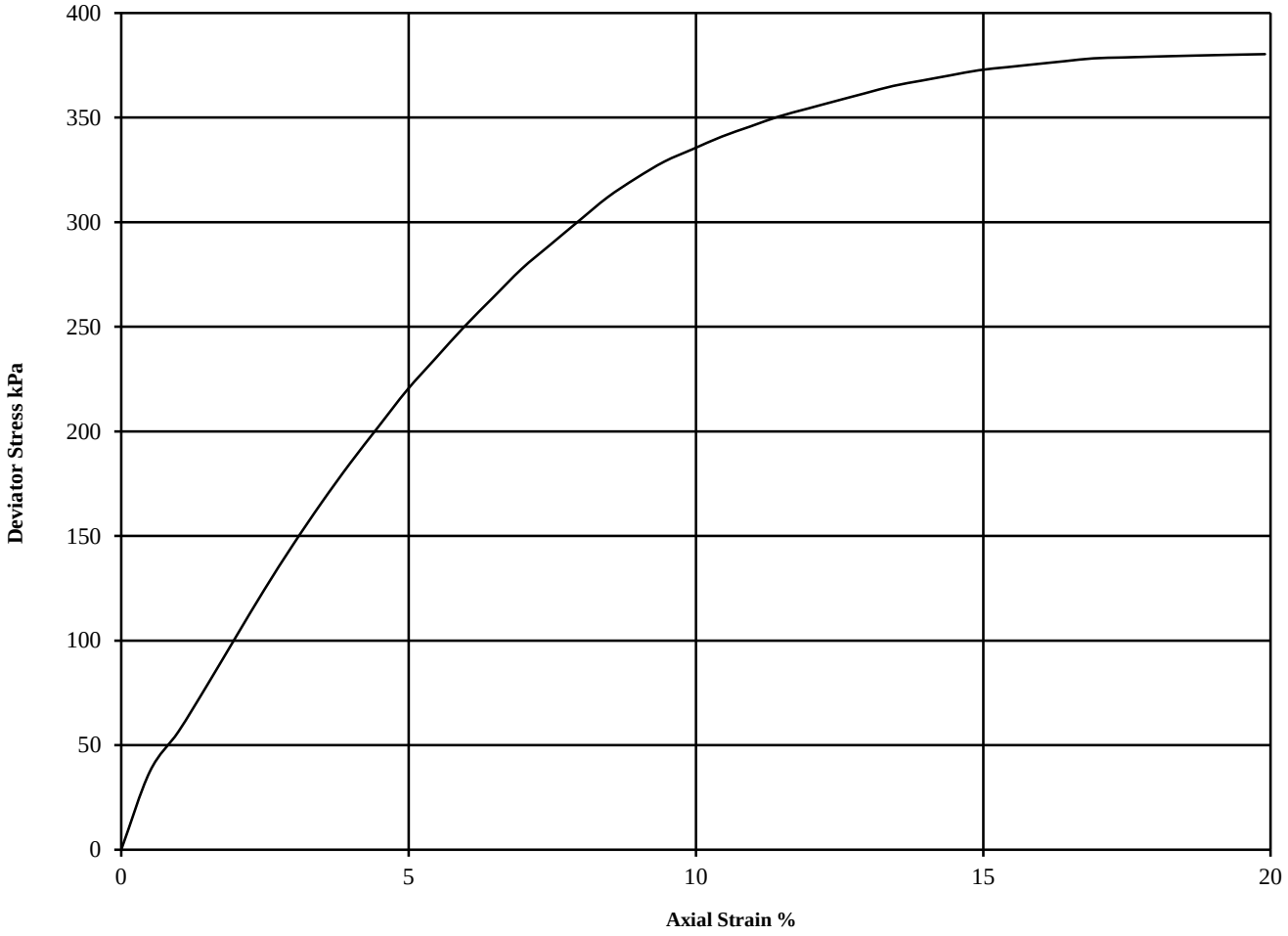
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP05**	**Top Depth (m):**	**14.50**
Sample Number:	**44**	**Base Depth (m):**	**14.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	19	2.10	1.76	220	380	190	19.9	Plastic	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

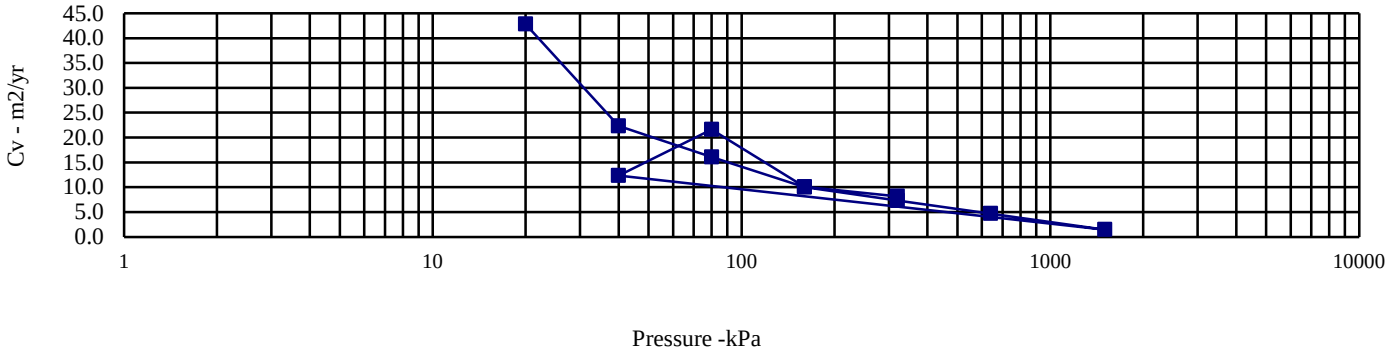
BS 1377: Part 5: 1990: Clause 3

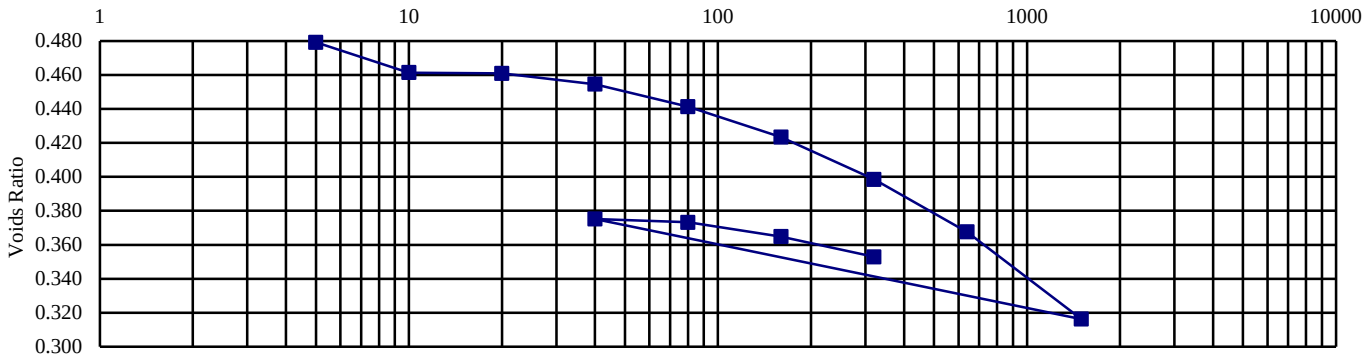
Hole Number: **CP03** **Top Depth (m):** **1.60**

Sample Number: **13** **Base Depth (m) :** **2.05**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	17						
Bulk Density (Mg/m3):	2.08	0	5	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.78	5	10	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.479	10	20	0.030	42.795	Nominal temperature	
Degree of saturation:	93.0	20	40	0.217	22.332	during test ' C:	20
Height (mm):	20.026	40	80	0.227	16.061	Remarks:	
Diameter (mm)	75.005	80	160	0.156	9.989	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.63	160	320	0.109	7.286		
		320	640	0.069	4.678		
		640	1500	0.044	1.465		
		1500	40	0.031	12.316		
		40	80	0.036	21.599		
		80	160	0.076	10.062		
		160	320	0.055	8.141		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5219
Client Ref:
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ONE DIMENSIONAL CONSOLIDATION TEST

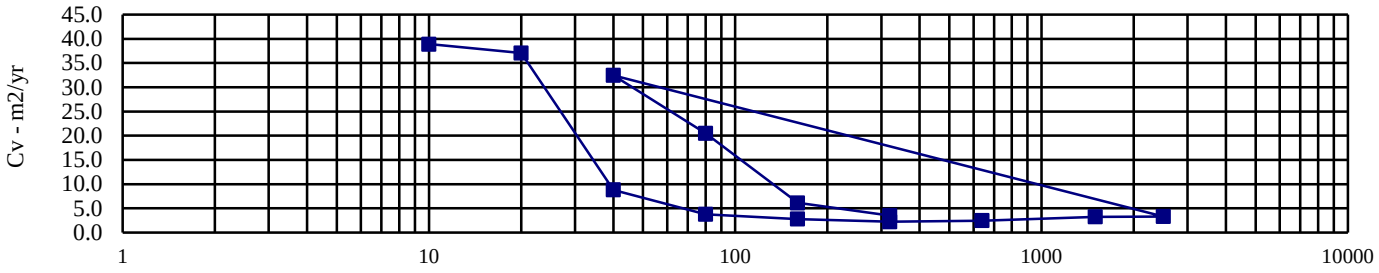
BS 1377: Part 5: 1990: Clause 3

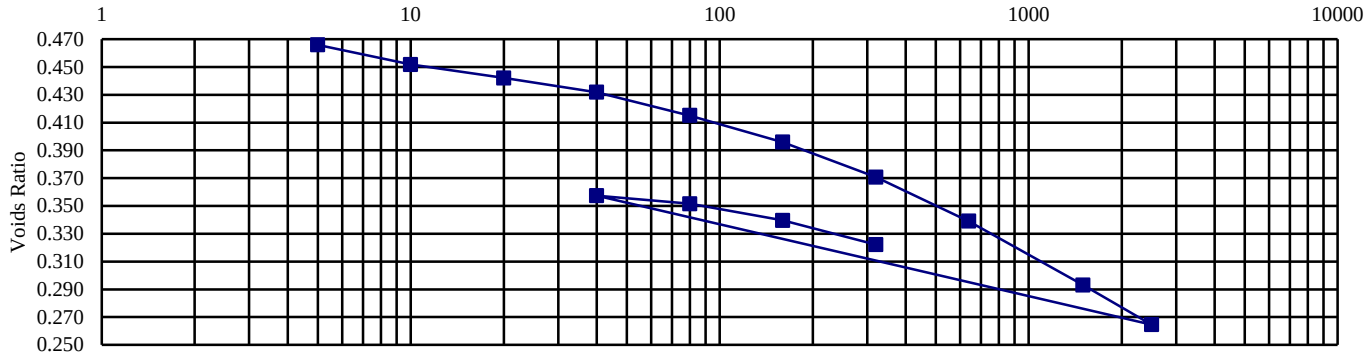
Hole Number: **CP03** **Top Depth (m):** **5.50**

Sample Number: **32** **Base Depth (m) :** **5.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.10	0	5	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.78	5	10	1.928	38.889	determine CV:	T90
Voids Ratio:	0.466	10	20	0.671	37.045	Nominal temperature	
Degree of saturation:	99.8	20	40	0.355	8.810	during test ' C:	20
Height (mm):	20.02	40	80	0.293	3.779	Remarks:	
Diameter (mm)	75.013	80	160	0.169	2.793	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.61	160	320	0.112	2.218		
		320	640	0.072	2.444		
		640	1500	0.040	3.206		
		1500	2500	0.022	3.309		
		2500	40	0.030	32.433		
		40	80	0.105	20.495		
		80	160	0.111	6.104		
		160	320	0.081	3.520		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5219 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

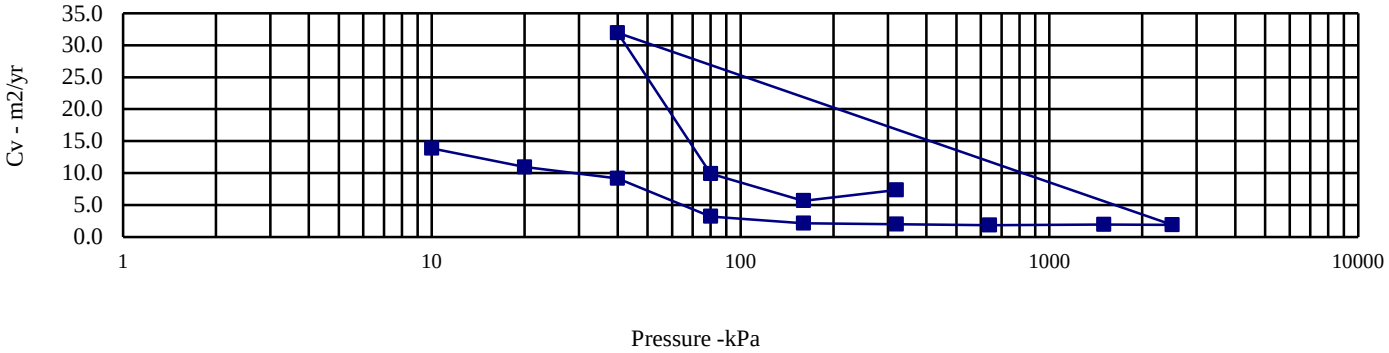
BS 1377: Part 5: 1990: Clause 3

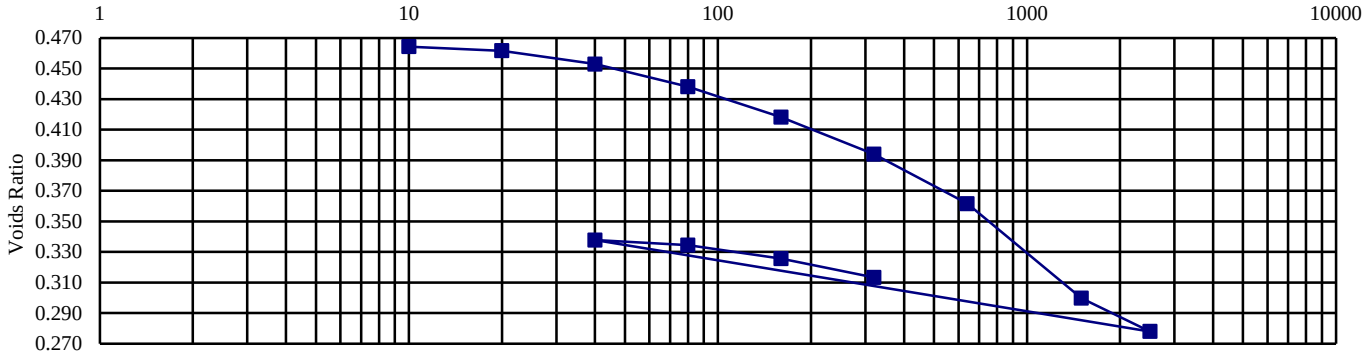
Hole Number: **CP04** **Top Depth (m):** **10.00**

Sample Number: **46** **Base Depth (m) :** **10.45**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.13	0	10	0.430	13.880	Method used to	
Dry Density (Mg/m3):	1.80	10	20	0.186	10.942	determine CV:	T90
Voids Ratio:	0.471	20	40	0.299	9.162	Nominal temperature	
Degree of saturation:	101.9	40	80	0.254	3.188	during test ' C:	20
Height (mm):	20.006	80	160	0.173	2.111	Remarks:	
Diameter (mm)	74.983	160	320	0.107	1.991	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.65	320	640	0.072	1.850		
		640	1500	0.053	1.943		
		1500	2500	0.017	1.874		
		2500	40	0.019	31.940		
		40	80	0.060	9.878		
		80	160	0.083	5.664		
		160	320	0.058	7.343		





ONE DIMENSIONAL CONSOLIDATION TEST

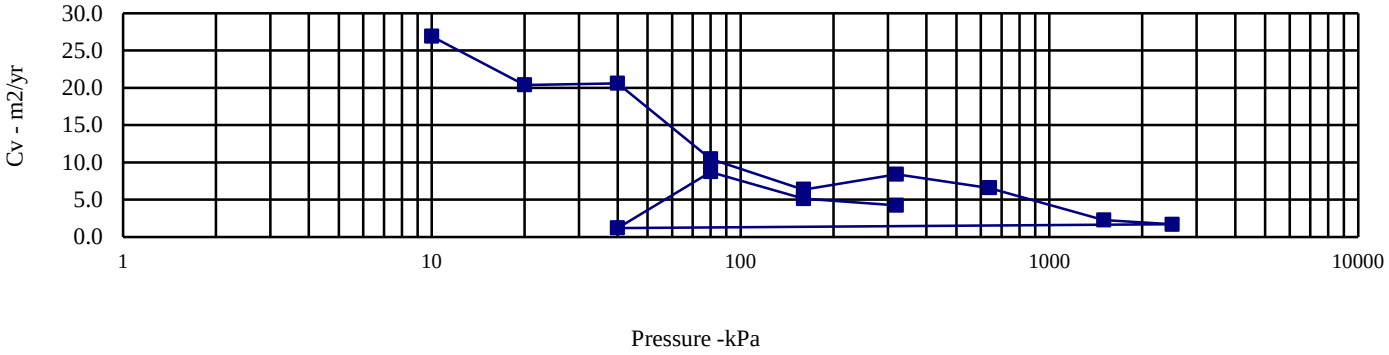
BS 1377: Part 5: 1990: Clause 3

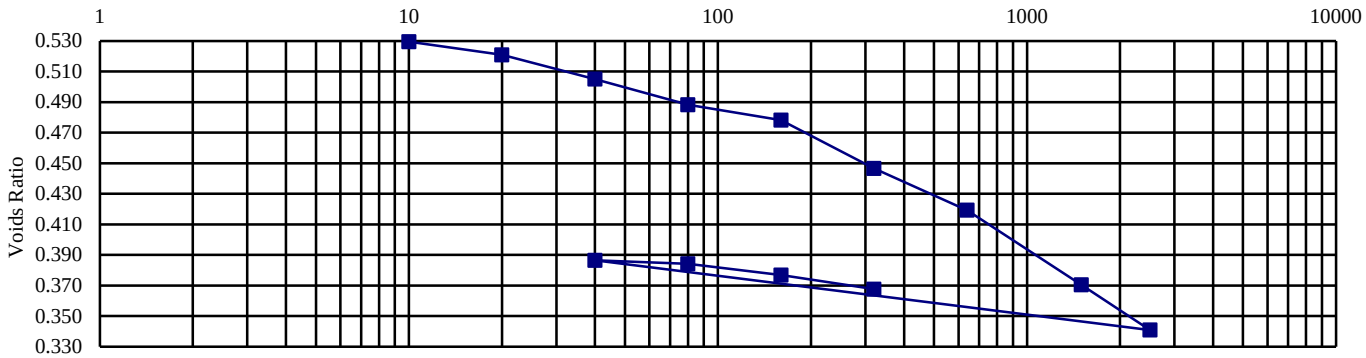
Hole Number: **CP05** **Top Depth (m):** **5.50**

Sample Number: **22** **Base Depth (m) :** **5.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.02	0	10	1.958	26.916	Method used to	
Dry Density (Mg/m3):	1.71	10	20	0.561	20.377	determine CV:	T90
Voids Ratio:	0.560	20	40	0.523	20.574	Nominal temperature	
Degree of saturation:	87.6	40	80	0.277	10.458	during test ' C:	20
Height (mm):	20.016	80	160	0.085	6.358	Remarks:	
Diameter (mm)	75.008	160	320	0.133	8.397	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.66	320	640	0.059	6.564		
		640	1500	0.040	2.265		
		1500	2500	0.021	1.680		
		2500	40	0.014	1.183		
		40	80	0.041	8.716		
		80	160	0.067	5.115		
		160	320	0.042	4.234		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5219
Client Ref:
D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

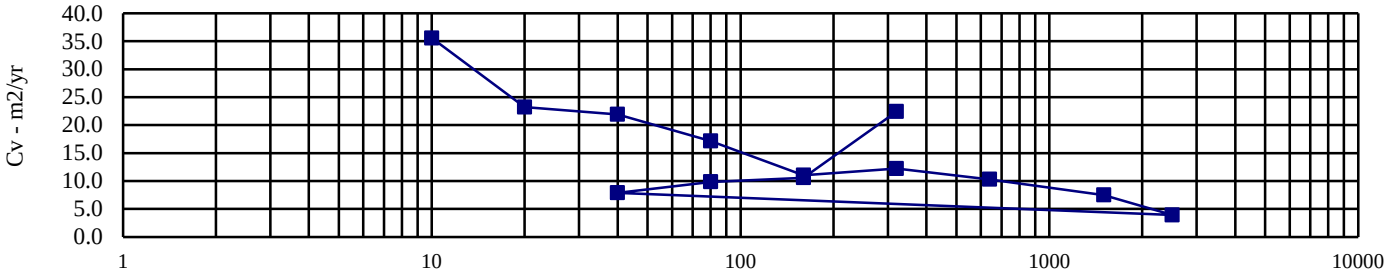
BS 1377: Part 5: 1990: Clause 3

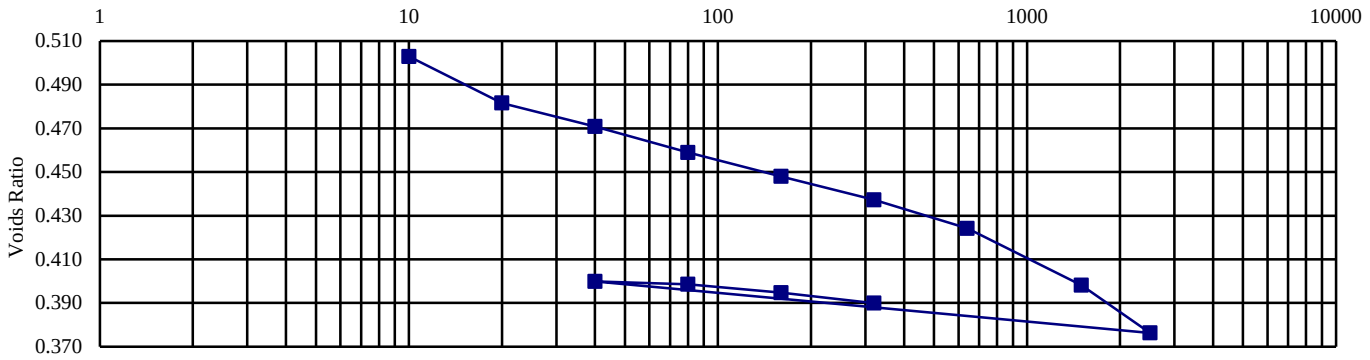
Hole Number: **CP05** **Top Depth (m):** **12.50**

Sample Number: **39** **Base Depth (m) :** **12.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.06	0	10	0.269	35.566	Method used to	
Dry Density (Mg/m3):	1.75	10	20	1.421	23.201	determine CV:	T90
Voids Ratio:	0.507	20	40	0.360	21.903	Nominal temperature	
Degree of saturation:	91.9	40	80	0.203	17.151	during test ' C:	20
Height (mm):	20.04	80	160	0.093	11.026	Remarks:	
Diameter (mm)	75.01	160	320	0.047	12.202	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.64	320	640	0.028	10.281		
		640	1500	0.021	7.474		
		1500	2500	0.016	3.907		
		2500	40	0.007	7.904		
		40	80	0.023	9.833		
		80	160	0.034	10.557		
		160	320	0.022	22.399		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5219
Client Ref:
D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth		11.50-11.95m	
	Description		See summary of soil descriptions.	
	Type		Undisturbed, vertical orientation.	
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.2
	Initial Sample Weight	W_0	(gr)	3718.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.07
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	600	700	900	
Initial Back Pressure	U_{bi}	(kPa)	500	500	500	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 5			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	18			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.75			
Initial Voids Ratio	e_i	.	0.520			
Initial Degree of Saturation	S_i	(%)	92			
B Value	B	.	0.95			

Final Conditions						
Final Moisture	ω_f	(%)	18			
Final Dry Density	ρ_{df}	(Mg/m3)	1.81			
Final Voids Ratio	e_f	.	0.472			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	3.49	4.40	10.58	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	232.6	367.6	695.8	
Minor Stress At Failure	σ_3'	(kPa)	78.9	157.8	374.9	
Major Stress At Failure	σ_1'	(kPa)	311.6	525.4	1070.7	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.947	3.330	2.856	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 11.50-11.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	CP03
		Sample	11.50-11.95m
Client	Socotec	Depth	11.50-11.95m

UKAS TESTING 4043

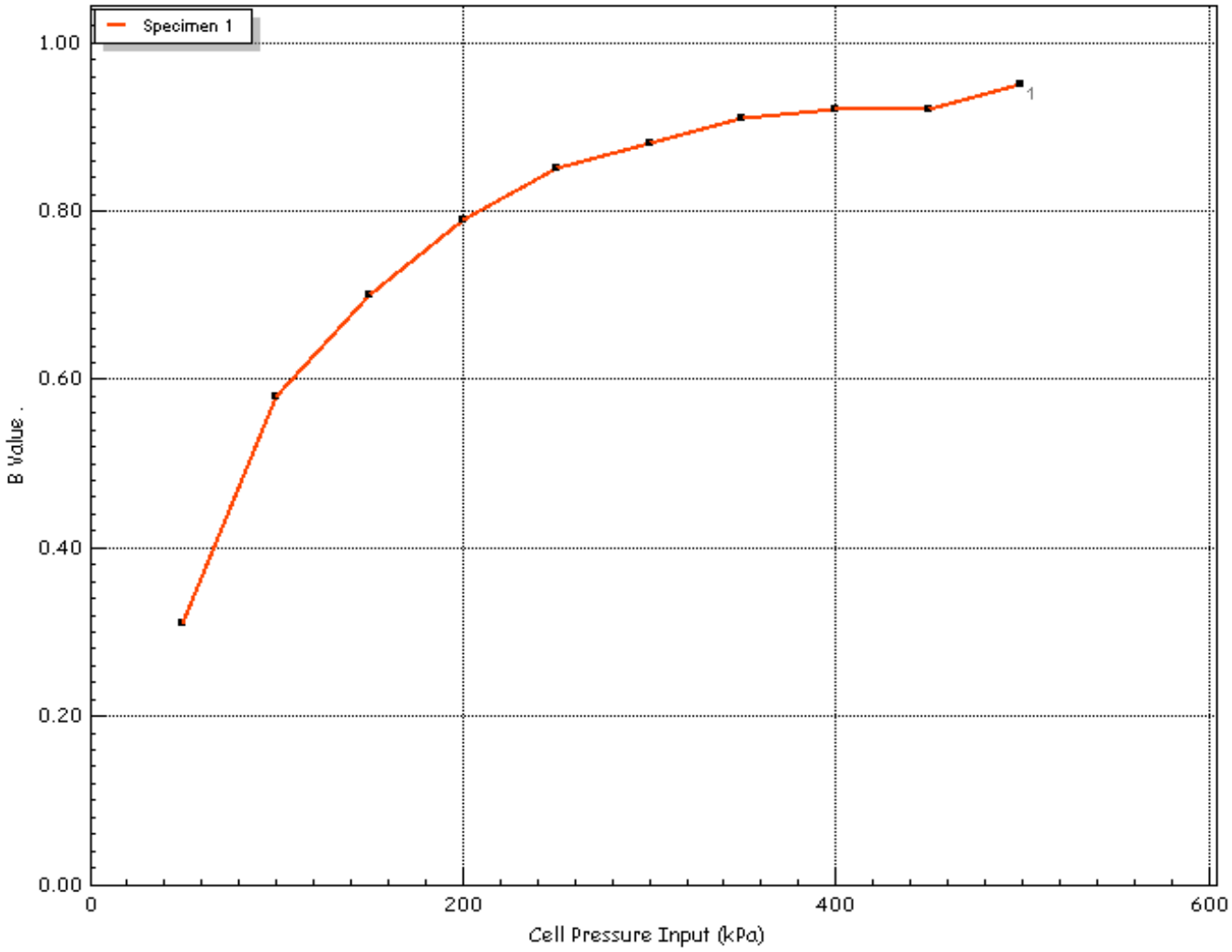
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	499
Pore Water Pressure Input	u pwp	(kPa)	487
B Value	B	.	0.95



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 11.50-11.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	CP03
		Sample	11.50-11.95m
Client	Socotec	Depth	11.50-11.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

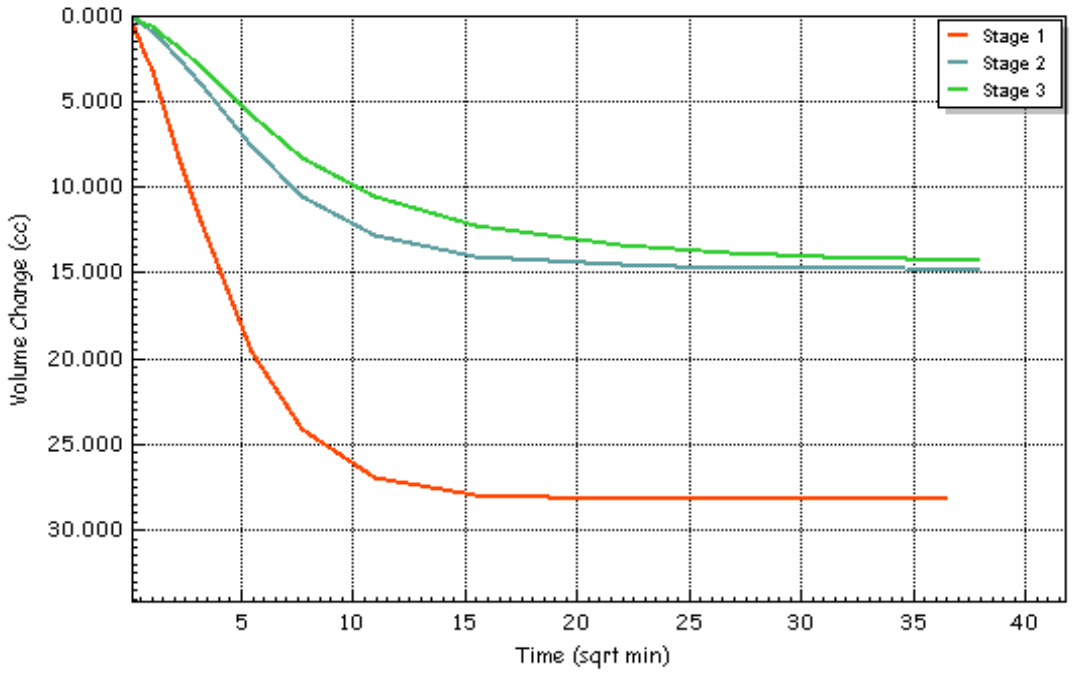
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	600	700	900
Initial Back Pressure	u_{bi}	(kPa)	500	500	500
Pore Water Pressure Input	u_{pwp}	(kPa)	585	626	744
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.57	2.39	3.18
Corrected Length	L_C	(mm)	209.9	201.0	195.5
Corrected Area	A_C	(cm2)	84.39	86.01	86.94
Corrected Volume	V_C	(cc)	1771.139	1756.321	1742.068
T100 Time to Failure	t_{100}	(min)	50.32	102.76	143.57
Consolidation	c_v	(m2/year)	4.456	2.182	1.562
Compressibility	m_v	(m2/MN)	0.185	0.190	0.131
Test Time	t_F	(h:m:s)	02:00:00	03:04:58	04:18:25
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08746	0.08746	0.08746

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 11.50-11.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	CP03
		Sample	11.50-11.95m
Client	Socotec	Depth	11.50-11.95m

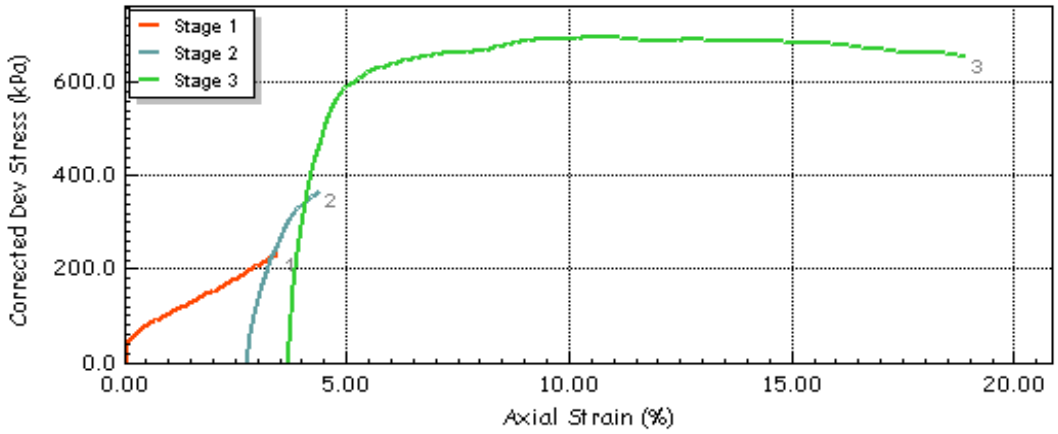
UKAS TESTING 4043

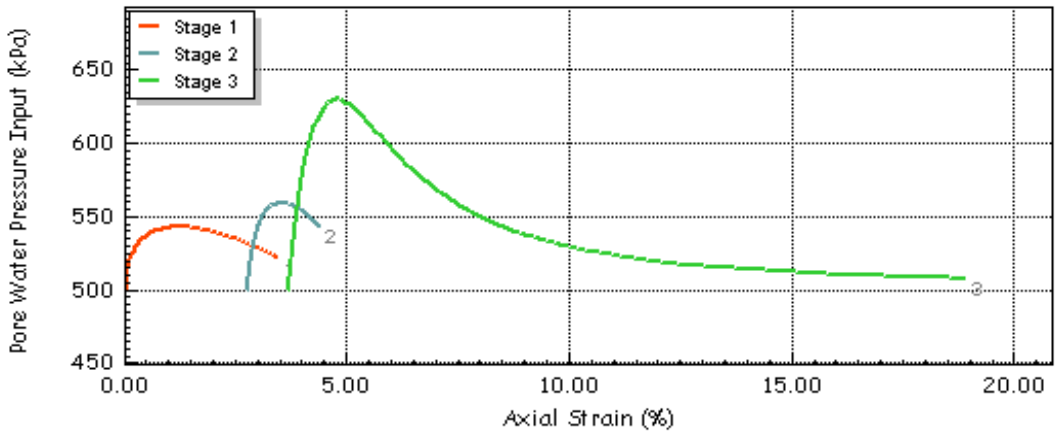
PSL PROFESSIONAL SOILS LABORATORY

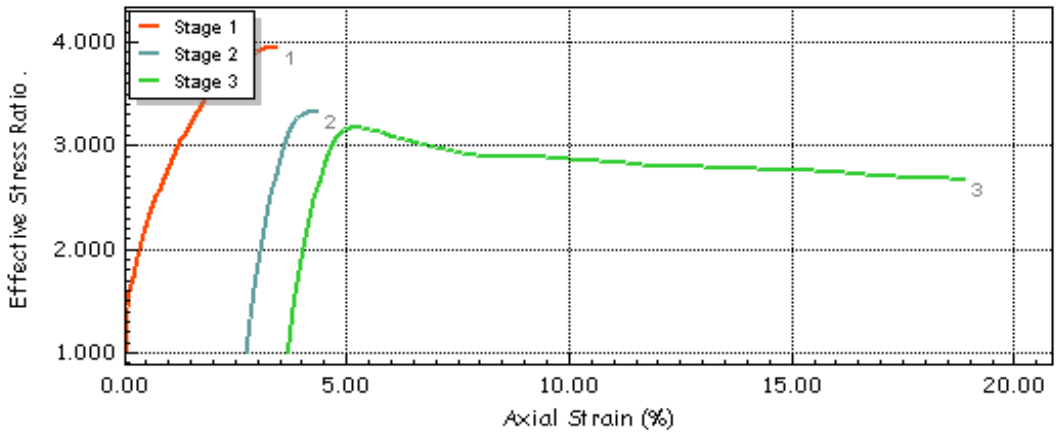
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 11.50-11.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	CP03
		Sample	11.50-11.95m
Client	Socotec	Depth	11.50-11.95m

UKAS TESTING 4043

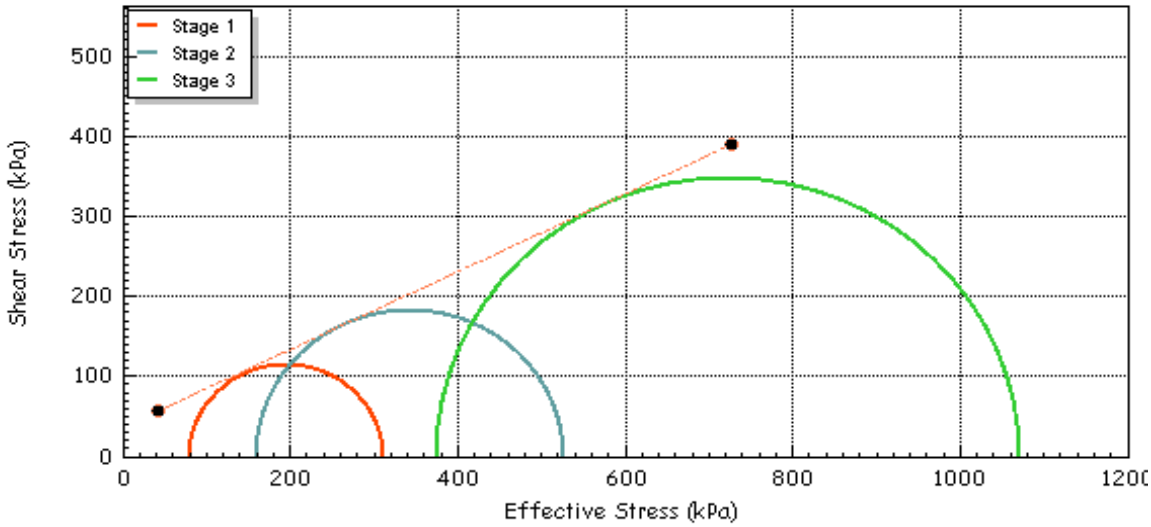
PSL PROFESSIONAL SOILS LABORATORY

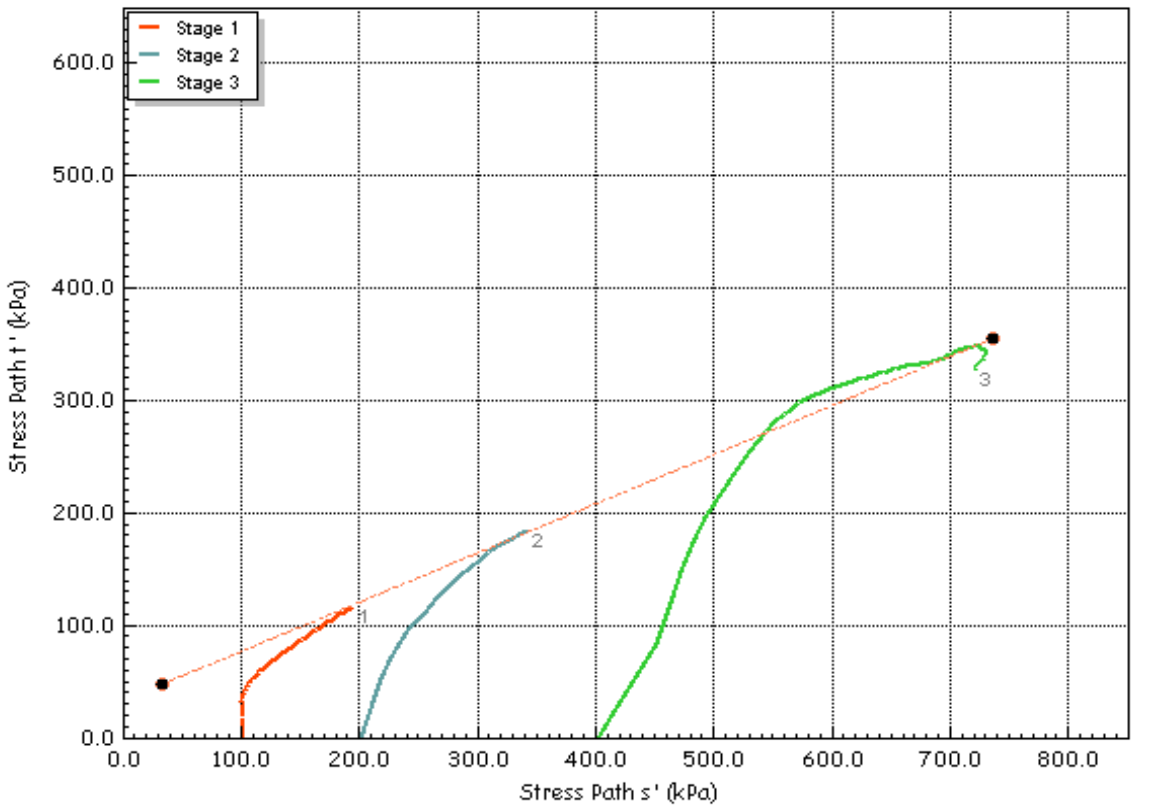
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	37.84	Effective Cohesion	c'	(kPa)	37.84
Effective Friction	ϕ'	(deg)	25.9	Effective Friction	ϕ'	(deg)	25.9





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP03 11.50-11.95m UT59
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	CP03
		Sample	11.50-11.95m
Client	Socotec	Depth	11.50-11.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			3.50-3.95m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.8
	Initial Sample Weight	W_0	(gr)	3812.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.09
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	765	825	950	
Initial Back Pressure	U_{bi}	(kPa)	700	700	700	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	18			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.78			
Initial Voids Ratio	e_i	.	0.498			
Initial Degree of Saturation	S_i	(%)	96			
B Value	B	.	0.95			

Final Conditions						
Final Moisture	ω_f	(%)	17			
Final Dry Density	ρ_{df}	(Mg/m3)	1.85			
Final Voids Ratio	e_f	.	0.440			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	3.06	5.24	20.00	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	148.5	206.7	443.3	
Minor Stress At Failure	σ_3'	(kPa)	48.0	93.0	276.0	
Major Stress At Failure	σ_1'	(kPa)	196.5	299.7	719.3	
Principal Stress Ratio At Failure	σ_1'/σ_3'		4.095	3.223	2.606	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP05 3.50-3.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP05
		Sample	3.50-3.95m
Client	Socotec	Depth	3.50-3.95m

UKAS TESTING 4043

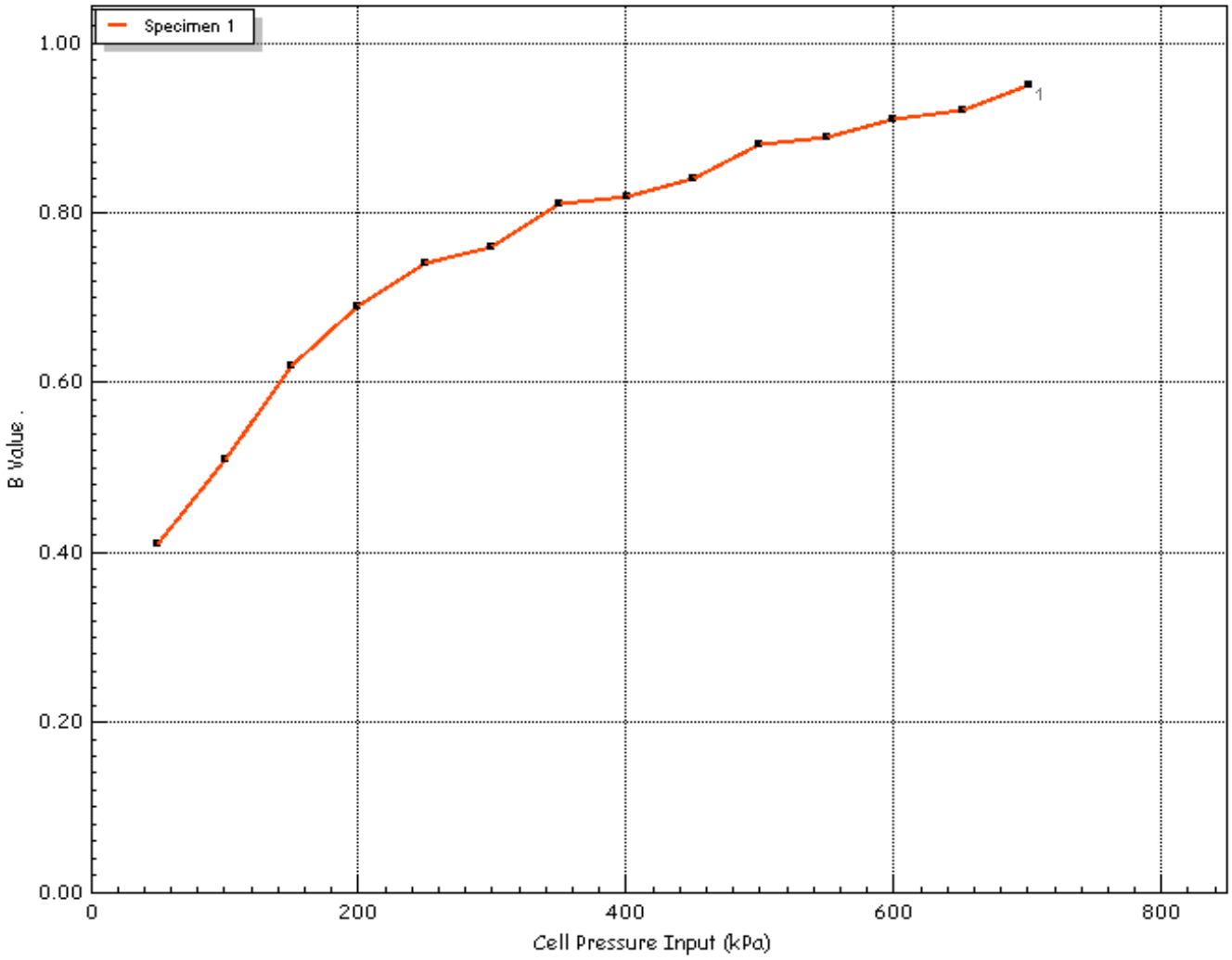
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	701
Pore Water Pressure Input	u pwp	(kPa)	650
B Value	B	.	0.95



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP05 3.50-3.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP05
		Sample	3.50-3.95m
Client	Socotec	Depth	3.50-3.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

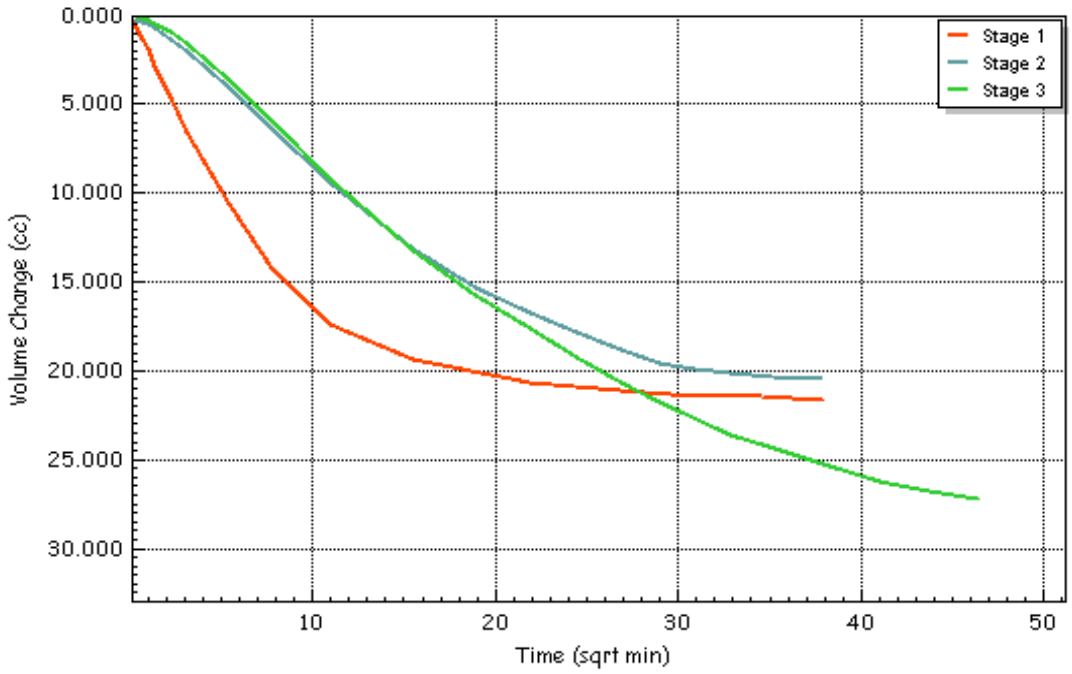
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	766	825	950
Initial Back Pressure	u_{bi}	(kPa)	701	700	700
Pore Water Pressure Input	u_{pwp}	(kPa)	710	759	797
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.19	2.32	3.81
Corrected Length	L_C	(mm)	210.2	202.2	193.6
Corrected Area	A_C	(cm2)	85.58	86.90	88.32
Corrected Volume	V_C	(cc)	1798.461	1777.960	1750.737
T100 Time to Failure	t_{100}	(min)	107.72	483.38	799.53
Consolidation	c_v	(m2/year)	2.105	0.469	0.284
Compressibility	m_v	(m2/MN)	1.251	0.392	0.394
Test Time	t_F	(h:m:s)	03:13:53	14:30:05	23:59:09
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.05420	0.05420	0.05420

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP05 3.50-3.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP05
		Sample	3.50-3.95m
Client	Socotec	Depth	3.50-3.95m

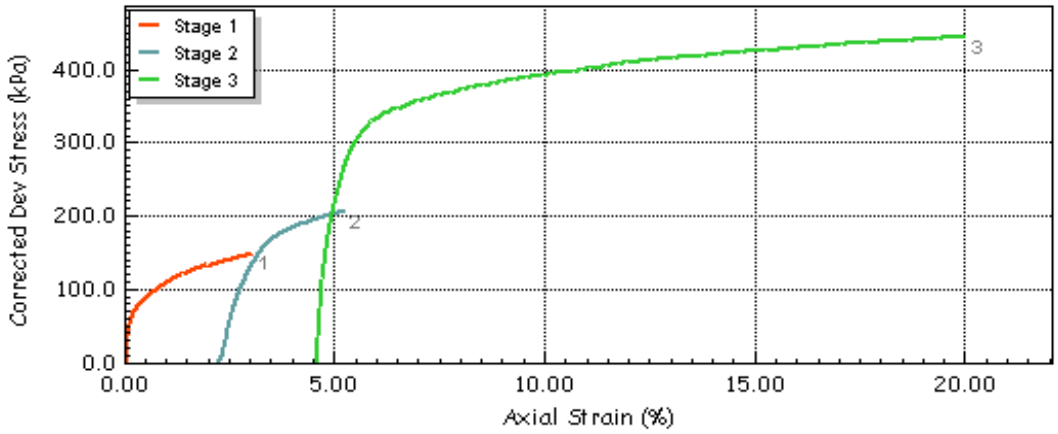
UKAS TESTING 4043

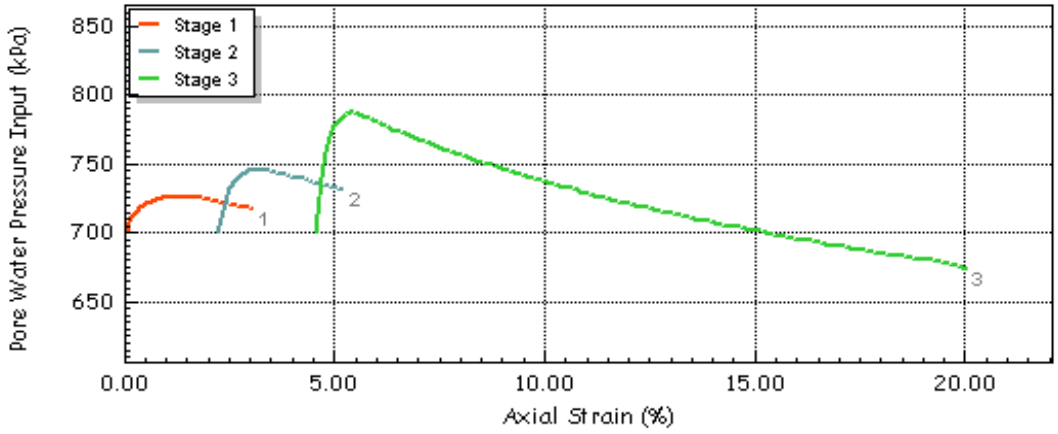
PSL PROFESSIONAL SOILS LABORATORY

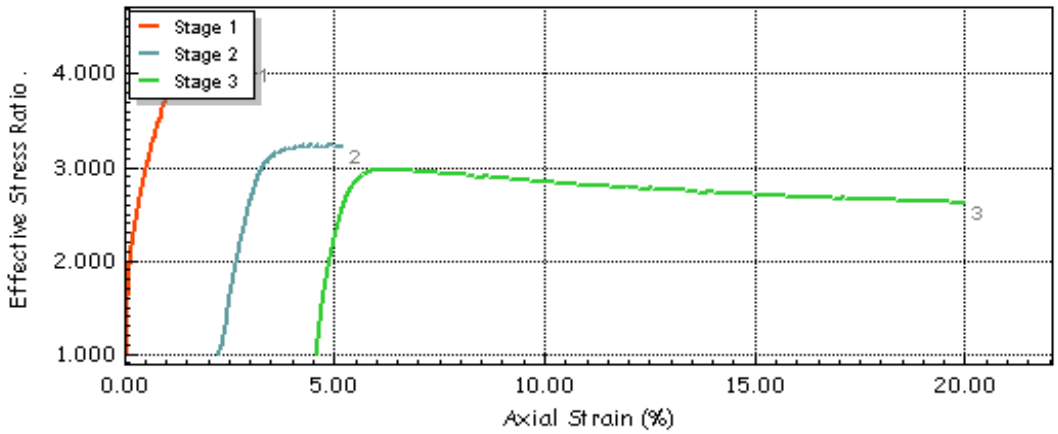
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP05 3.50-3.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP05
		Sample	3.50-3.95m
Client	Socotec	Depth	3.50-3.95m

UKAS TESTING 4043

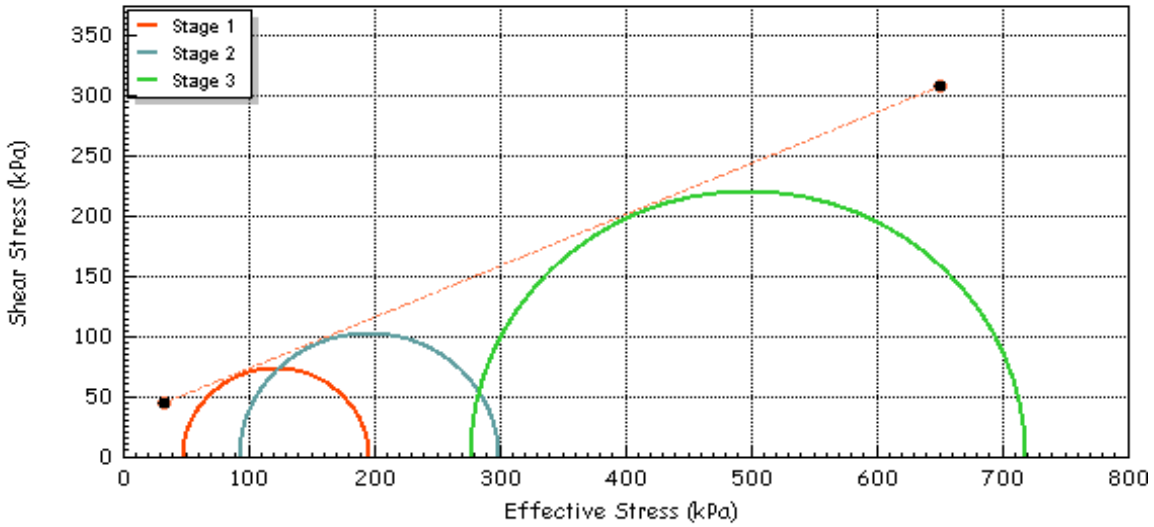
PSL PROFESSIONAL SOILS LABORATORY

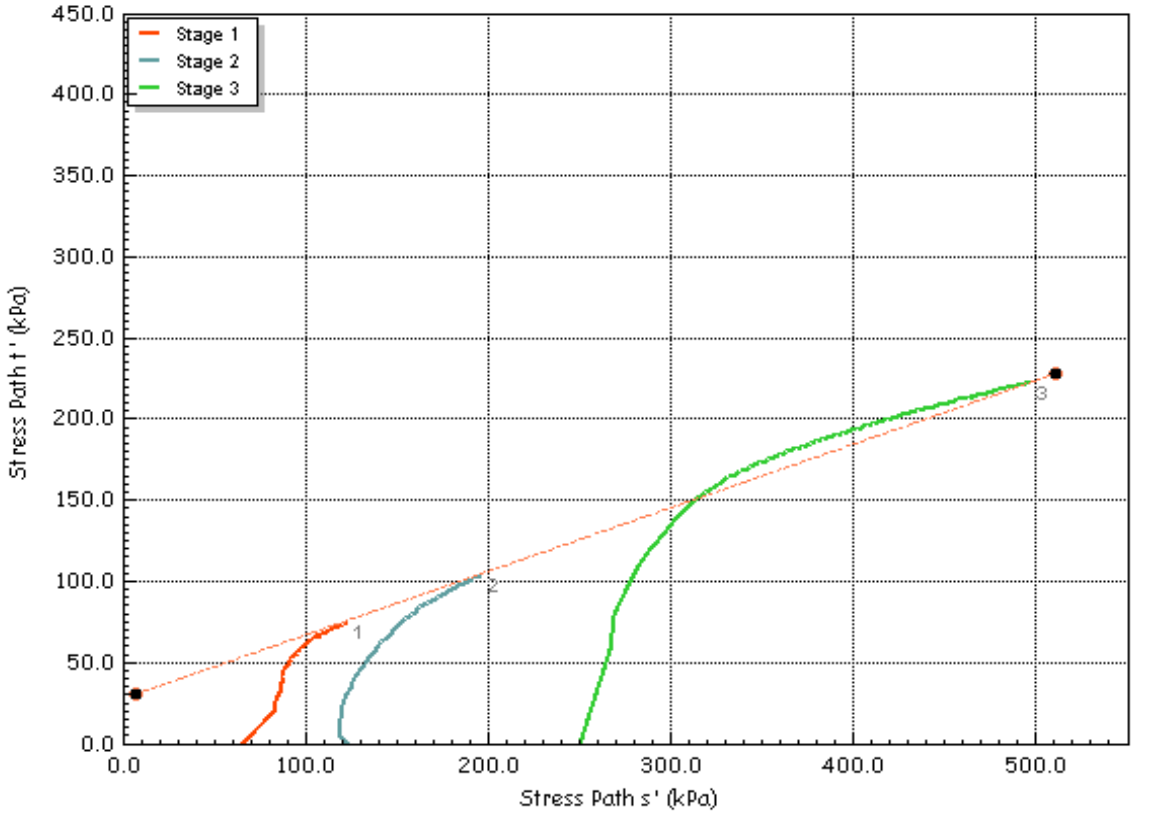
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	30.00	Effective Cohesion	c'	(kPa)	30.00
Effective Friction	ϕ'	(deg)	23.1	Effective Friction	ϕ'	(deg)	23.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP05 3.50-3.95m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP05
		Sample	3.50-3.95m
Client	Socotec	Depth	3.50-3.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-16534 *Issued:* 26-Aug-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-16534

Client Reference PSL22/5219

Order No (not supplied)

Contract Title Stansted Terminal 2 (ST2)- Ground Investigation

Description 4 Soil samples.

Date Received 23-Aug-22

Date Started 23-Aug-22

Date Completed 26-Aug-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-16534
Client Ref PSL22/5219
Contract Title Stansted Terminal 2 (ST2)- Ground Investigation

			Lab No	2049284	2049285	2049286	2049287
			.Sample ID	CP03	CP03	CP04	CP04
			Depth	1.40	6.00	3.00	7.00
			Other ID	D11	D35	D17	D35
			Sample Type	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10
Inorganics							
pH	DETSC 2008#		pH	8.0	7.7	7.5	8.3
Organic matter	DETSC 2002#	0.1	%			2.3	
Chloride Aqueous Extract	DETSC 2055	1	mg/l	10	11	3.3	7.1
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	24	< 1.0	4.4	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	110	100	230
Sulphur as S, Total	DETSC 2320	0.01	%	0.06	0.08	0.09	0.29
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.09	0.06	0.06	0.11

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-16534
Client Ref PSL22/5219
Contract Stansted Terminal 2 (ST2)- Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2049284	CP03 1.40 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2049285	CP03 6.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2049286	CP04 3.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2049287	CP04 7.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/5374

Report Date: 16 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 17/8/2022
Date Commenced: 17/8/2022
Date Completed: 5/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC03	102	D	1.80	1.80	Brown gravelly sandy CLAY.
RC03	107	D	3.20	3.20	Brown slightly gravelly sandy CLAY.
RC03	111	C	4.15	4.45	Brown gravelly sandy CLAY.
RC03	113	D	4.60	4.60	Brown slightly gravelly very sandy CLAY.
RC03	115	C	5.10	5.40	Brown very gravelly very sandy CLAY.
RC03	121	D	6.90	6.90	Brown gravelly very sandy CLAY.
RC03	122	C	7.05	7.35	Very stiff brown gravelly very sandy CLAY.
RC03	128	D	8.90	8.90	Brown gravelly very sandy CLAY.
RC03	129	C	9.10	9.40	Brown very gravelly very sandy CLAY.
RC03	132	C	10.10	10.40	Very stiff brown mottled grey gravelly very sandy CLAY.
RC03	137	D	11.90	11.90	Brown gravelly very sandy CLAY.
RC03	141	C	13.10	13.40	Brown very gravelly very sandy CLAY.
RC03	150	C	16.10	16.40	Stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.
RC03	156	C	18.10	18.38	Very stiff brown mottled grey gravelly sandy CLAY. Gravel is chalk.
RC03	158	D	18.90	18.90	Brown very gravelly very sandy CLAY.
RC03	165	D	20.90	20.90	Brown gravelly sandy CLAY.
RC03	170	C	22.10	22.40	Very stiff brown slightly sandy CLAY.
RC03	171	D	22.40	22.40	Brown slightly gravelly sandy CLAY.
RC03	179	C	25.10	25.40	Very stiff brown slightly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC03	180	D	25.40	25.40	Brown slightly gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
RC03	102	D	1.80	1.80	19			36	18	18	88	Intermediate Plasticity CI
RC03	107	D	3.20	3.20	20			37	18	19	90	Intermediate Plasticity CI
RC03	113	D	4.60	4.60	14			34	17	17	90	Low Plasticity CL
RC03	115	C	5.10	5.40			2.65					
RC03	121	D	6.90	6.90	14			30	15	15	82	Low Plasticity CL
RC03	128	D	8.90	8.90	16			32	16	16	88	Low Plasticity CL
RC03	129	C	9.10	9.40			2.66					
RC03	137	D	11.90	11.90	15			33	16	17	85	Low Plasticity CL
RC03	141	C	13.10	13.40			2.65					
RC03	158	D	18.90	18.90	18			34	17	17	78	Low Plasticity CL
RC03	165	D	20.90	20.90	16			35	17	18	85	Intermediate Plasticity CI
RC03	171	D	22.40	22.40	24			46	22	24	97	Intermediate Plasticity CI
RC03	180	D	25.40	25.40	24			47	22	25	97	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

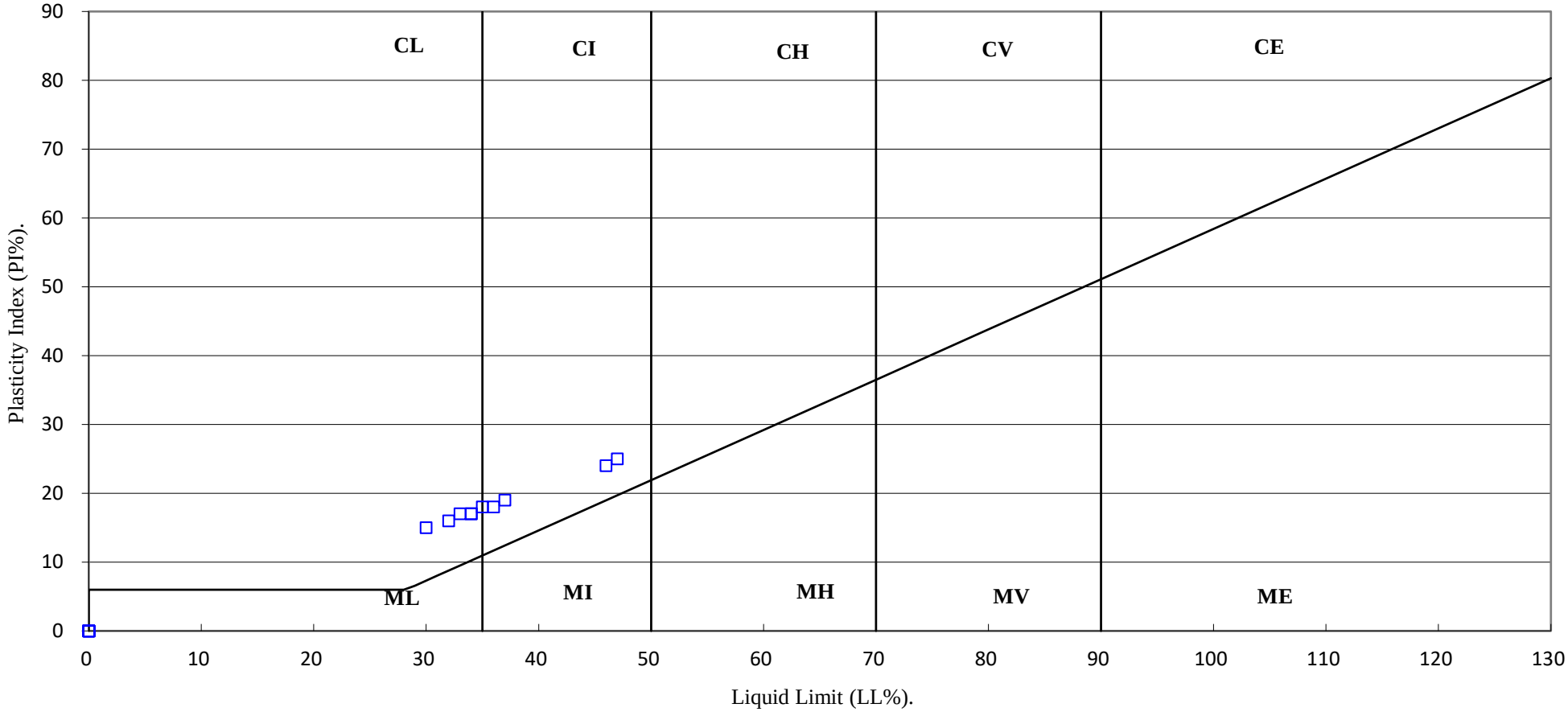
Contract No:

PSL22/5374

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



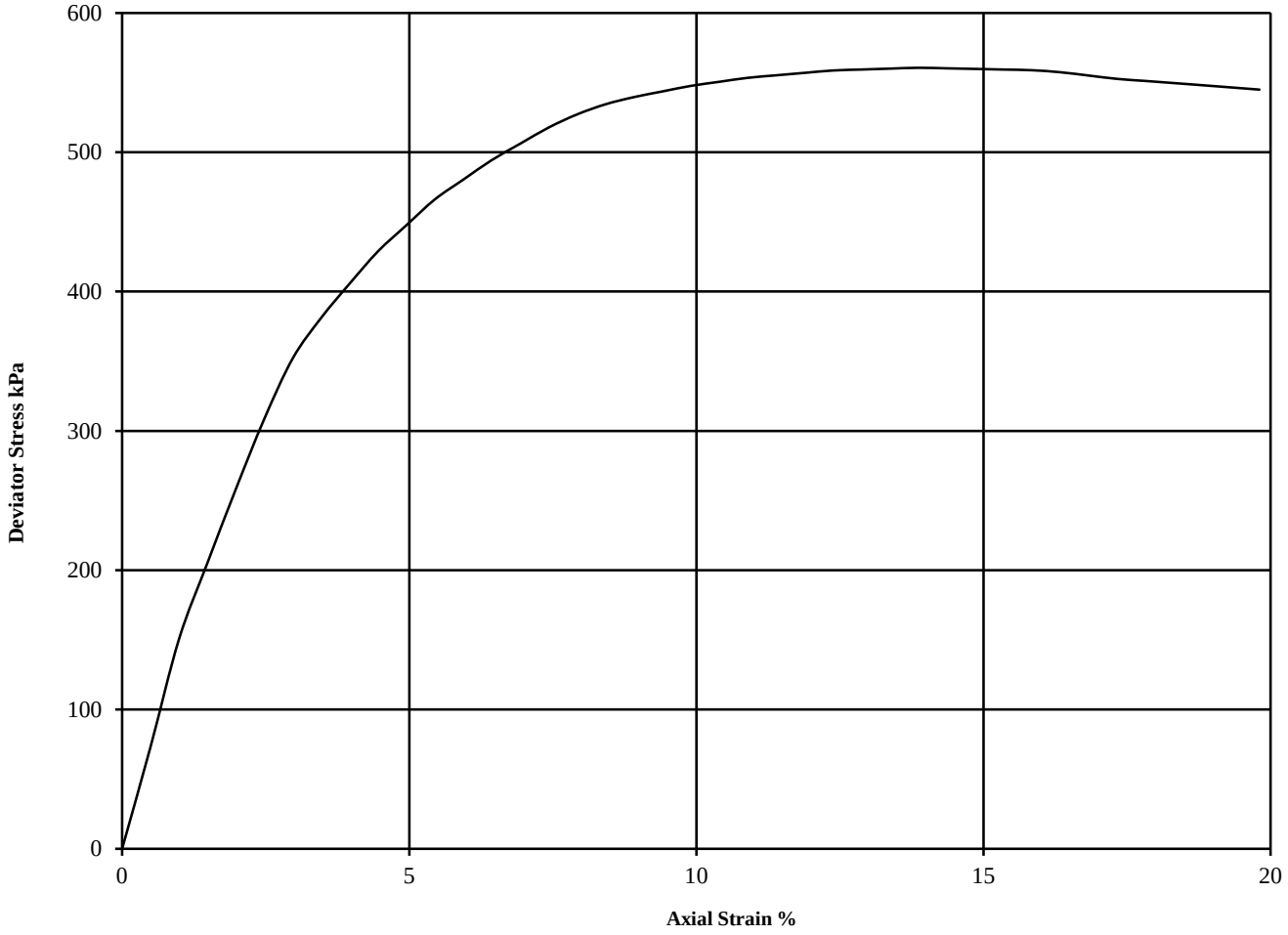
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**7.05**
Sample Number:	**122**	**Base Depth (m):**	**7.35**
Sample Type	**C**		



Diameter (mm):		102	Height (mm):		206	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	15	2.20	1.92	140	561	280	13.9	Plastic	See summary of soil descriptions

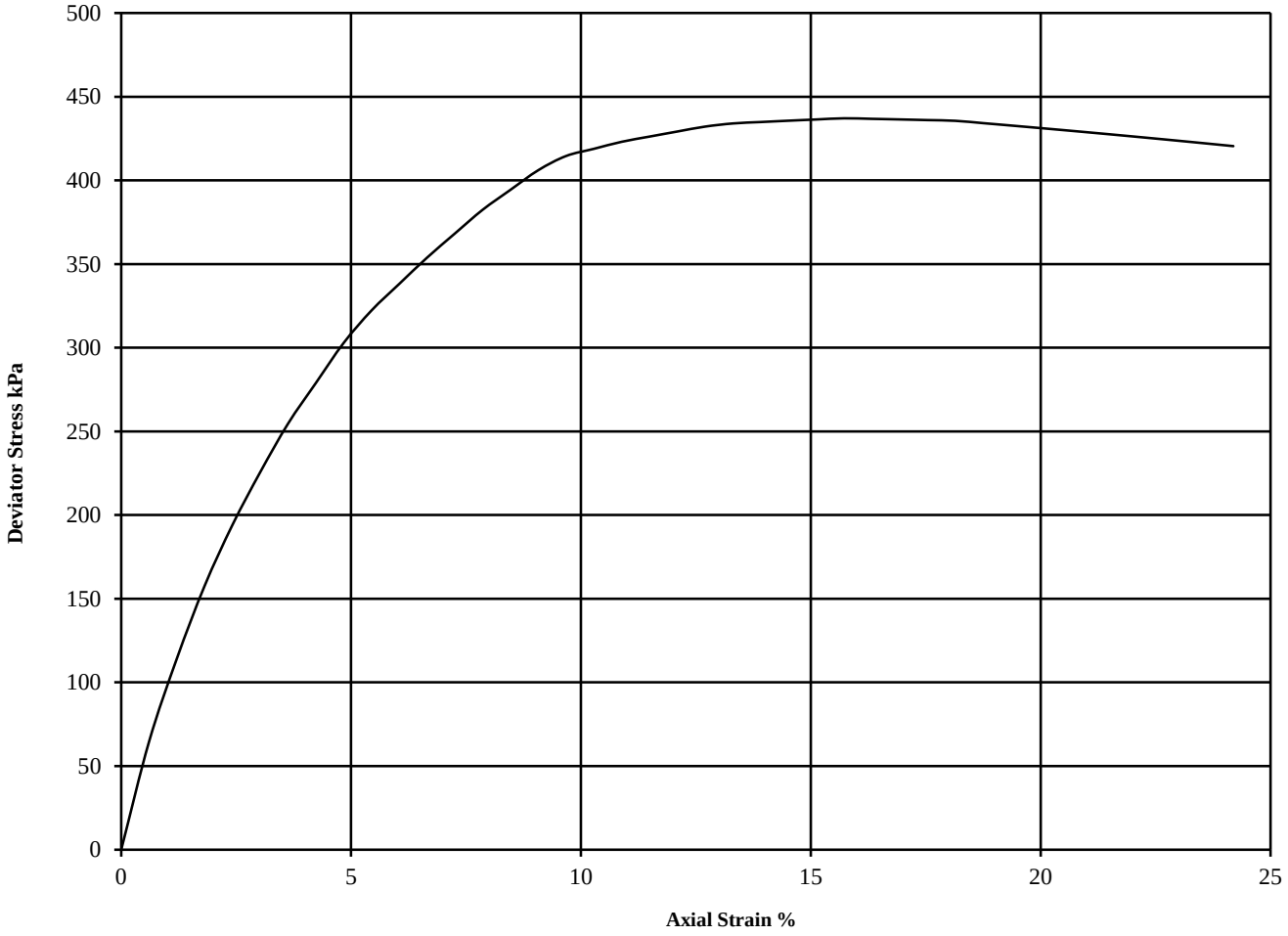
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**10.10**
Sample Number:	**132**	**Base Depth (m):**	**10.40**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		167	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	16	2.13	1.84	180	437	219	15.7	Plastic	See summary of soil descriptions

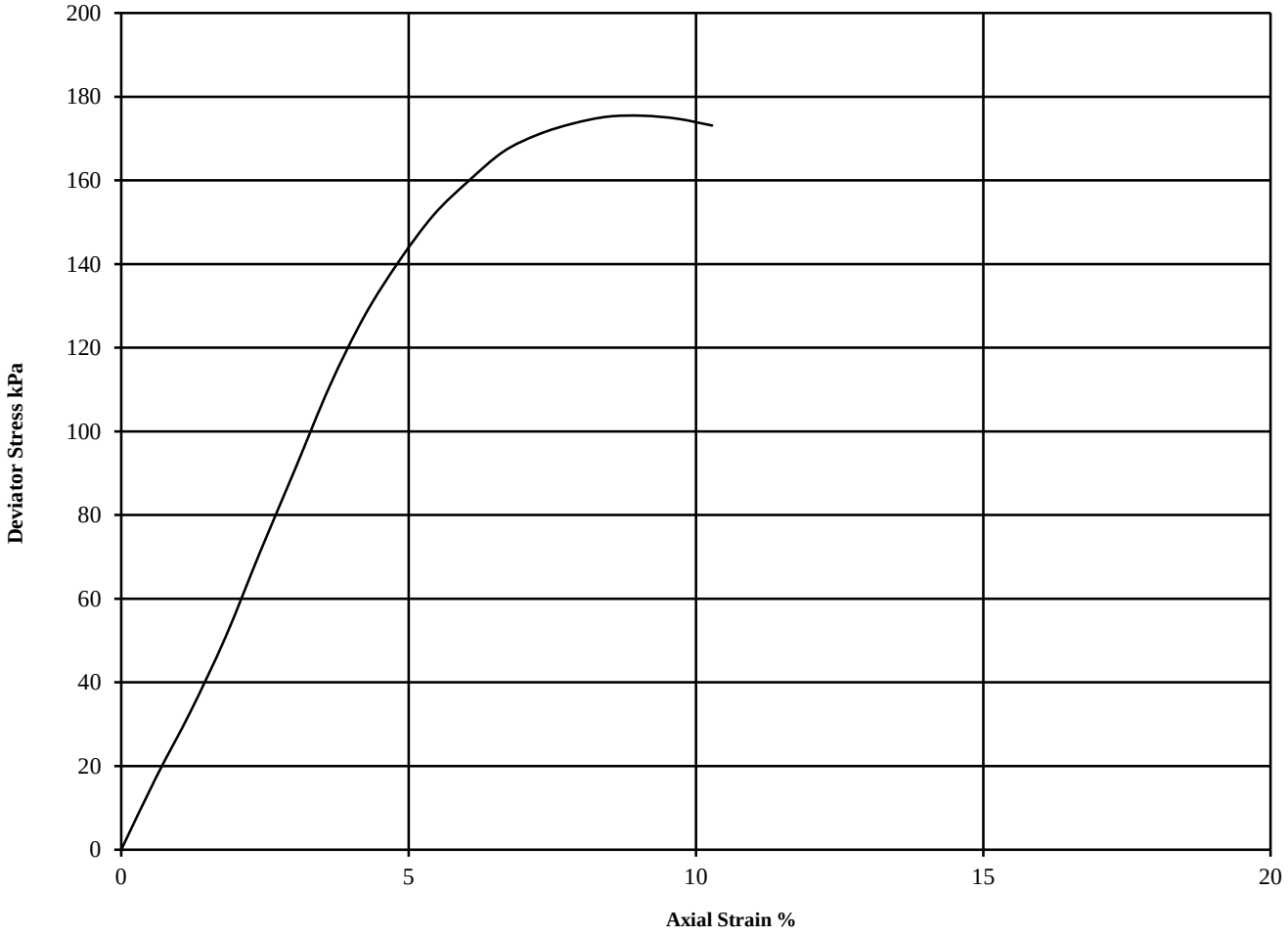
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**16.10**
Sample Number:	**150**	**Base Depth (m):**	**16.40**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		167	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	18	2.09	1.78	240	175	88	9.1	Brittle	See summary of soil descriptions

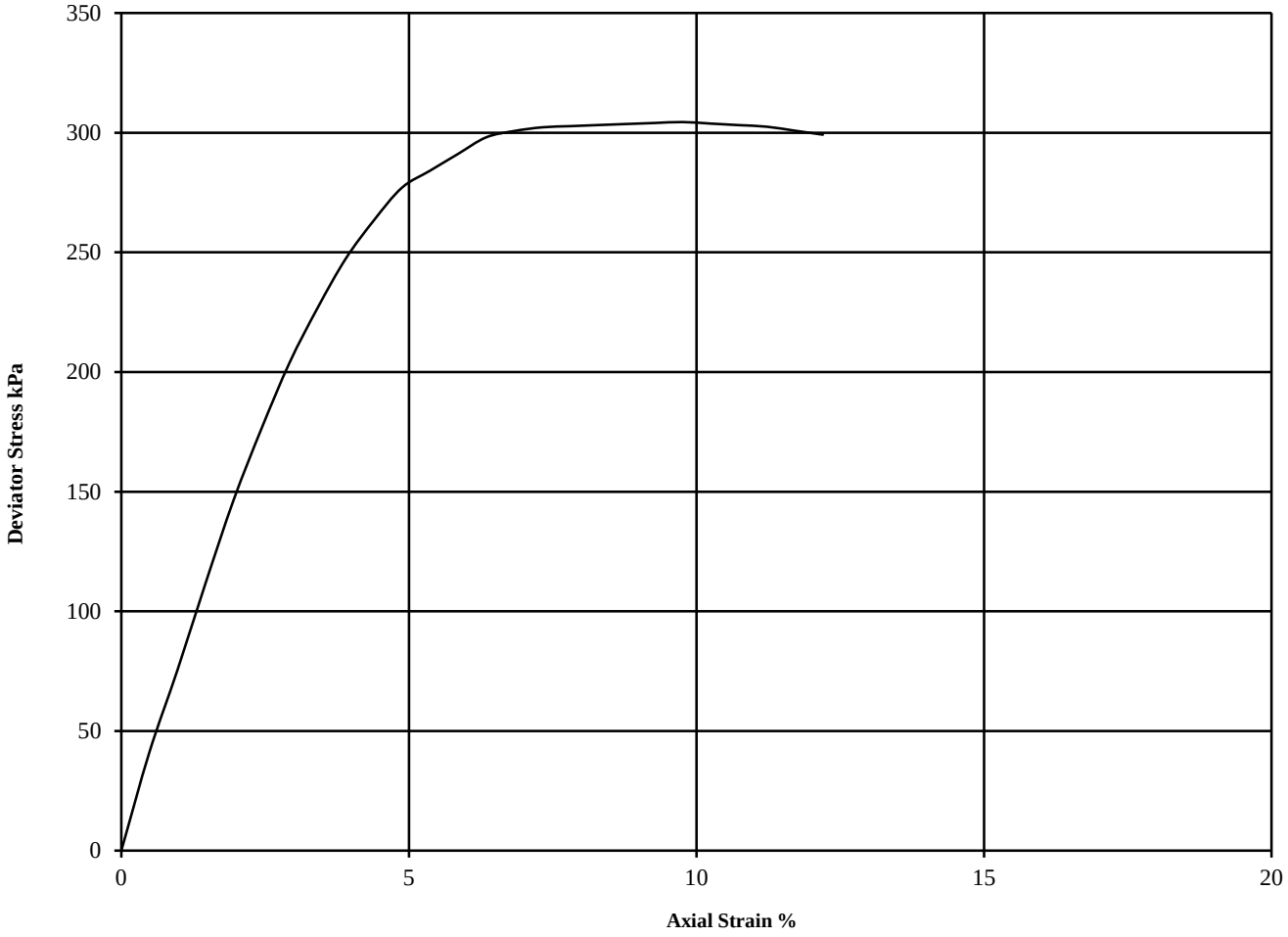
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**18.10**
Sample Number:	**156**	**Base Depth (m):**	**18.38**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	18	2.12	1.79	260	304	152	9.8	Plastic	See summary of soil descriptions

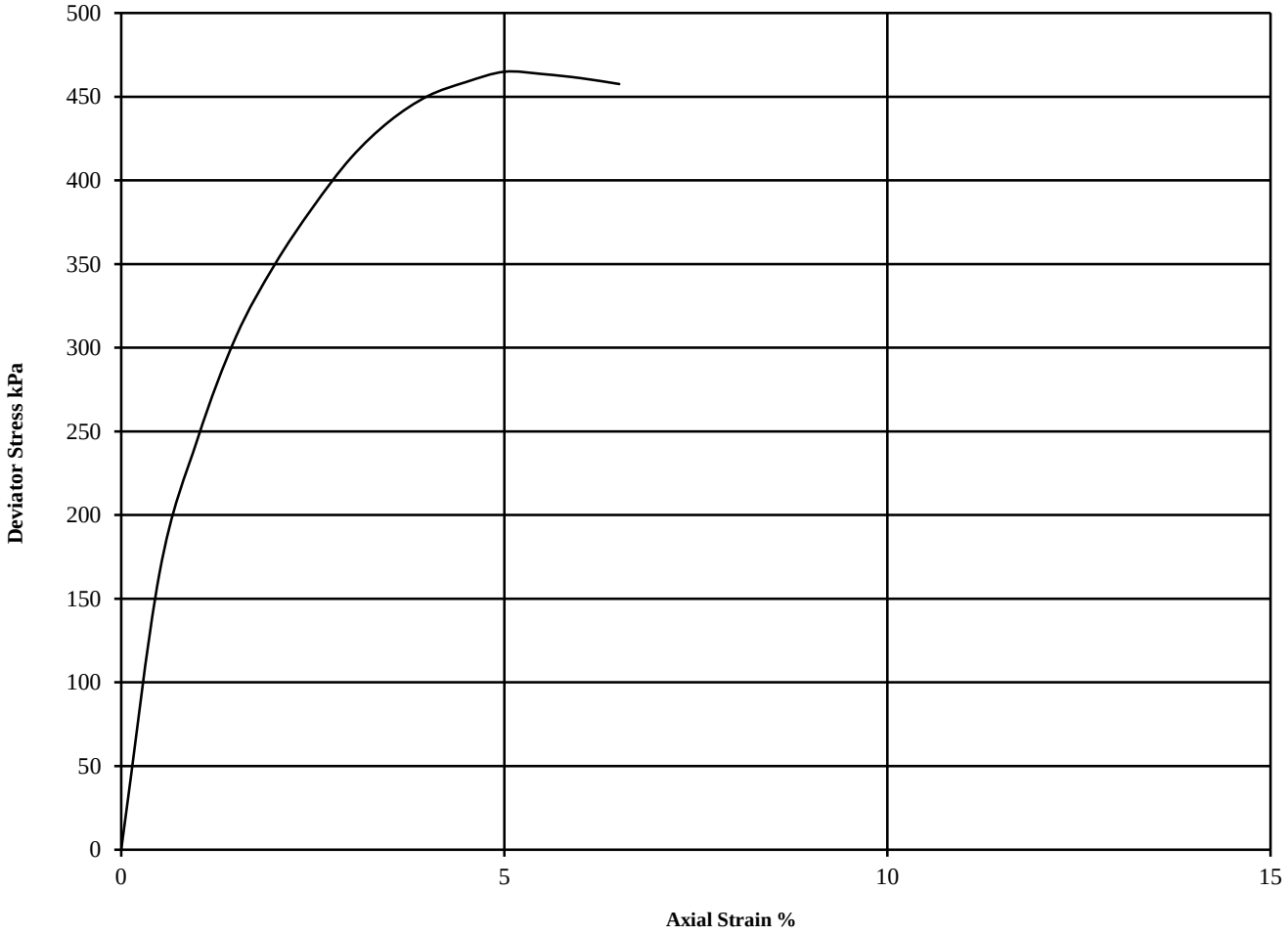
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**22.10**
Sample Number:	**170**	**Base Depth (m):**	**22.40**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		202	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.37
1	24	2.04	1.64	300	465	232	5.0	Brittle	See summary of soil descriptions

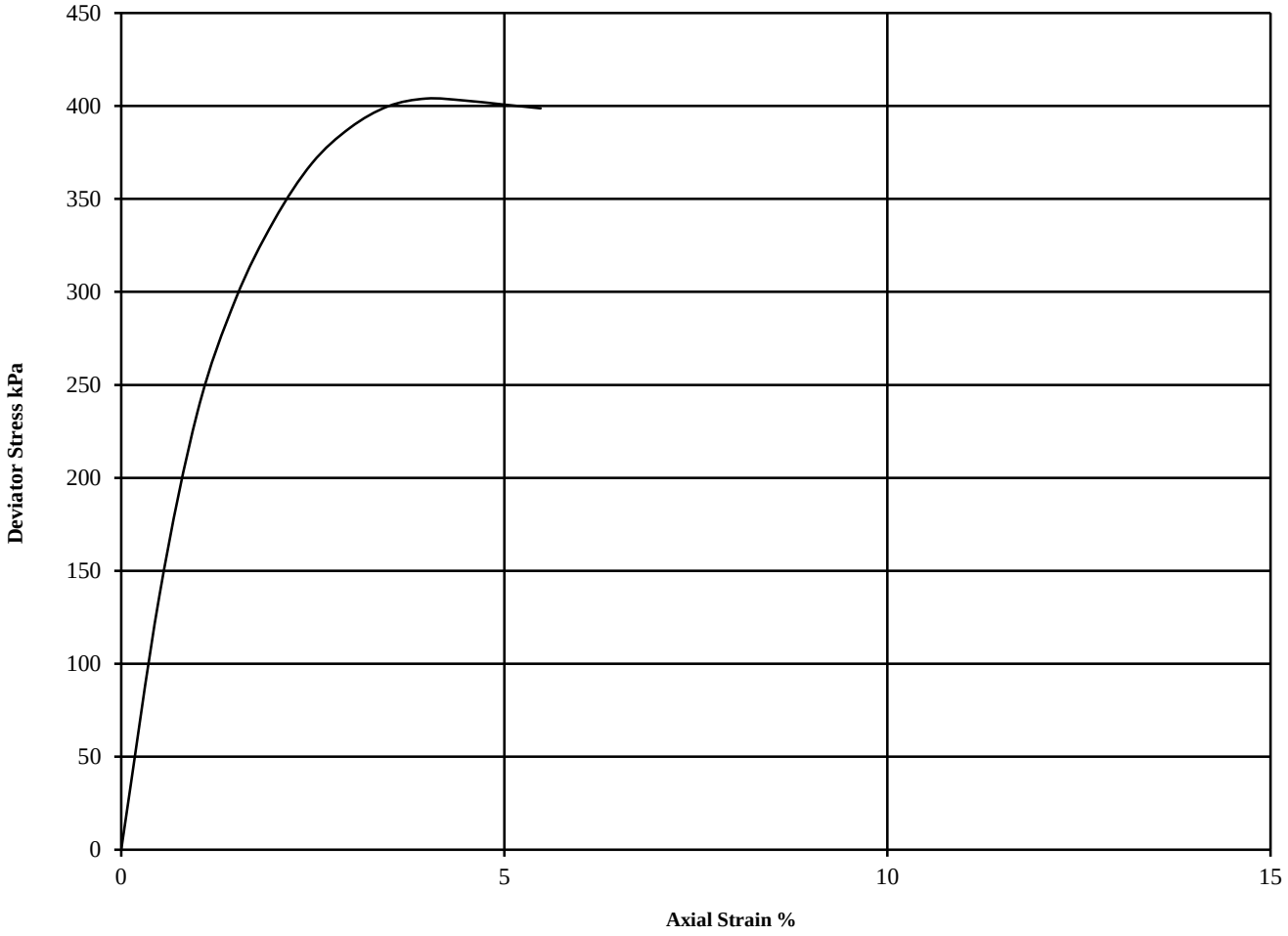
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC03**	**Top Depth (m):**	**25.10**
Sample Number:	**179**	**Base Depth (m):**	**25.40**
Sample Type	**C**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36 See summary of soil descriptions
1	24	1.89	1.52	330	404	202	4.0	Brittle	

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5374 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

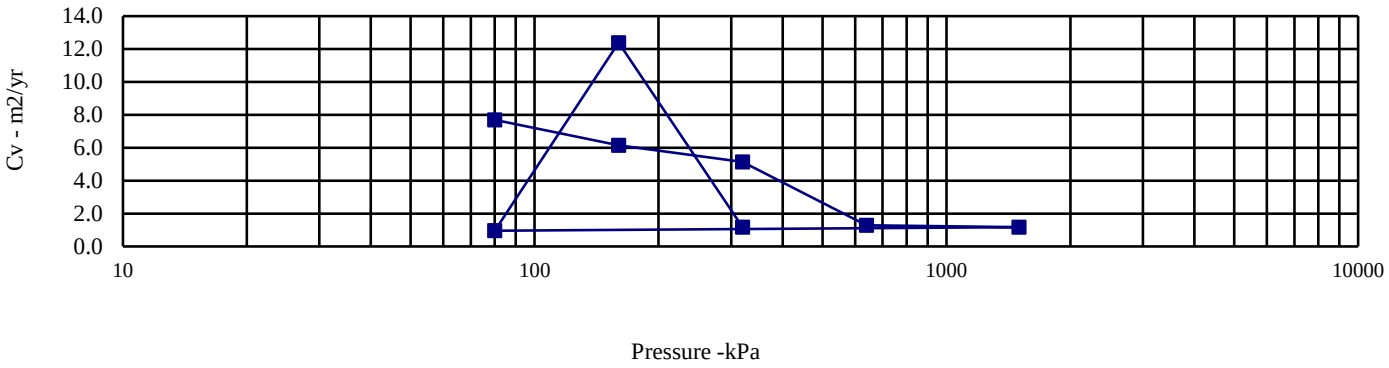
BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC03** **Top Depth (m):** **5.10**

Sample Number: **115** **Base Depth (m) :** **5.40**

Sample Type: **C**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	16						
Bulk Density (Mg/m3):	2.14	Swelling	Swelling	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.83	Swelling	Swelling	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.444	Swelling	Swelling	Swelling	Swelling	Nominal temperature	
Degree of saturation:	97.7	40	80	0.122	7.699	during test ' C:	20
Height (mm):	20.03	80	160	0.147	6.154	Remarks:	
Diameter (mm)	75.01	160	320	0.094	5.142	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.65	320	640	0.059	1.291		
		640	1500	0.034	1.179		
		1500	80	0.018	0.955		
		80	160	0.036	12.390		
		160	320	0.042	1.181		



ONE DIMENSIONAL CONSOLIDATION TEST

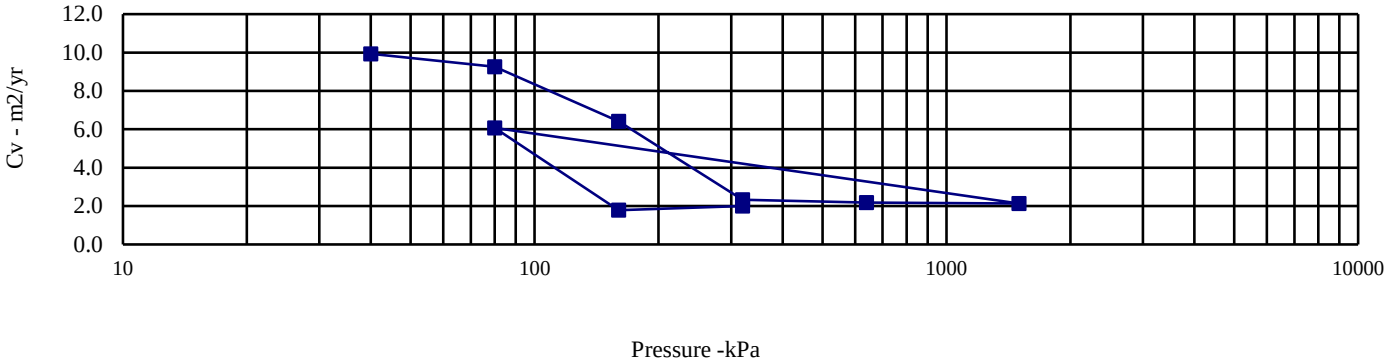
BS 1377: Part 5: 1990: Clause 3

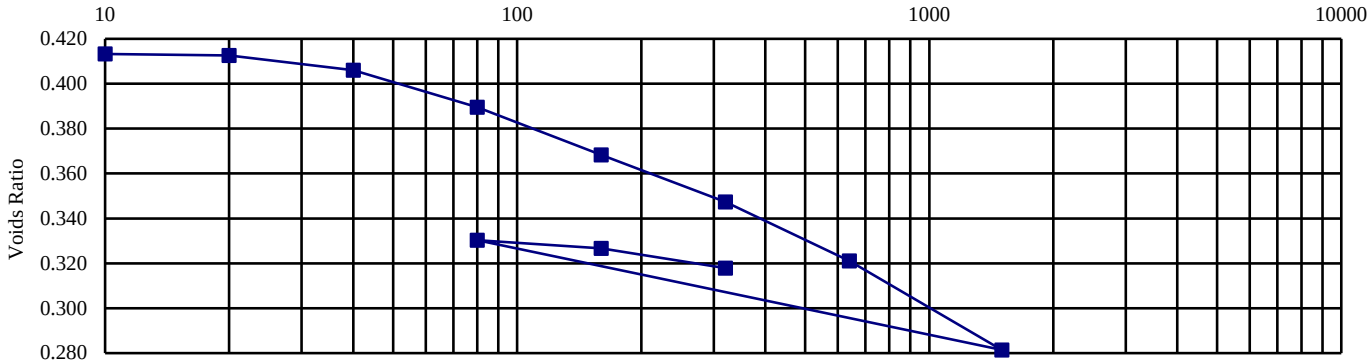
Hole Number: **RC03** **Top Depth (m):** **9.10**

Sample Number: **129** **Base Depth (m) :** **9.40**

Sample Type: **C**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	15						
Bulk Density (Mg/m3):	2.16	Swelling	Swelling	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.87	Swelling	Swelling	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.422	20	40	0.231	9.932	Nominal temperature	
Degree of saturation:	96.4	40	80	0.293	9.255	during test ' C:	20
Height (mm):	20.01	80	160	0.191	6.422	Remarks:	
Diameter (mm)	74.99	160	320	0.095	2.336	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.66	320	640	0.061	2.175		
		640	1500	0.035	2.134		
		1500	80	0.027	6.065		
		80	160	0.034	1.785		
		160	320	0.042	1.994		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5374
Client Ref:
D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

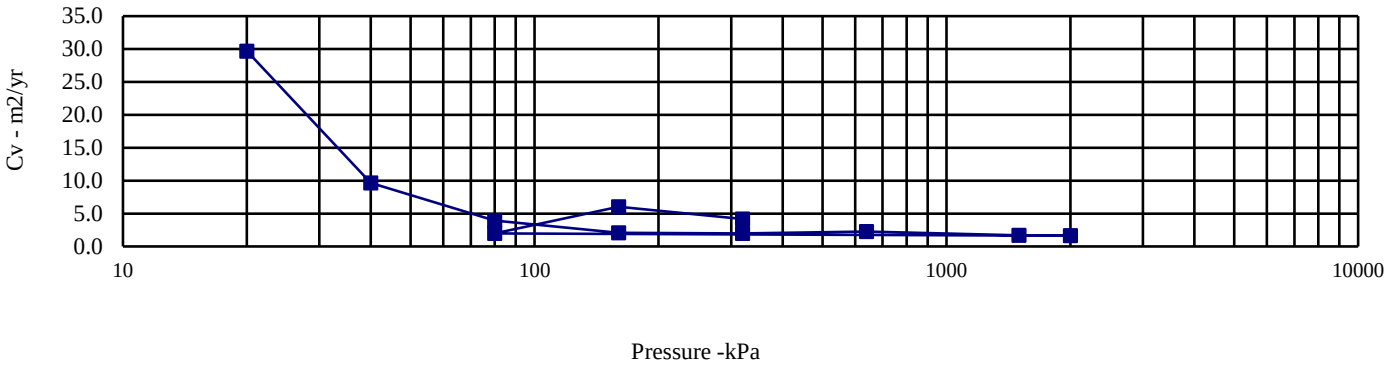
BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC03** **Top Depth (m):** **13.10**

Sample Number: **141** **Base Depth (m) :** **13.40**

Sample Type: **C**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	17						
Bulk Density (Mg/m3):	2.16	0	20	0.256	29.688	Method used to	
Dry Density (Mg/m3):	1.84	20	40	0.272	9.661	determine CV:	T90
Voids Ratio:	0.438	40	80	0.223	3.937	Nominal temperature	
Degree of saturation:	102.8	80	160	0.126	2.054	during test ' C:	20
Height (mm):	19.96	160	320	0.079	1.960	Remarks:	
Diameter (mm)	75.02	320	640	0.046	2.246	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	640	1500	0.025	1.669		
Measured		1500	2000	0.010	1.625		
		2000	80	0.010	1.994		
		80	160	0.033	6.050		
		160	320	0.032	4.165		



UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/5374

Client Ref: D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
	Depth		4.15-4.45m	
	Description		See summary of soil descriptions.	
	Type		Undisturbed, vertical orientation.	
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.6
	Initial Sample Weight	W_0	(gr)	3802.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.10
	Particle Density	ρ_s	(Mg/m3)	2.66

sketch showing specimen location in original sample

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	1000	1100	1300	
Initial Back Pressure	U_{bi}	(kPa)	900	900	900	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	16			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.81			
Initial Voids Ratio	e_i	.	0.468			
Initial Degree of Saturation	S_i	(%)	89			
B Value	B	.	0.97			

Final Conditions						
Final Moisture	ω_f	(%)	15			
Final Dry Density	ρ_{df}	(Mg/m3)	1.87			
Final Voids Ratio	e_f	.	0.424			
Final Degree of Saturation	S_f	(%)	93.2			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.98	3.21	10.36	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	179.9	267.1	593.0	
Minor Stress At Failure	σ_3'	(kPa)	62.0	126.1	362.4	
Major Stress At Failure	σ_1'	(kPa)	242.0	393.2	955.4	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.901	3.118	2.636	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC03 4.15-4.45m
		Test Date	24/08/2022
Site Reference	Stansted Terminal 2 ST2 Ground Investigation	Borehole	RC03
Jobfile		Sample	4.15-4.45m
Client	Socotec	Depth	4.15-4.45m

UKAS TESTING 4043

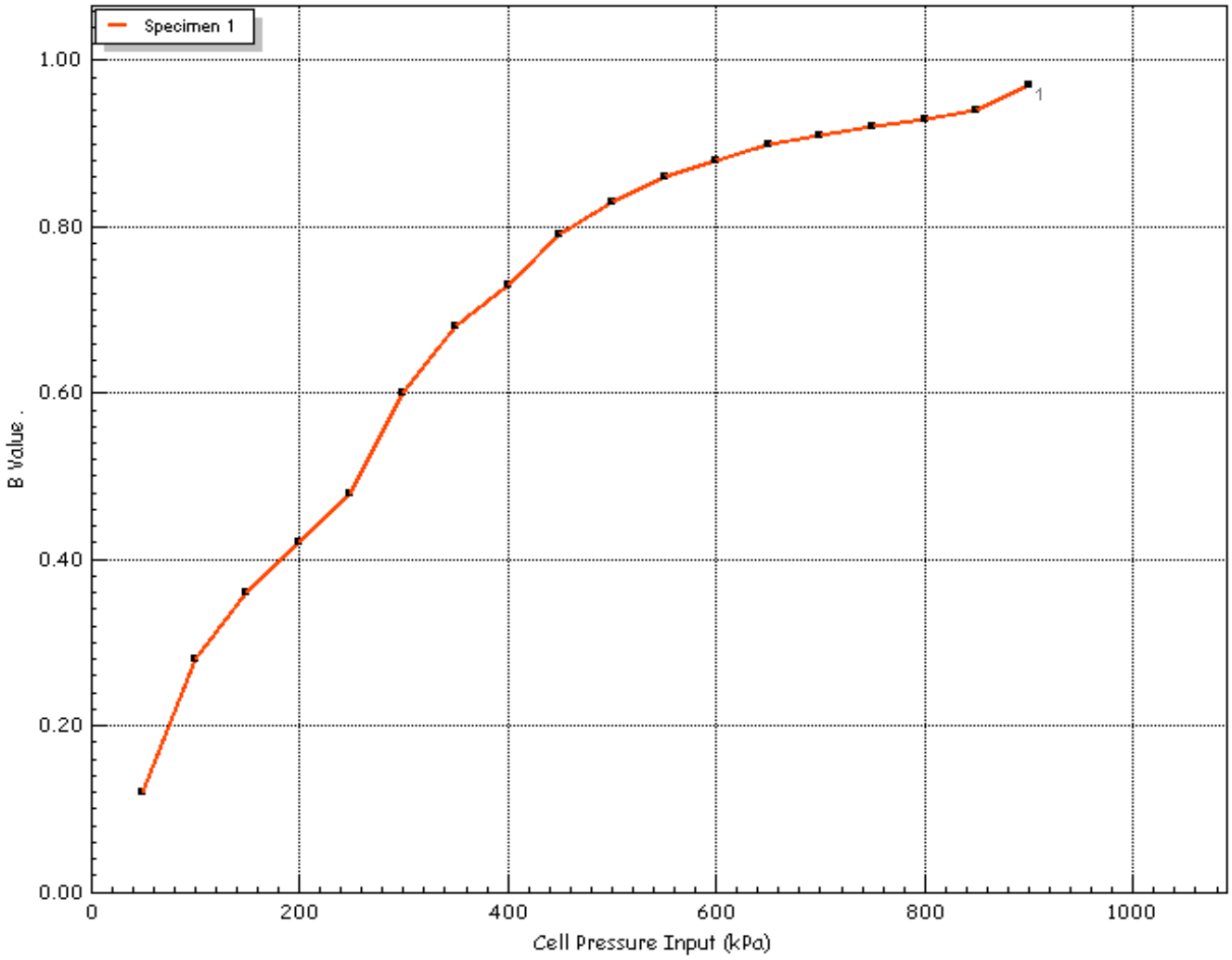
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	900
Pore Water Pressure Input	u pwp	(kPa)	892
B Value	B	.	0.97



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC03 4.15-4.45m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	RC03
		Sample	4.15-4.45m
Client	Socotec	Depth	4.15-4.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Consolidation Plots

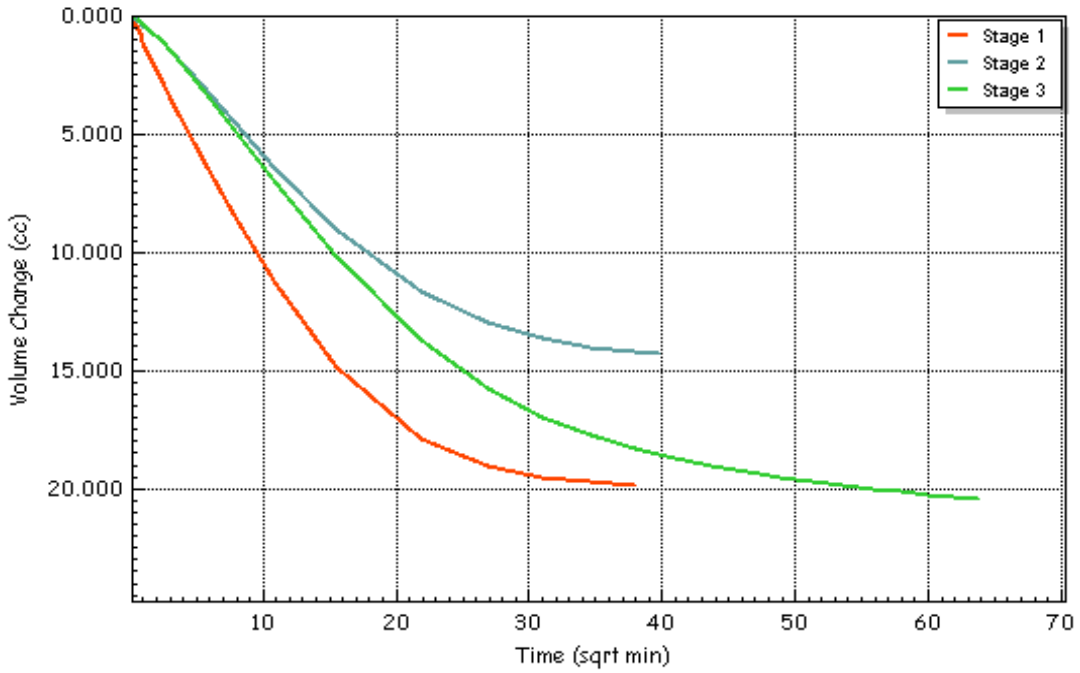
Initial Conditions

			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	1000	1100	1300
Initial Back Pressure	u_{bi}	(kPa)	900	900	900
Pore Water Pressure Input	u_{pwp}	(kPa)	990	1017	1119
Drainage Method			Radial+One End		

Final Conditions

			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	95.43
Volumetric Strain	ε_v%	(%)	1.09	1.88	3.01
Corrected Length	L_C	(mm)	210.2	204.7	198.7
Corrected Area	A_C	(cm2)	85.31	85.97	86.83
Corrected Volume	V_C	(cc)	1793.325	1779.019	1758.581
T100 Time to Failure	t_{100}	(min)	373.78	501.58	839.35
Consolidation	c_v	(m2/year)	0.604	0.450	0.269
Compressibility	m_v	(m2/MN)	0.122	0.161	0.144
Test Time	t_F	(h:m:s)	11:12:48	15:02:50	25:10:49
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.01562	0.01562	0.01562

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC03 4.15-4.45m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	RC03
		Sample	4.15-4.45m
Client	Socotec	Depth	4.15-4.45m

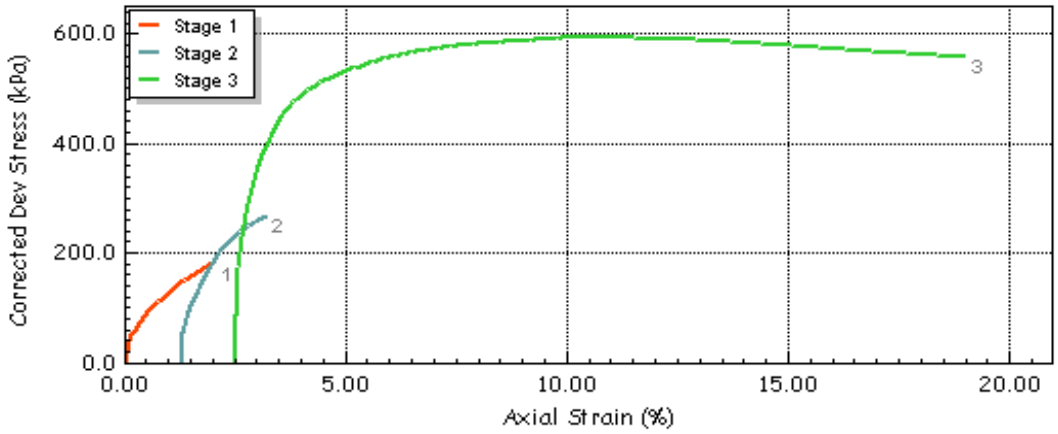
UKAS TESTING 4043

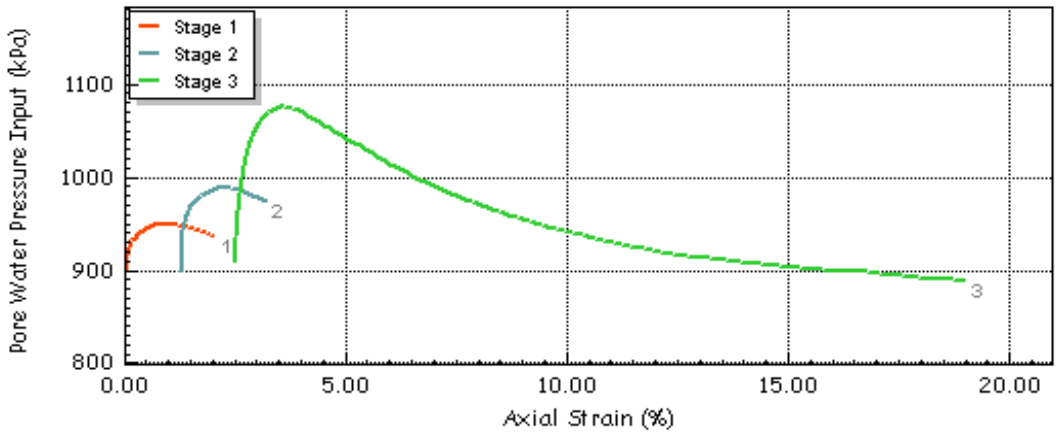
PSL PROFESSIONAL SOILS LABORATORY

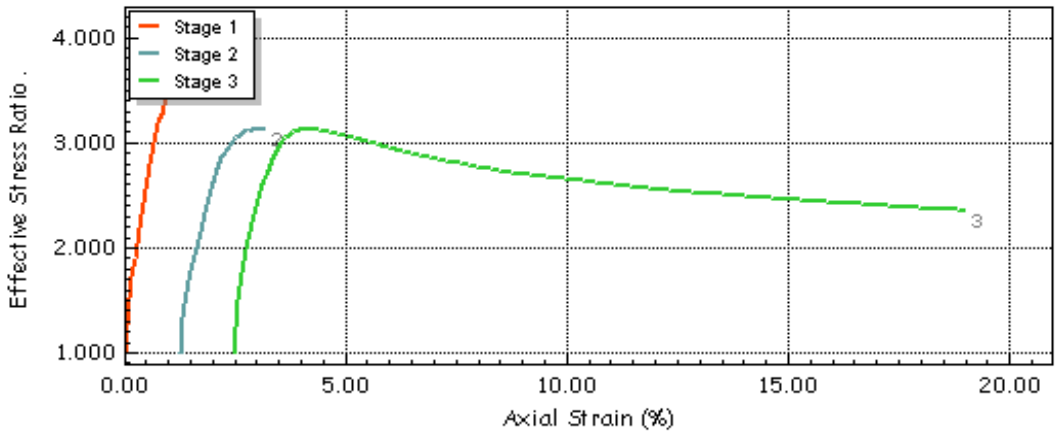
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC03 4.15-4.45m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	RC03
		Sample	4.15-4.45m
Client	Socotec	Depth	4.15-4.45m

UKAS TESTING 4043

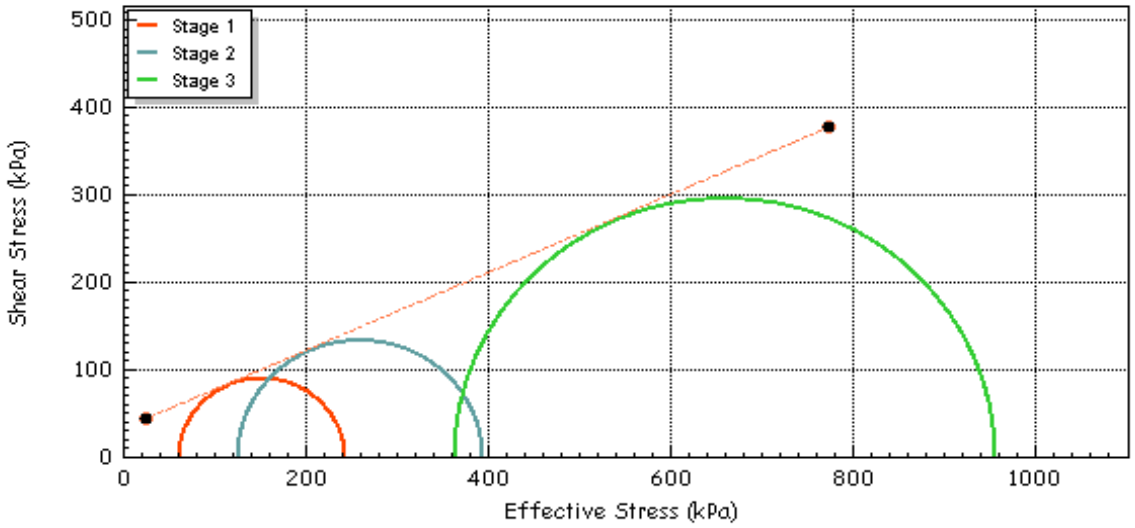
PSL PROFESSIONAL SOILS LABORATORY

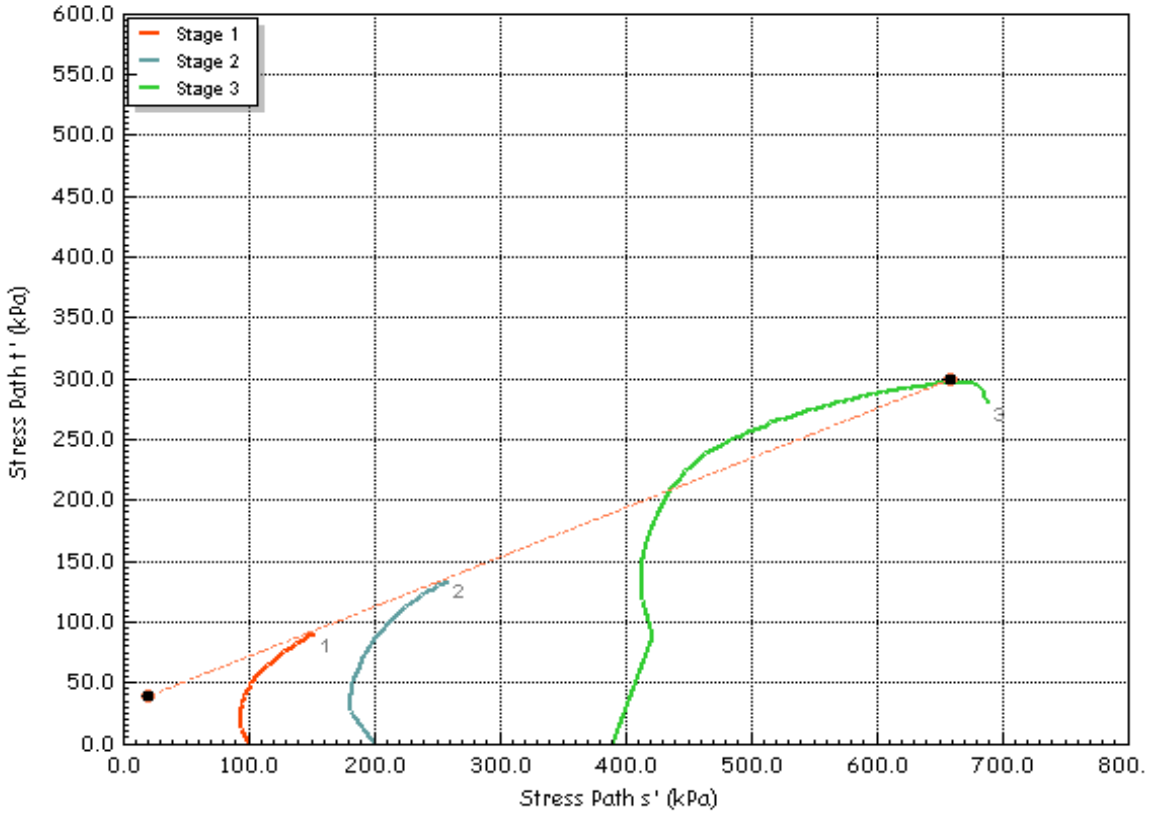
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	32.72	Effective Cohesion	c'	(kPa)	32.72
Effective Friction	ϕ'	(deg)	24.1	Effective Friction	ϕ'	(deg)	24.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC03 4.15-4.45m
		Test Date	24/08/2022
Jobfile	Stansted Terminal 2 ST2 Ground Investigation	Borehole	RC03
		Sample	4.15-4.45m
Client	Socotec	Depth	4.15-4.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-16779 *Issued:* 01-Sep-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-16779

Client Reference PLS22/5374

Order No (not supplied)

Contract Title Stansted Terminal 2(ST2)- Ground Investigation

Description 4 Soil samples.

Date Received 25-Aug-22

Date Started 25-Aug-22

Date Completed 01-Sep-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-16779
Client Ref PLS22/5374
Contract Title Stansted Terminal 2(ST2)- Ground Investigation

			Lab No	2050488	2050489	2050490	2050491
			.Sample ID	RC03	RC03	RC03	RC03
			Depth	0.50	2.80	11.40	23.40
			Other ID	6	105	136	174
			Sample Type	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	19	22	120
Inorganics							
pH	DETSC 2008#		pH	8.1	7.6	7.7	6.8
Chloride Aqueous Extract	DETSC 2055	1	mg/l	3.4	3.3	4.9	13
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	150	690	590	1600
Sulphur as S, Total	DETSC 2320	0.01	%	0.06	0.37	0.37	0.76
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.08	0.20	0.20	0.63

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-16779
Client Ref PLS22/5374
Contract Stansted Terminal 2(ST2)- Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2050488	RC03 0.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2050489	RC03 2.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2050490	RC03 11.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2050491	RC03 23.40 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/5386

Report Date: 01 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 17/8/2022
Date Commenced: 17/8/2022
Date Completed: 1/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

[redacted]

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)
S Eyre (Senior Technician)
T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP10	9	D	3.00		Brown slightly gravelly sandy CLAY.
CP10	11	B	3.50	4.00	Brown slightly gravelly sandy CLAY.
CP10	13	D	4.00		Brown gravelly sandy CLAY.
CP10	14	UT	4.50	4.95	Brown gravelly sandy CLAY.
CP10	18	B	5.50	6.00	Brown very sandy clayey GRAVEL.
CP10	20	B	6.50	7.00	Brown slightly gravelly sandy CLAY.
CP10	24	D	8.00		Brown mottled grey slightly gravelly sandy CLAY.
CP10	25	UT	8.50	8.95	Firm brown mottled grey slightly gravelly sandy CLAY.
CP10	28	D	9.50		Brown gravelly sandy CLAY.
CP10	35	UT	12.50	12.95	Brown gravelly sandy CLAY.
CP10	40	UT	14.50	14.95	Firm brown gravelly sandy CLAY.
CP10	41	D	14.95	15.00	Brown gravelly sandy CLAY.
CP10	47	B	16.50	17.00	Brown gravelly sandy CLAY.
CP10	46	D	16.95	17.00	Brown gravelly sandy CLAY.
CP10	50	UT	18.50	18.95	Firm brown mottled grey gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP10	9	D	3.00		20			36	18	18	85	Intermediate Plasticity CI
CP10	13	D	4.00		21			38	19	19	80	Intermediate Plasticity CI
CP10	14	UT	4.50	4.95			2.66					
CP10	24	D	8.00		19			35	17	18	82	Intermediate Plasticity CI
CP10	28	D	9.50		17							
CP10	41	D	14.95	15.00	16			37	18	19	83	Intermediate Plasticity CI
CP10	46	D	16.95	17.00	16			36	18	18	86	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

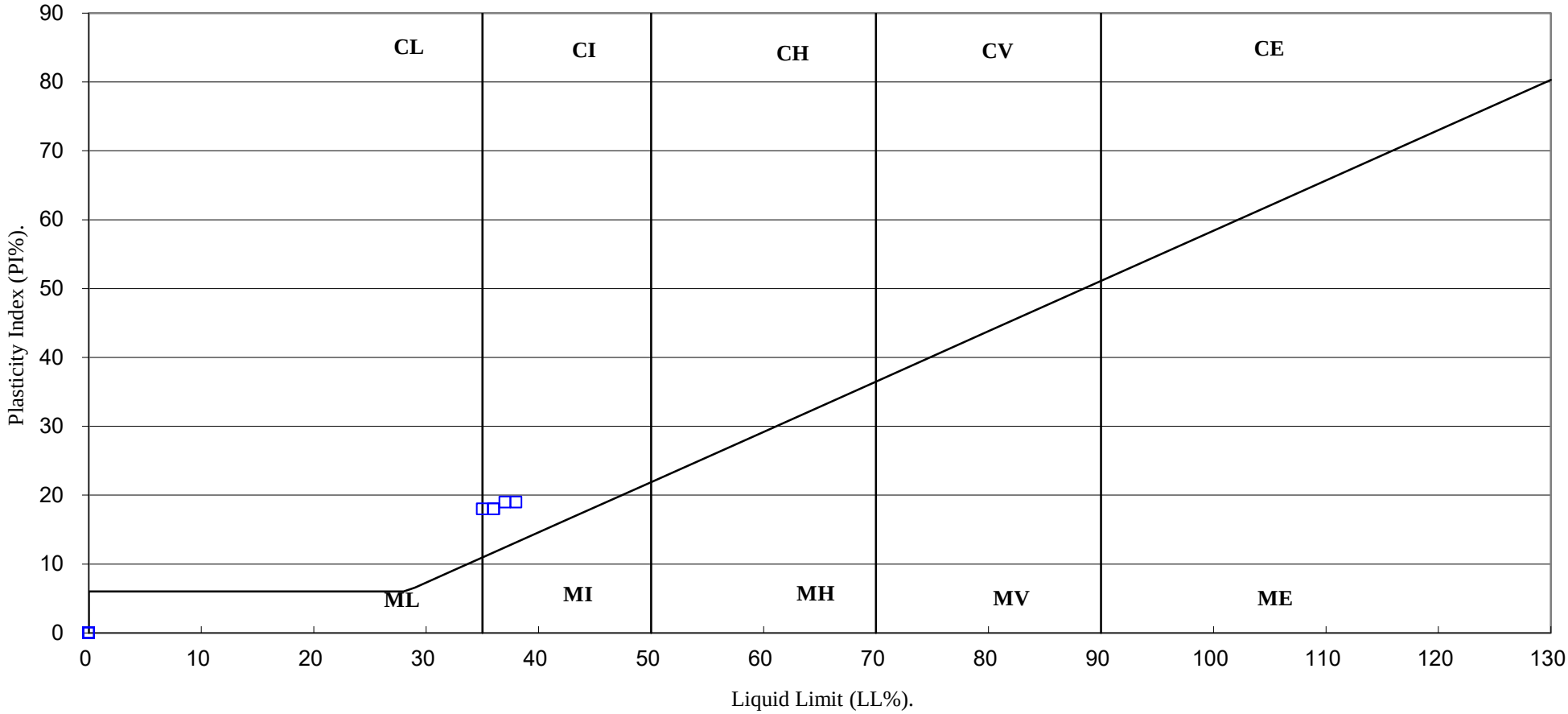
Contract No:

PSL22/5386

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



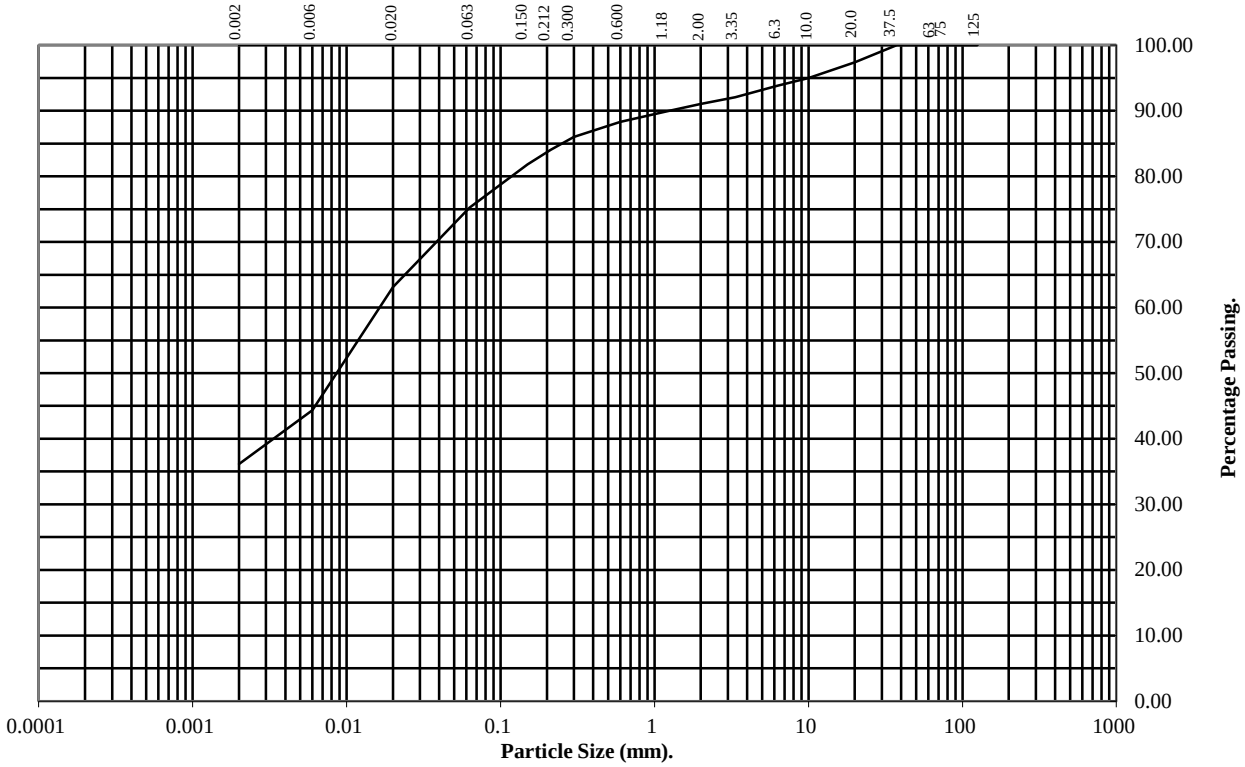
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5386 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP10**	**Top Depth (m):**	**3.50**
Sample Number:	**11**	**Base Depth(m):**	**4.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	95
6.3	94
3.35	92
2	91
1.18	90
0.6	88
0.3	86
0.212	84
0.15	82
0.063	75

Particle Diameter	Percentage Passing
0.02	63
0.006	44
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	9
Sand	16
Silt	39
Clay	36

Remarks:

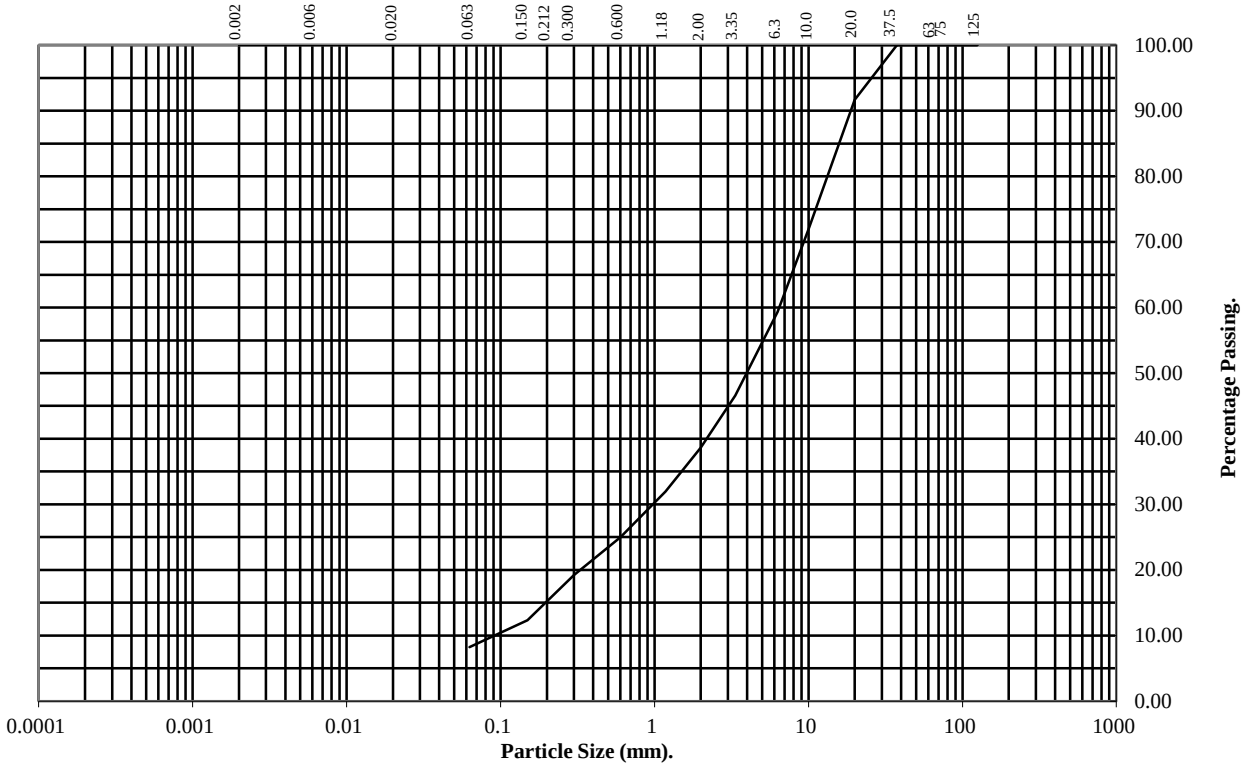
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP10**	**Top Depth (m):**	**5.50**
Sample Number:	**18**	**Base Depth(m):**	**6.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	92
10	72
6.3	59
3.35	47
2	39
1.18	32
0.6	25
0.3	19
0.212	16
0.15	12
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	61
Sand	31
Silt/Clay	8

Remarks:

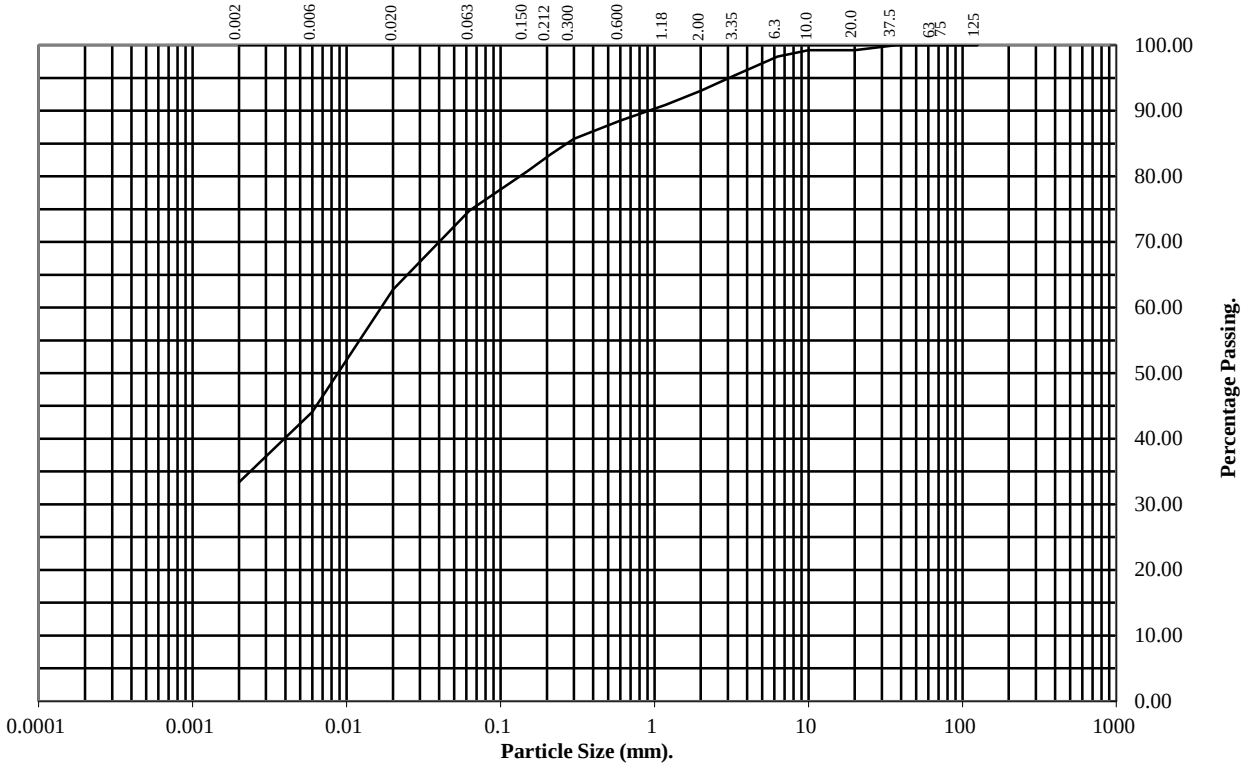
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP10**	**Top Depth (m):**	**6.50**
Sample Number:	**20**	**Base Depth(m):**	**7.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	99
6.3	98
3.35	95
2	93
1.18	91
0.6	88
0.3	86
0.212	83
0.15	81
0.063	75

Particle Diameter	Percentage Passing
0.02	63
0.006	44
0.002	33

Soil Fraction	Total Percentage
Cobbles	0
Gravel	7
Sand	18
Silt	42
Clay	33

Remarks:

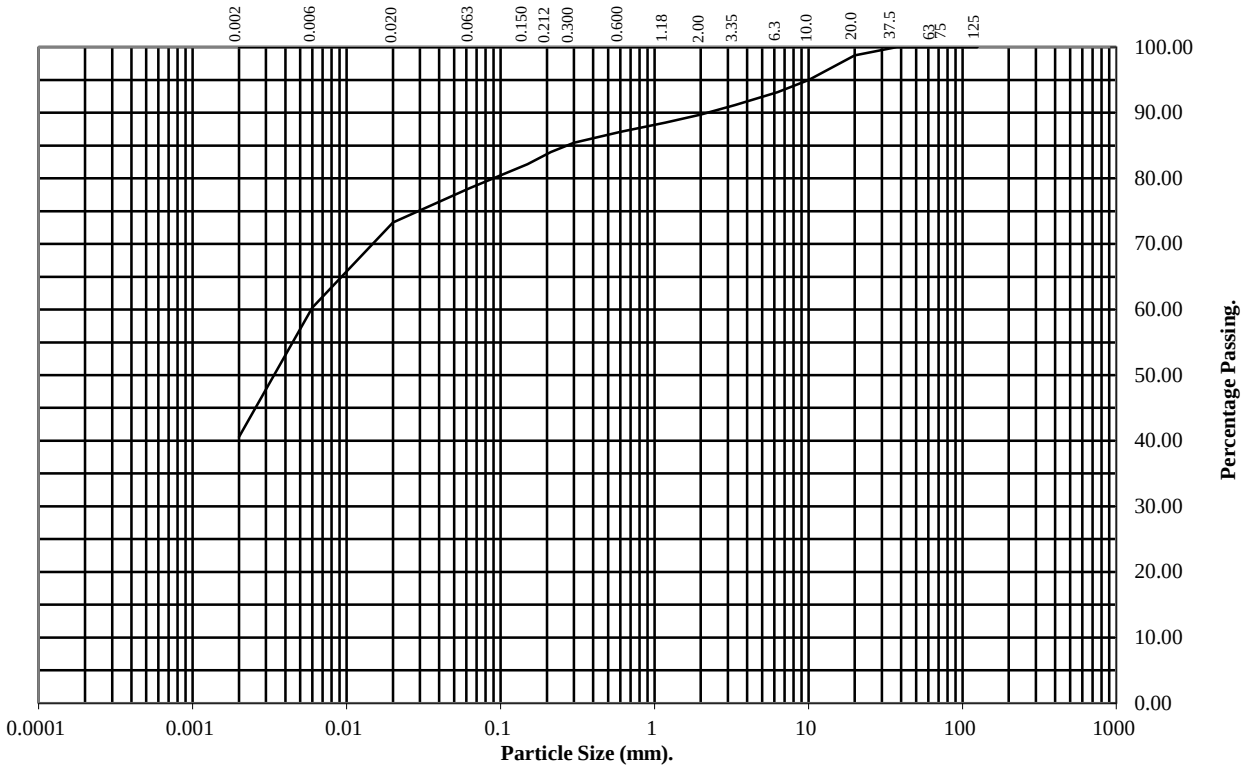
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP10**	**Top Depth (m):**	**16.50**
Sample Number:	**47**	**Base Depth(m):**	**17.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	99
10	95
6.3	93
3.35	91
2	90
1.18	88
0.6	87
0.3	85
0.212	84
0.15	82
0.063	78

Particle Diameter	Percentage Passing
0.02	73
0.006	60
0.002	41

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	12
Silt	37
Clay	41

Remarks:

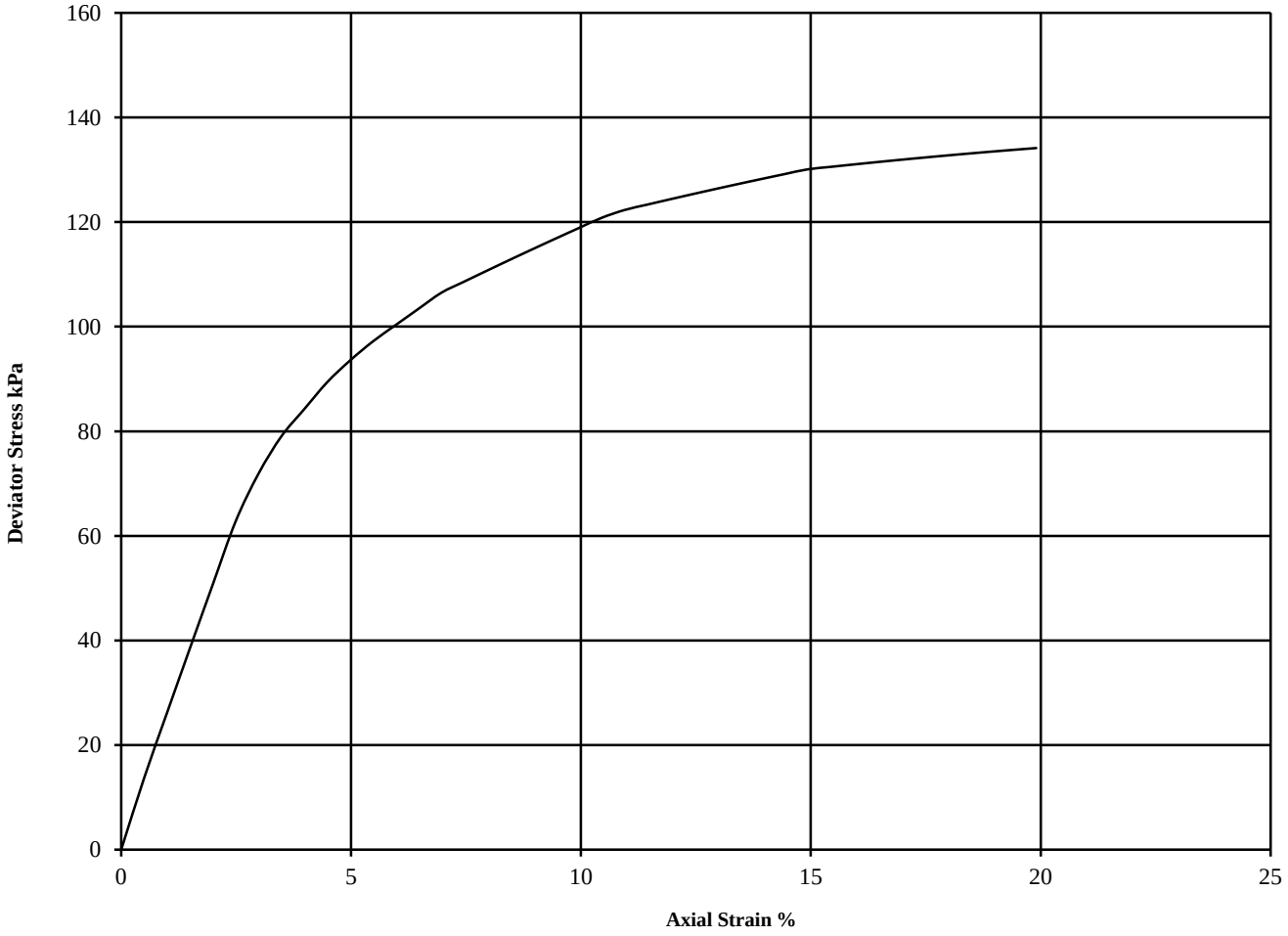
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP10**	**Top Depth (m):**	**8.50**
Sample Number:	**25**	**Base Depth (m):**	**8.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	19	2.09	1.76	170	134	67	19.9	Plastic	See summary of soil descriptions

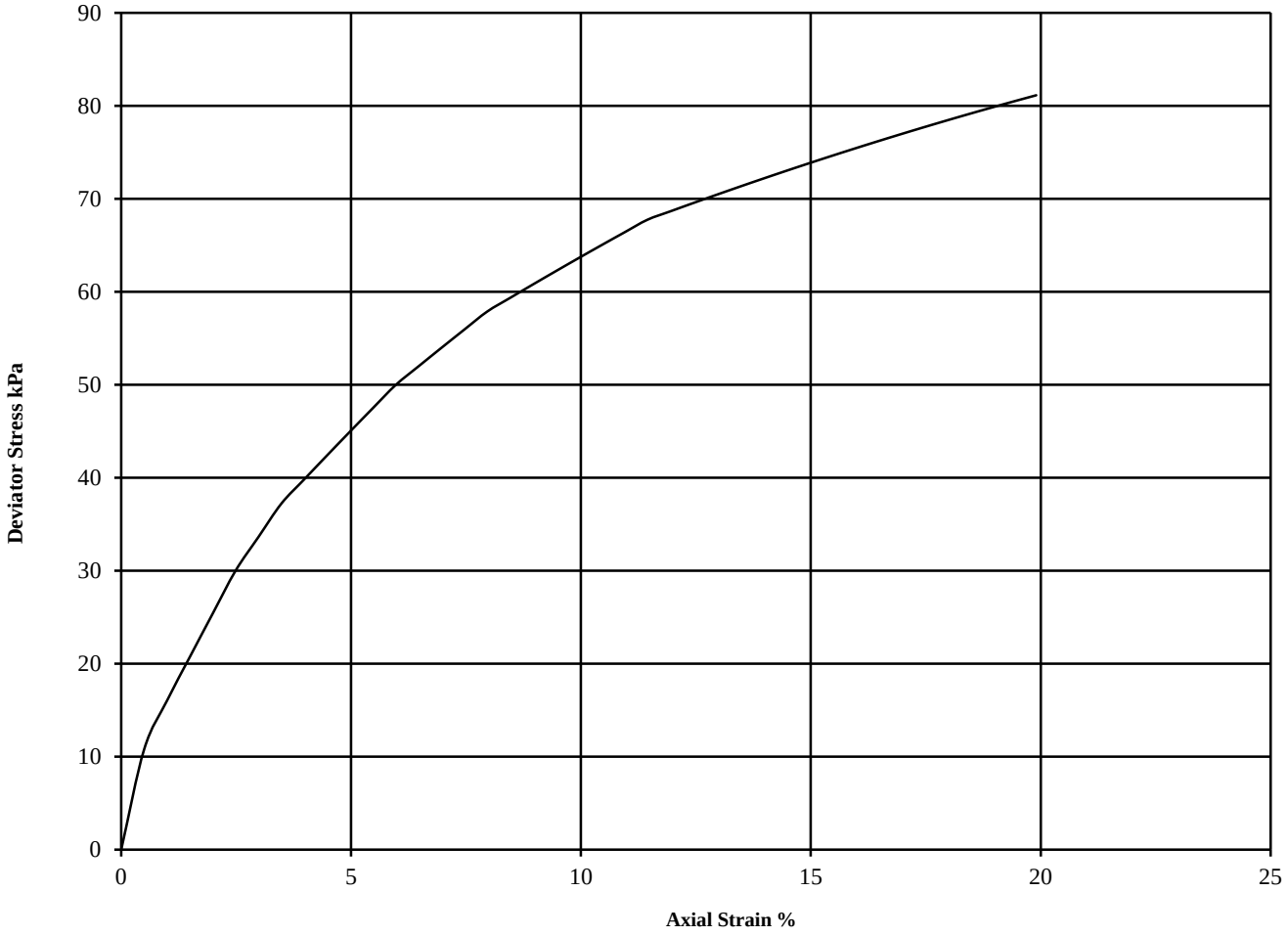
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5386 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP10**	**Top Depth (m):**	**14.50**
Sample Number:	**40**	**Base Depth (m):**	**14.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	20	2.05	1.70	225	81	41	19.9	Plastic	See summary of soil descriptions

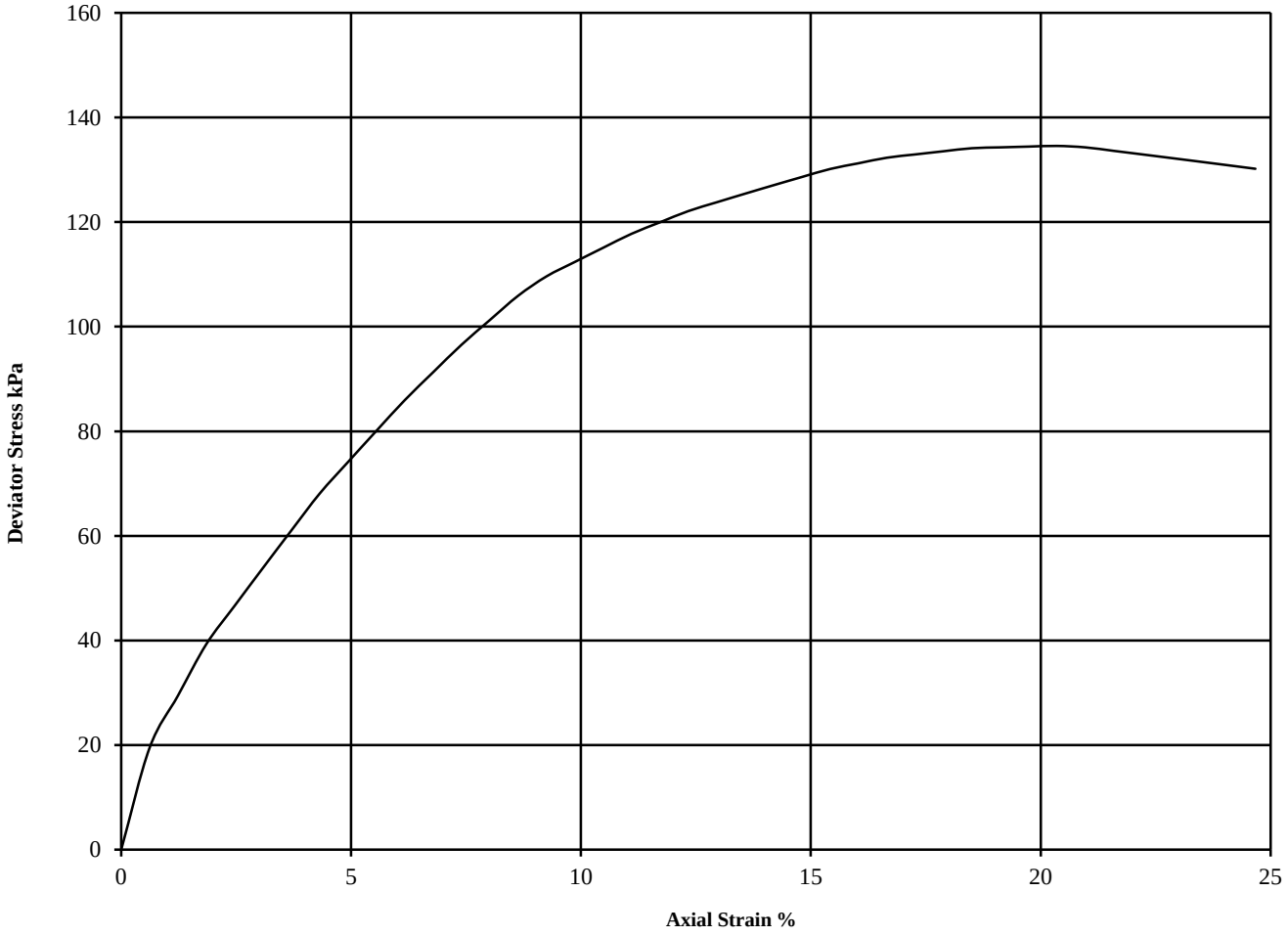
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5386 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP10**	**Top Depth (m):**	**18.50**
Sample Number:	**50**	**Base Depth (m):**	**18.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		167	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	18	2.12	1.80	260	135	67	20.4	Plastic	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5386 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

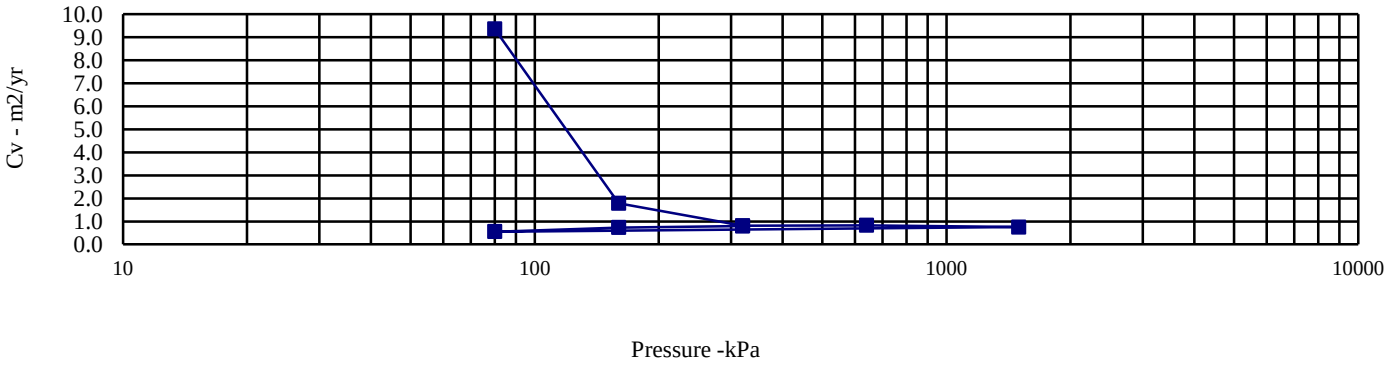
BS 1377: Part 5: 1990: Clause 3

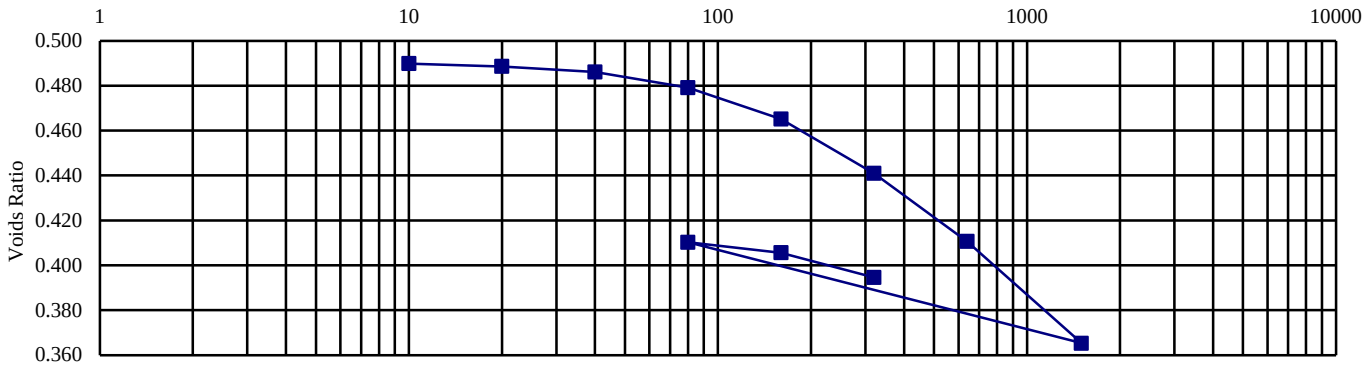
Hole Number: **CP10** **Top Depth (m):** **4.50**

Sample Number: **14** **Base Depth (m) :** **4.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.11	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.78	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.494	20	40	Swelling	Swelling	Nominal temperature	
Degree of saturation:	98.6	40	80	0.117	9.349	during test ' C:	20
Height (mm):	19.818	80	160	0.119	1.787	Remarks:	
Diameter (mm)	74.855	160	320	0.103	0.809	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.66	320	640	0.066	0.826		
		640	1500	0.037	0.754		
		1500	80	0.023	0.552		
		80	160	0.041	0.736		
		160	320	0.049	0.796		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5386 **Client Ref:** D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
	Depth			12.50-12.95m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.9
	Initial Sample Weight	W_0	(gr)	3822.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.09
	Particle Density	ρ_s	(Mg/m3)	2.66

sketch showing specimen location in original sample

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	450	550	750	
Initial Back Pressure	U_{bi}	(kPa)	350	350	351	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 6			
Initial Moisture	ω_i	(%)	20			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.75			
Initial Voids Ratio	e_i	.	0.519			
Initial Degree of Saturation	S_i	(%)	100			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	18			
Final Dry Density	ρ_{df}	(Mg/m3)	1.91			
Final Voids Ratio	e_f	.	0.391			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	6.13	11.20	13.52	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	85.0	166.1	408.8	
Minor Stress At Failure	σ_3'	(kPa)	36.4	83.5	249.0	
Major Stress At Failure	σ_1'	(kPa)	121.3	249.6	657.8	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.337	2.988	2.642	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP10 12.50-12.95m
		Test Date	22/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP10
		Sample	12.50-12.95m
Client	Socotec	Depth	12.50-12.95m

UKAS TESTING 4043

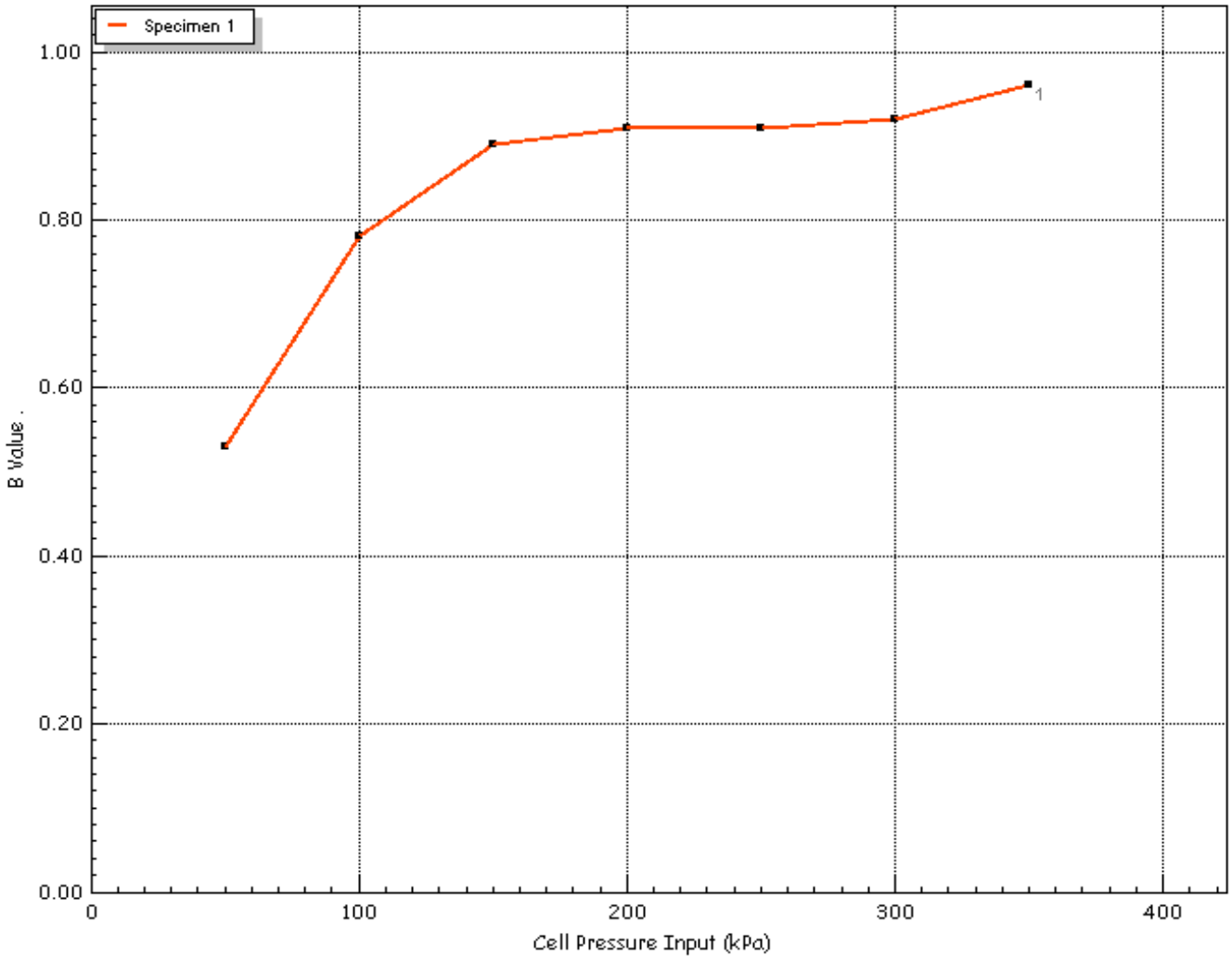
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	350
Pore Water Pressure Input	u pwp	(kPa)	337
B Value	B	.	0.96



UKAS TESTING 4043	Test Method	BS1377-8 : 1990 : Clause 7		Test Name	CP10 12.50-12.95m
				Test Date	22/08/2022
	Jobfile	Stansted Terminal 2 ST2 - Ground Investigation		Borehole	CP10
				Sample	12.50-12.95m
	Client	Socotec		Depth	12.50-12.95m
	Operator *		Checked *		Approved *

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

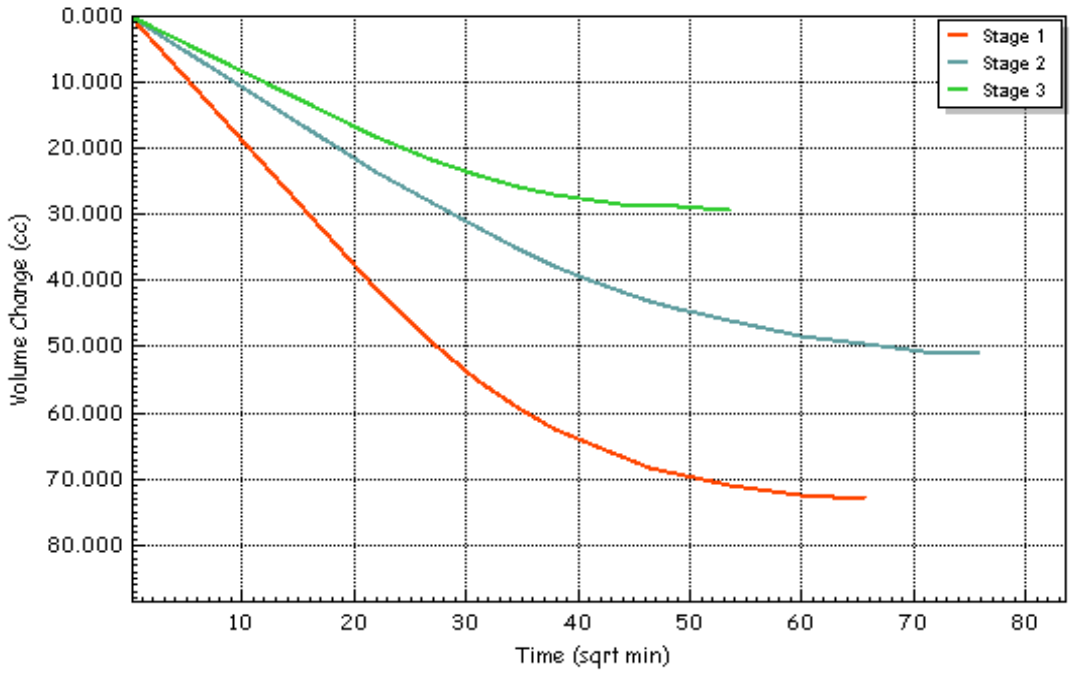
Consolidated Undrained

Consolidation Plots

Initial Conditions					
			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	450	550	750
Initial Back Pressure	u_{bi}	(kPa)	350	350	350
Pore Water Pressure Input	u_{pwp}	(kPa)	428	528	569
Drainage Method			Radial+One End		

Final Conditions					
			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	95.52	100.00
Volumetric Strain	ε_v%	(%)	4.00	2.80	1.60
Corrected Length	L_C	(mm)	208.2	193.5	181.3
Corrected Area	A_C	(cm2)	84.15	87.87	92.15
Corrected Volume	V_C	(cc)	1751.335	1700.198	1670.938
t100	t_{100}	(min)	1481.57	2273.44	1173.03
Consolidation	c_v	(m2/year)	0.153	0.100	0.194
Compressibility	m_v	(m2/MN)	0.513	0.164	0.073
Test Time	t_F	(h:m:s)	44:26:49	68:12:11	35:11:27
Estimated Strain to Failure	ε%	(%)	10.0	10.0	10.0
Shear Machine Speed	d_r	(mm/min)	0.00781	0.00781	0.00781

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP10 12.50-12.95m
Database: .\SQLEXPRESS \ tester		Test Date	22/08/2022
Site Reference	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP10
Jobfile		Sample	12.50-12.95m
Client	Socotec	Depth	12.50-12.95m
Operator *	Checked *	Approved *	

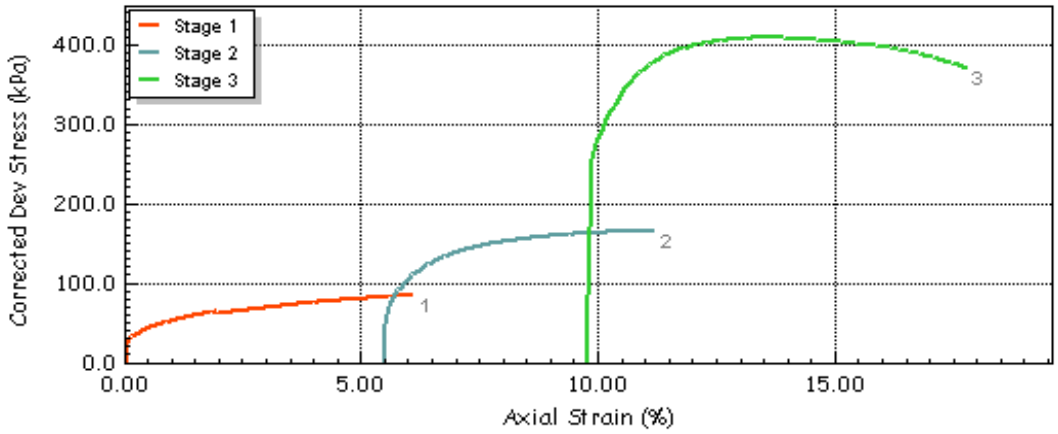
UKAS TESTING 4043

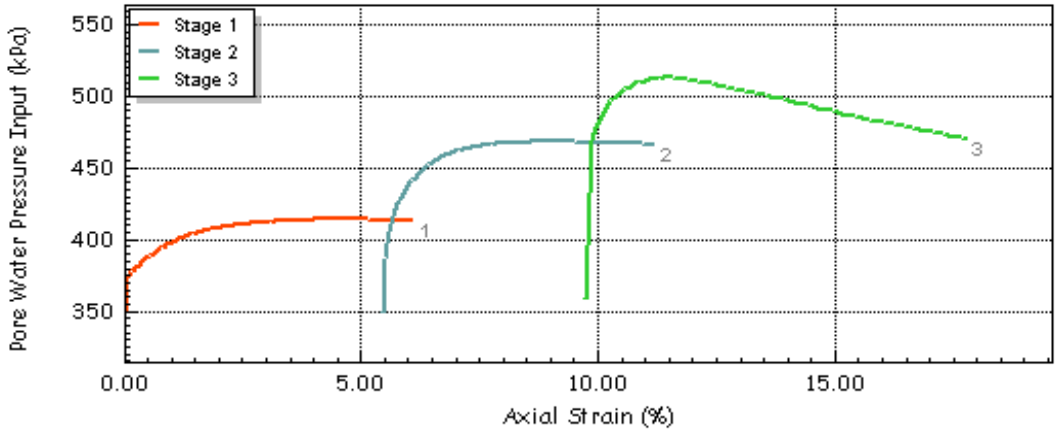
PSL PROFESSIONAL SOILS LABORATORY

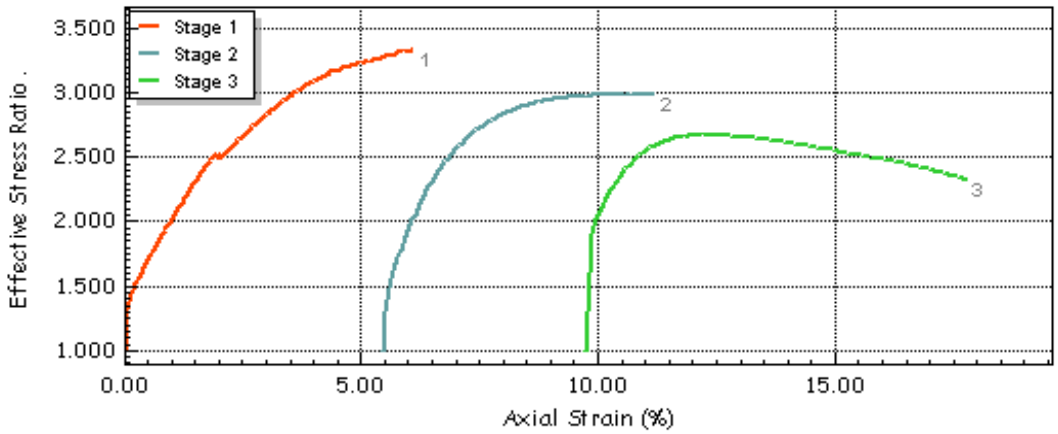
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP10 12.50-12.95m
		Test Date	22/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP10
		Sample	12.50-12.95m
Client	Socotec	Depth	12.50-12.95m

UKAS TESTING 4043

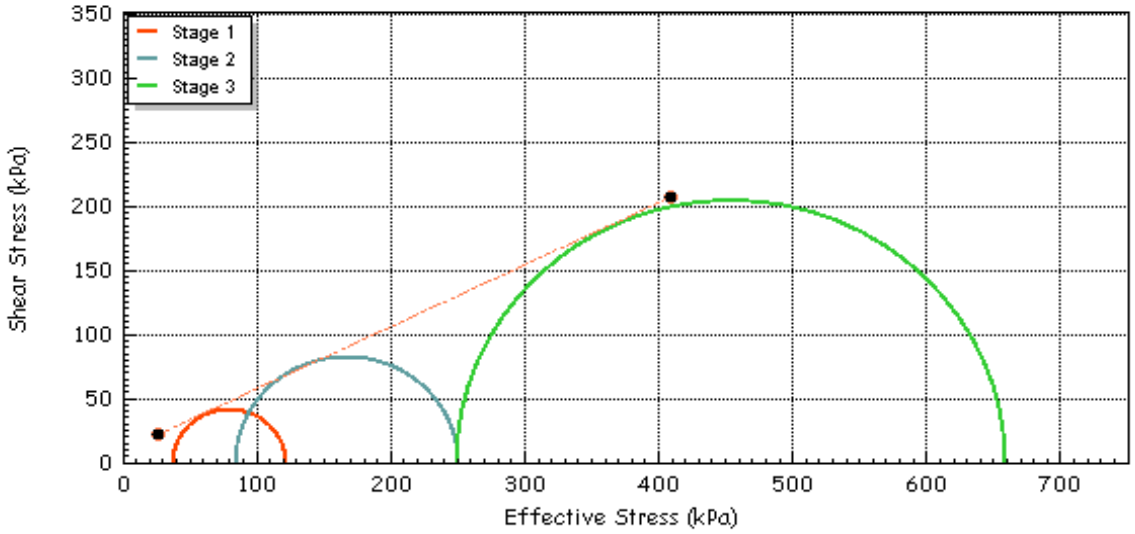
PSL PROFESSIONAL SOILS LABORATORY

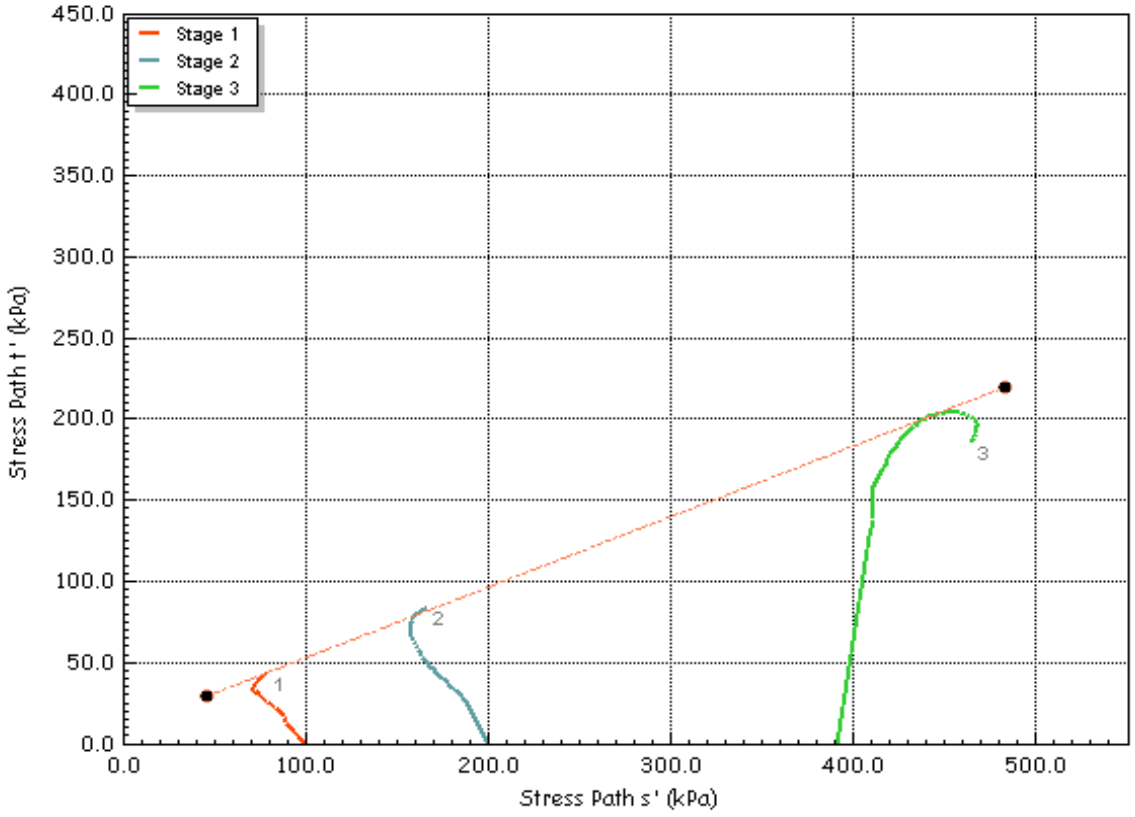
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	10.97	Effective Cohesion	c'	(kPa)	10.97
Effective Friction	ϕ'	(deg)	25.7	Effective Friction	ϕ'	(deg)	25.7





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP10 12.50-12.95m
		Test Date	22/08/2022
Jobfile	Stansted Terminal 2 ST2 - Ground Investigation	Borehole	CP10
		Sample	12.50-12.95m
Client	Socotec	Depth	12.50-12.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

LABORATORY REPORT

4043

Contract Number: PSL22/5410

Report Date: 01 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 17/8/2022
Date Commenced: 17/8/2022
Date Completed: 1/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

[redacted]

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R Berriman (Quality Manager)
S Royle (Laboratory Manager)
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S Eyre (Senior Technician)
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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS10	6	D	2.00		Brown gravelly sandy CLAY.
DS10	11	D	3.00		Brown slightly gravelly sandy CLAY.
DS10	17	D	4.50		Brown slightly gravelly sandy CLAY.
DS11	6	D	2.00		Brown slightly gravelly sandy CLAY.
DS11	13	B	3.00	3.50	Brown gravelly sandy CLAY.
DS11	12	D	3.50		Brown gravelly sandy CLAY.
DS11	21	D	5.00		Brown gravelly sandy CLAY.
DS12	6	D	2.00		Brown gravelly sandy CLAY.
DS12	11	D	3.00		Brown gravelly sandy CLAY.
DS12	16	D	4.00		Brown gravelly sandy CLAY.
DS18	8	B	1.10	1.30	Brown gravelly sandy CLAY.
DS18	14	D	2.50		Brown gravelly sandy CLAY.
DS18	19	D	3.50		Brown gravelly sandy CLAY.
DS18	24	D	4.40		Brown gravelly sandy CLAY.
RC04	105	D	2.80		Brown gravelly sandy CLAY.
RC04	110	D	4.40		Brown gravelly sandy CLAY.
RC04	116	C	6.35	6.65	Brown gravelly sandy CLAY.
RC04	118	C	7.35	7.65	Brown gravelly sandy CLAY.
RC04	119	D	7.70		Brown mottled grey gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC04	124	C	9.30	9.60	Brown mottled grey gravelly sandy CLAY.
RC04	127	C	10.30	10.60	Very stiff brown mottled grey gravelly sandy CLAY.
RC04	128	D	10.60		Brown mottled grey gravelly sandy CLAY.
RC04	130	C	11.35	11.65	Stiff brown mottled grey gravelly sandy CLAY.
RC04	137	D	13.70		Brown mottled grey gravelly sandy CLAY.
RC04	139	C	14.29	14.58	Stiff brown mottled grey gravelly CLAY. Gravel is chalk.
RC04	142	D	15.20		Brown mottled grey gravelly sandy CLAY.
RC04	143	C	15.60	15.90	Very stiff brown mottled grey gravelly sandy CLAY.
RC04	147	D	17.20		Brown mottled grey gravelly sandy CLAY.
RC04	151	C	18.30	18.60	Very stiff brown mottled grey gravelly sandy CLAY.
RC04	153	D	19.20		Brown slightly gravelly sandy CLAY.
RC04	157	C	21.35	21.60	Brown slightly gravelly sandy CLAY.
RC04	159	D	21.90		Brown CLAY.
RC04	161	C	22.40	22.70	Very stiff brown CLAY.
RC04	163	D	23.20		Brown CLAY.
RC04	167	C	24.30	24.60	Very stiff brown CLAY.
RC04	169	D	25.20		Brown CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS10	6	D	2.00		17							
DS10	11	D	3.00		18			40	19	21	90	Intermediate Plasticity CI
DS10	17	D	4.50		17			38	18	20	84	Intermediate Plasticity CI
DS11	6	D	2.00		11			33	16	17	88	Low Plasticity CL
DS11	12	D	3.50		14			42	20	22	79	Intermediate Plasticity CI
DS11	21	D	5.00		16							
DS12	6	D	2.00		14			39	19	20	82	Intermediate Plasticity CI
DS12	11	D	3.00		15							
DS12	16	D	4.00		17			41	20	21	84	Intermediate Plasticity CI
DS18	8	B	1.10	1.30	13			40	20	20	88	Intermediate Plasticity CI
DS18	14	D	2.50		16			37	18	19	78	Intermediate Plasticity CI
DS18	19	D	3.50		14							
DS18	24	D	4.40		14			36	18	18	80	Intermediate Plasticity CI
RC04	105	D	2.80		14			38	18	20	84	Intermediate Plasticity CI
RC04	110	D	4.40		17			39	18	21	81	Intermediate Plasticity CI
RC04	116	C	6.35	6.65			2.64					
RC04	119	D	7.70		15			35	17	18	77	Intermediate Plasticity CI
RC04	124	C	9.30	9.60			2.65					
RC04	128	D	10.60		18			42	20	22	87	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

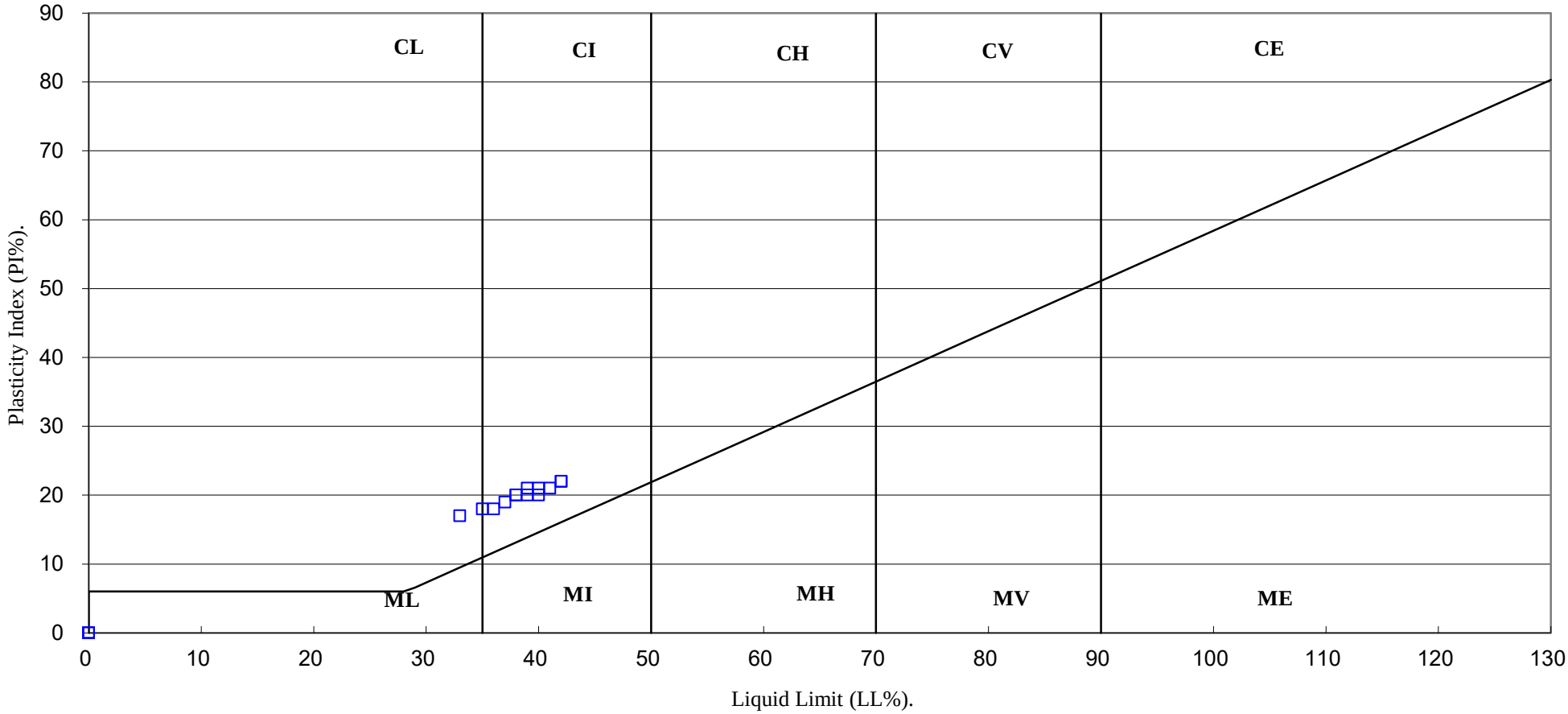
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5410
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
RC04	137	D	13.70		19			40	20	20	84	Intermediate Plasticity CI
RC04	142	D	15.20		16			42	20	22	78	Intermediate Plasticity CI
RC04	147	D	17.20		16							
RC04	153	D	19.20		17			43	21	22	88	Intermediate Plasticity CI
RC04	157	C	21.35	21.60	16			37	18	19	91	Intermediate Plasticity CI
RC04	159	D	21.90		26			74	30	44	100	Very High Plasticity CV
RC04	163	D	23.20		23							
RC04	169	D	25.20		25			68	28	40	100	High Plasticity CH

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

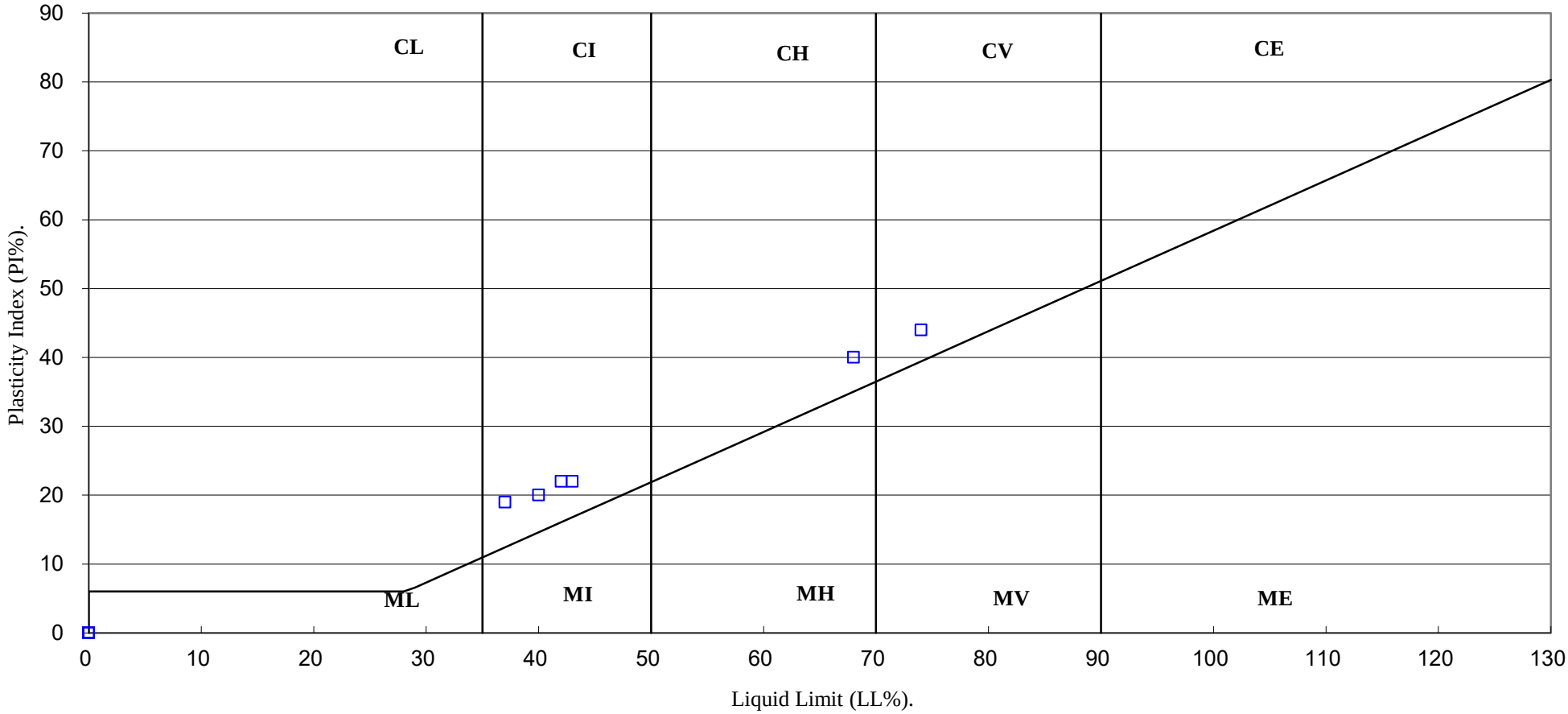
Contract No:

PSL22/5410

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



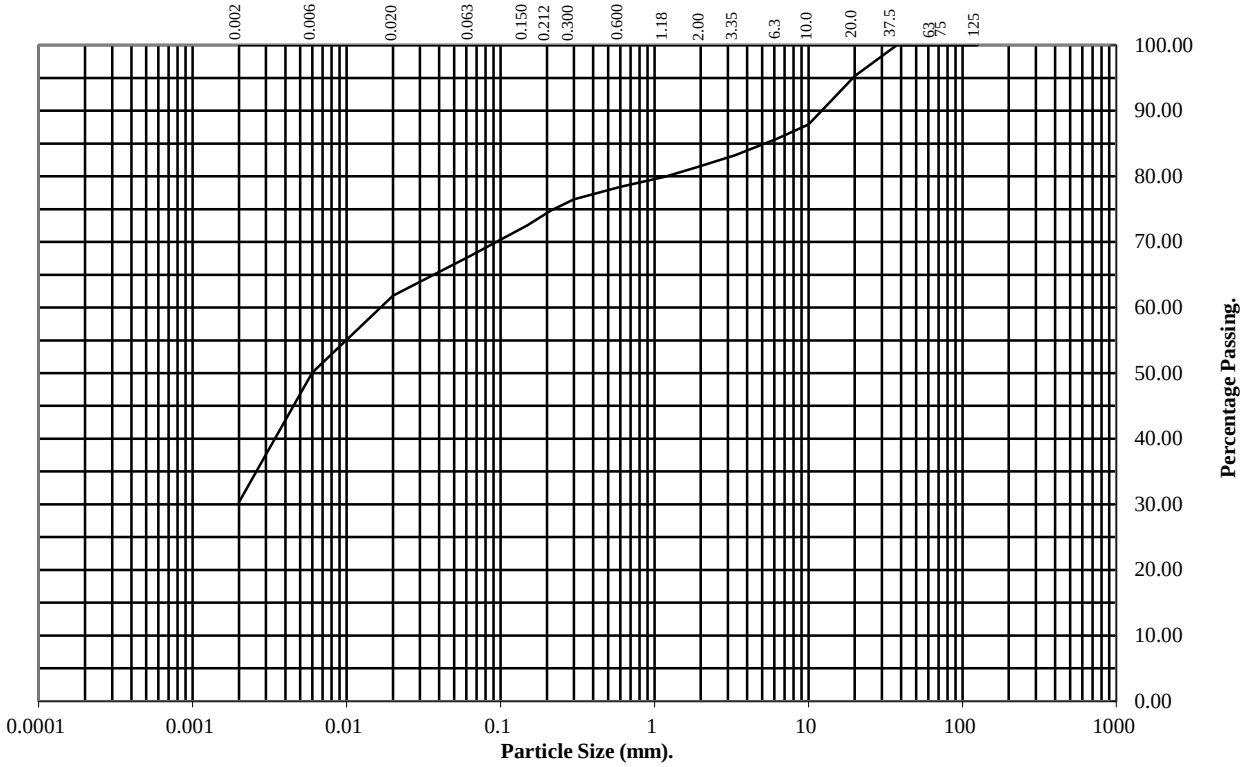
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**DS11**	**Top Depth (m):**	**3.00**
Sample Number:	**13**	**Base Depth(m):**	**3.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	95
10	88
6.3	86
3.35	83
2	82
1.18	80
0.6	78
0.3	76
0.212	75
0.15	73
0.063	68

Particle Diameter	Percentage Passing
0.02	62
0.006	50
0.002	30

Soil Fraction	Total Percentage
Cobbles	0
Gravel	18
Sand	14
Silt	38
Clay	30

Remarks:

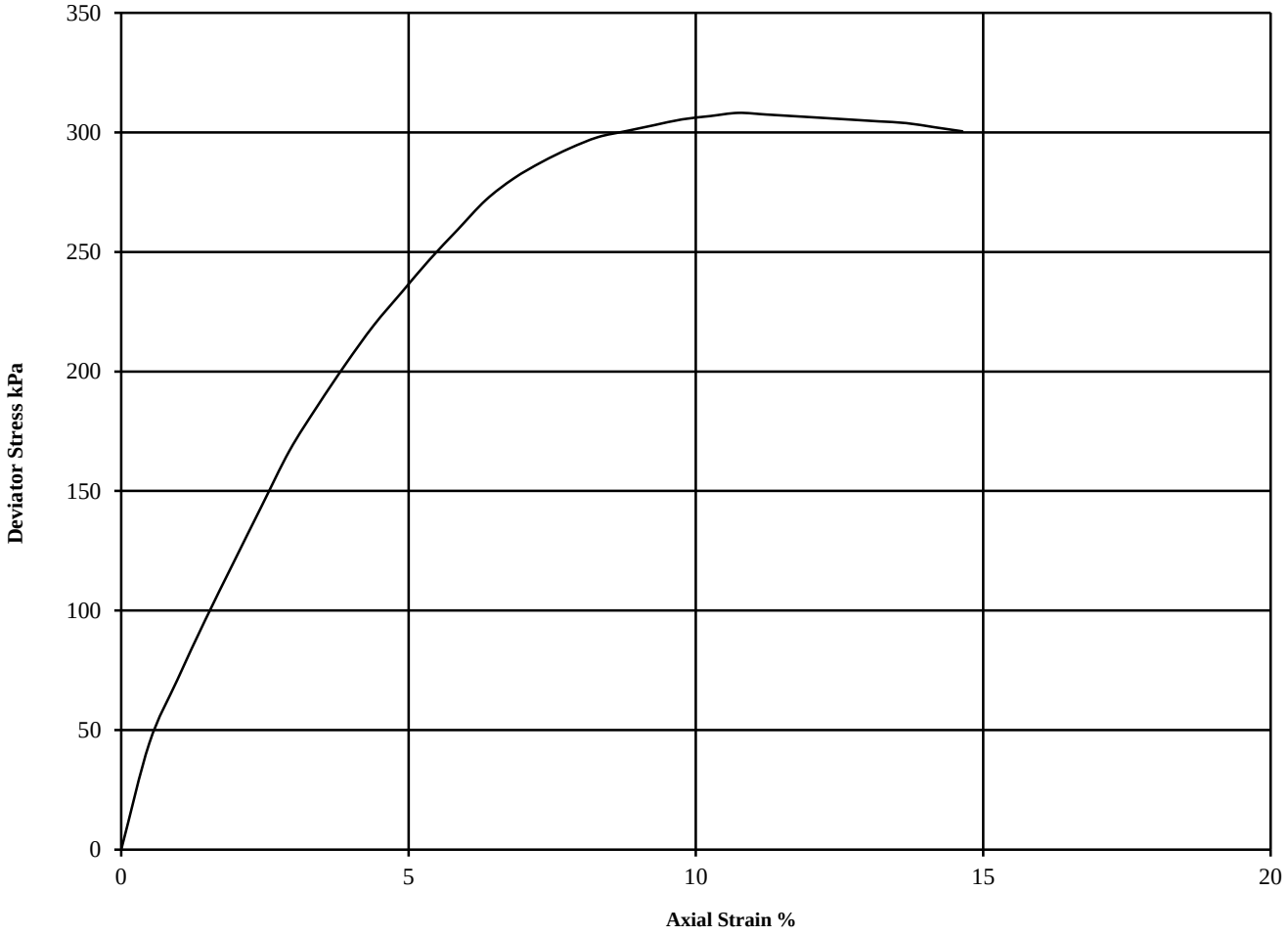
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**10.30**
Sample Number:	**127**	**Base Depth (m):**	**10.60**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	19	2.01	1.69	140	308	154	10.7	Plastic	See summary of soil descriptions

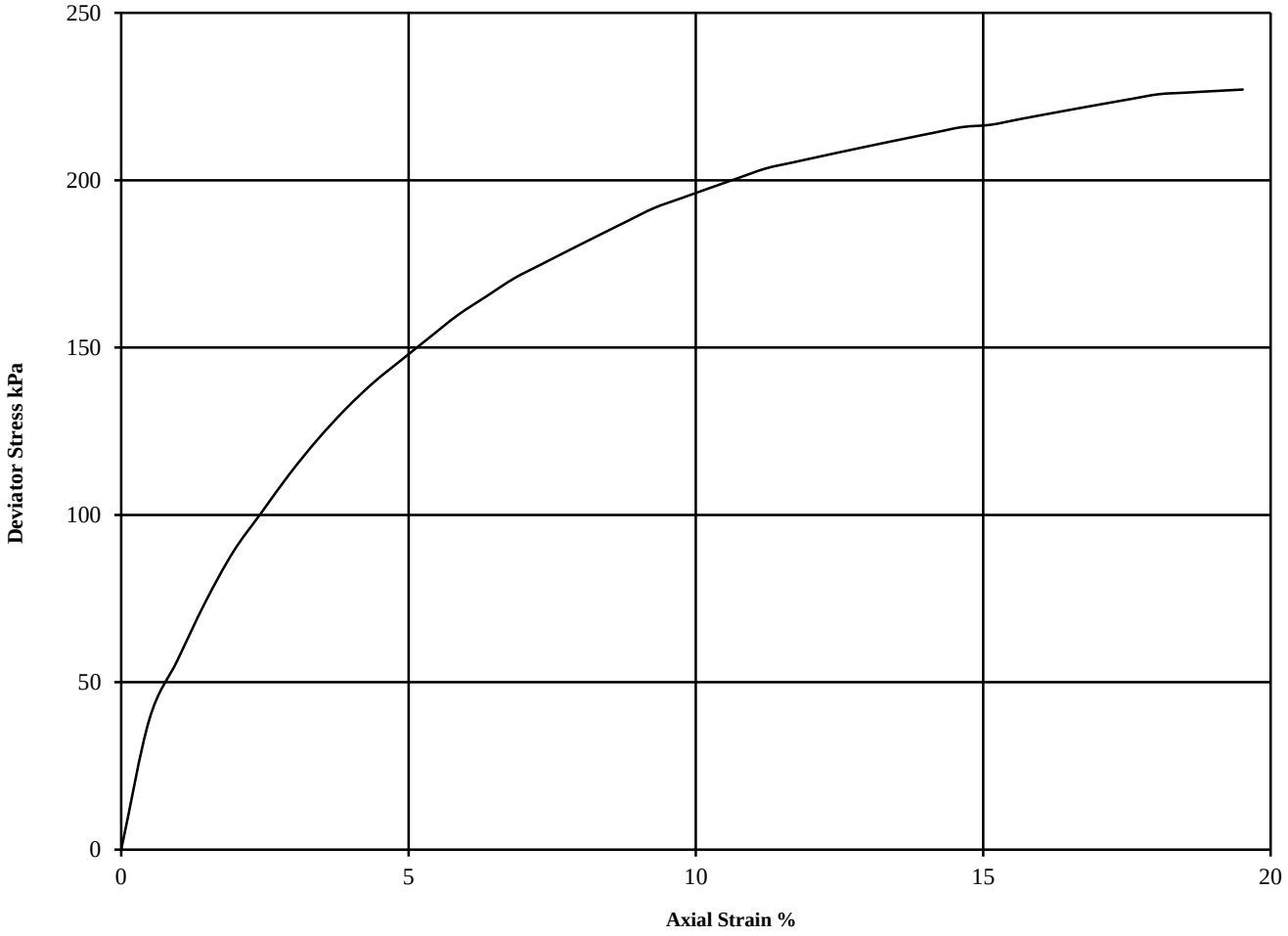
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**11.35**
Sample Number:	**130**	**Base Depth (m):**	**11.65**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	19	2.00	1.68	190	227	114	19.5	Plastic	See summary of soil descriptions

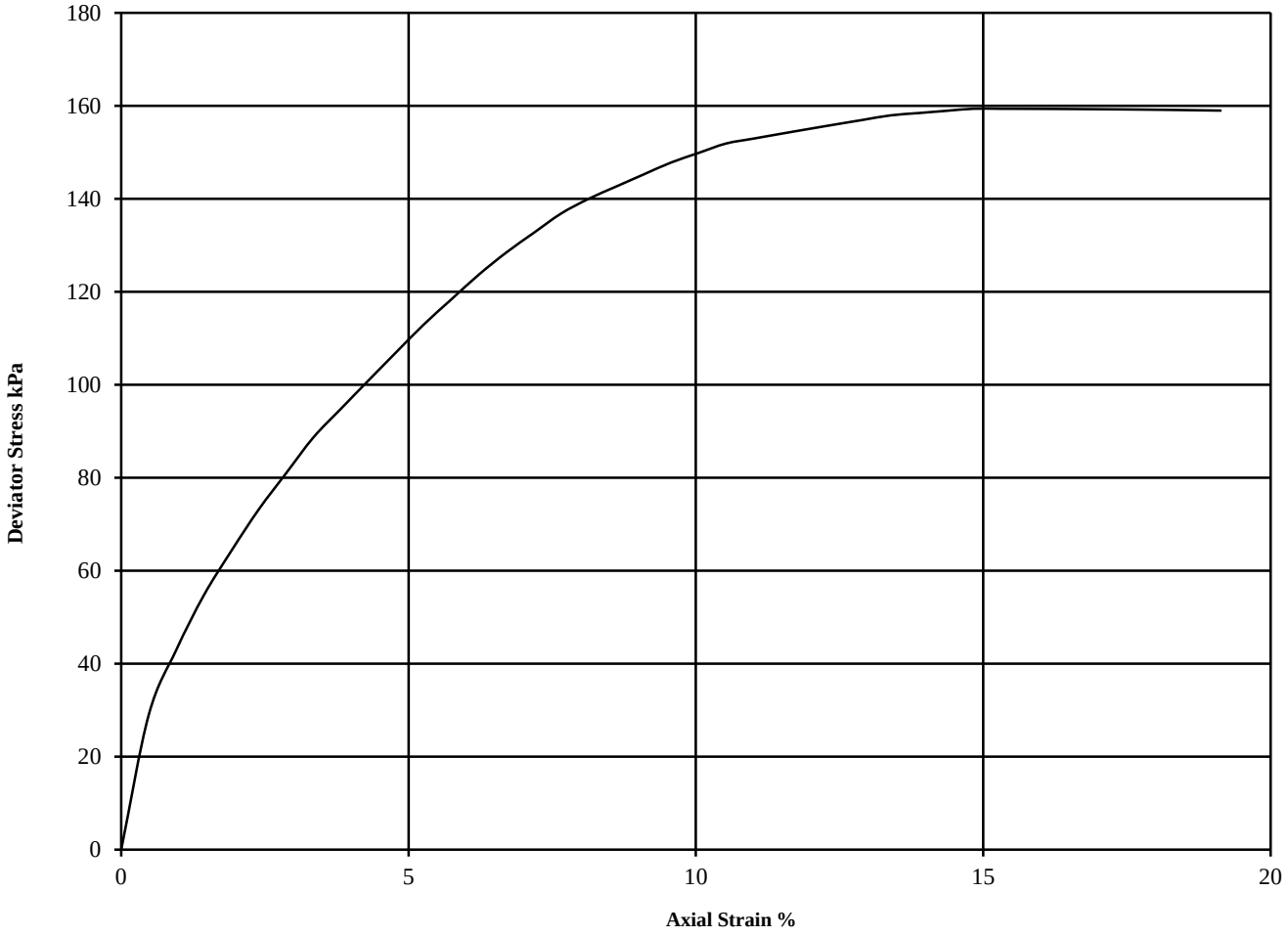
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**14.29**
Sample Number:	**139**	**Base Depth (m):**	**14.58**
Sample Type	**C**		



Diameter (mm):		99	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	20	2.06	1.71	210	159	80	14.8	Plastic	See summary of soil descriptions

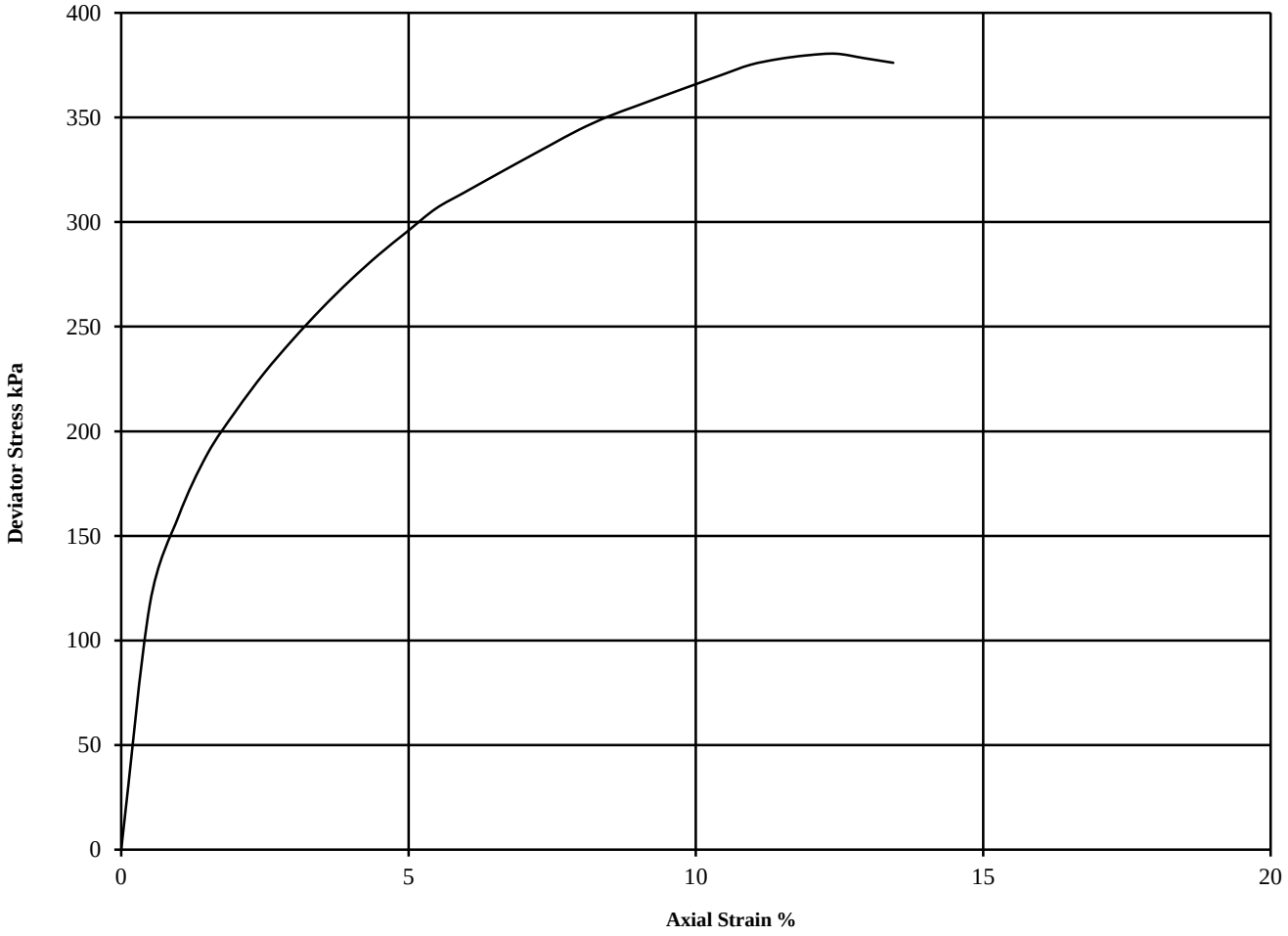
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**15.60**
Sample Number:	**143**	**Base Depth (m):**	**15.90**
Sample Type	**C**		



Diameter (mm):		102	Height (mm):		205	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	18	2.06	1.74	220	380	190	12.4	Intermediate	See summary of soil descriptions

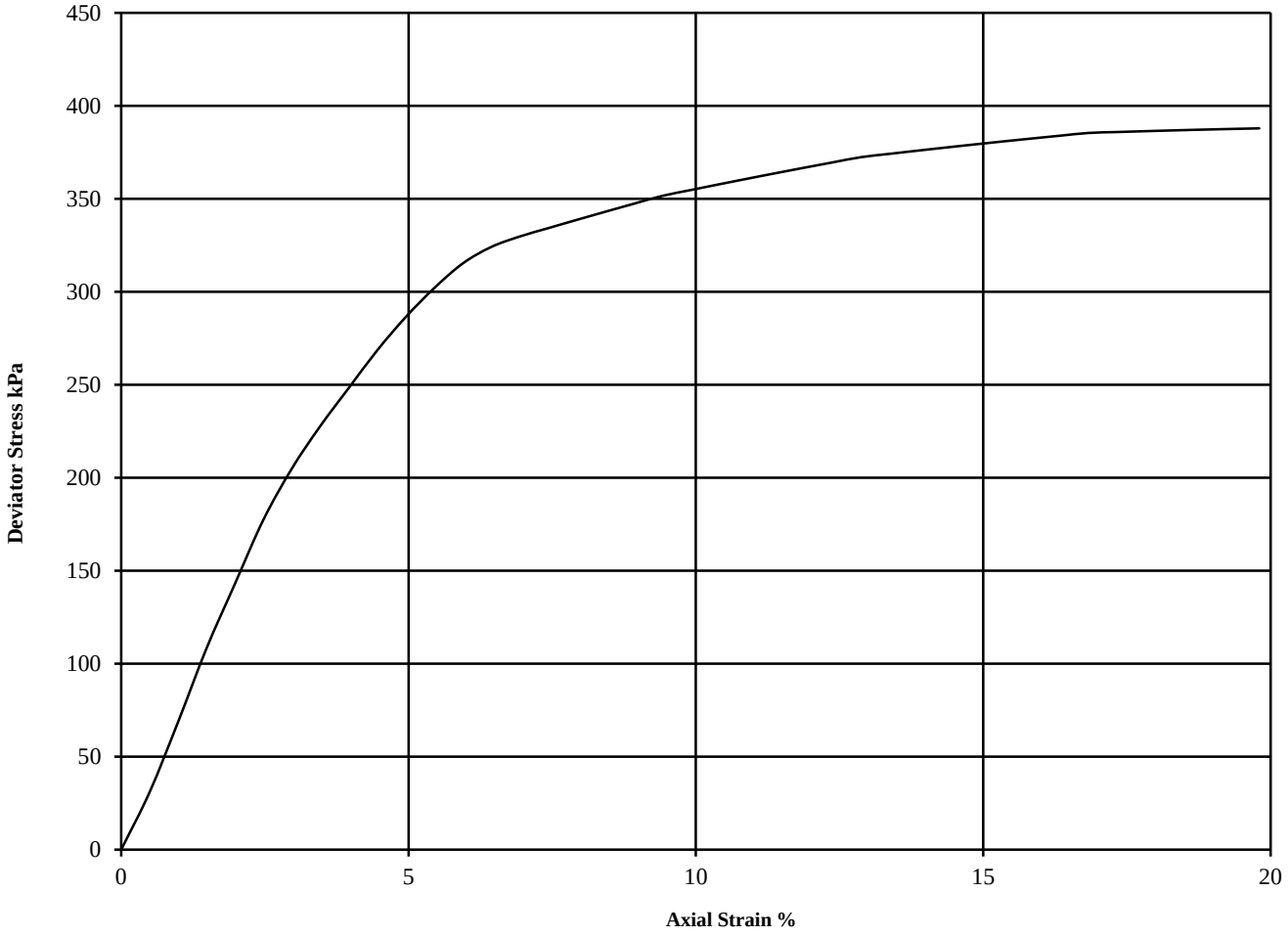
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**18.30**
Sample Number:	**151**	**Base Depth (m):**	**18.60**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		204	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	17	2.13	1.83	260	388	194	19.8	Plastic	See summary of soil descriptions

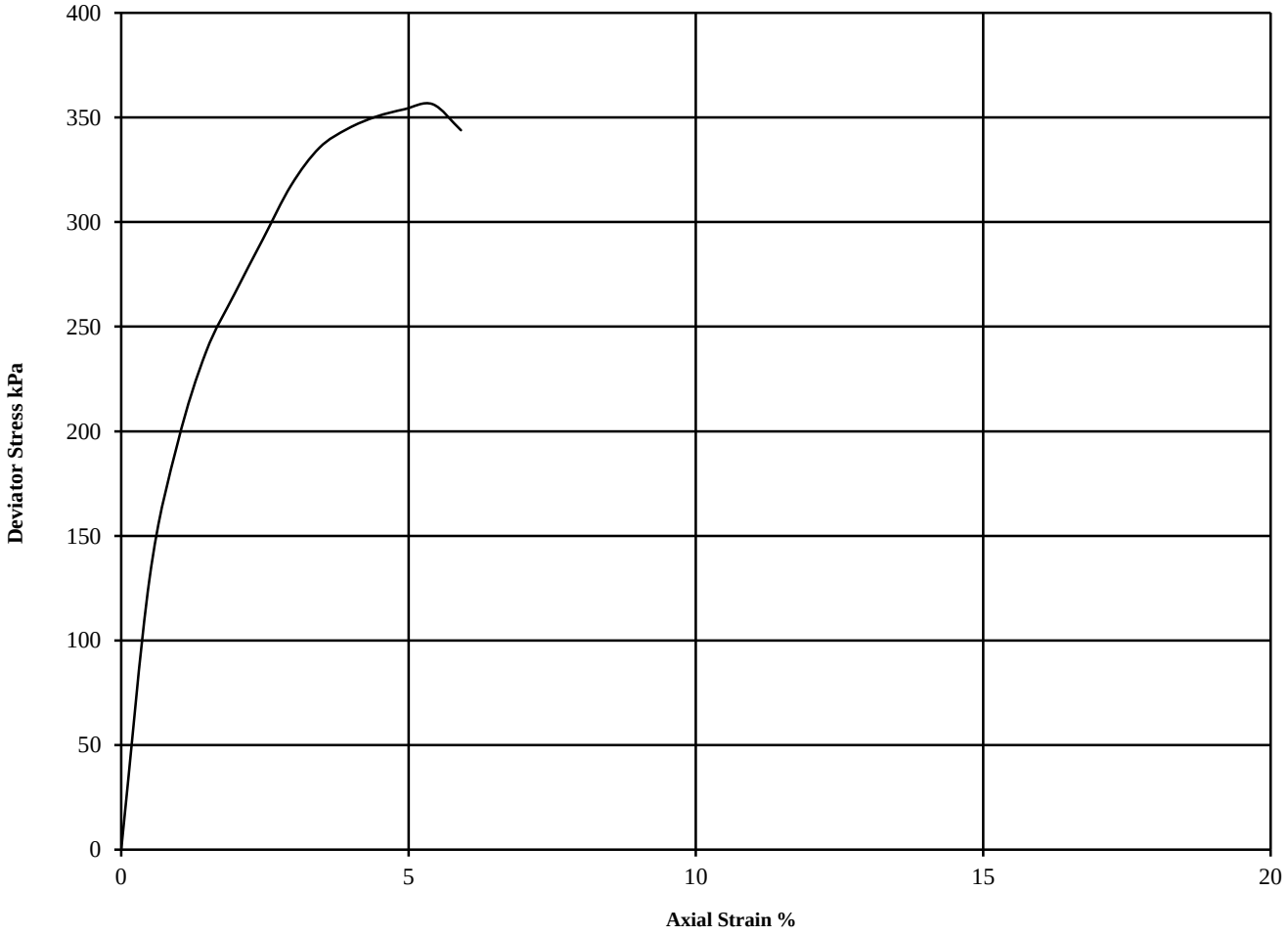
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**22.40**
Sample Number:	**161**	**Base Depth (m):**	**22.70**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		205	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.37
1	25	1.96	1.57	370	356	178	5.4	Brittle	See summary of soil descriptions

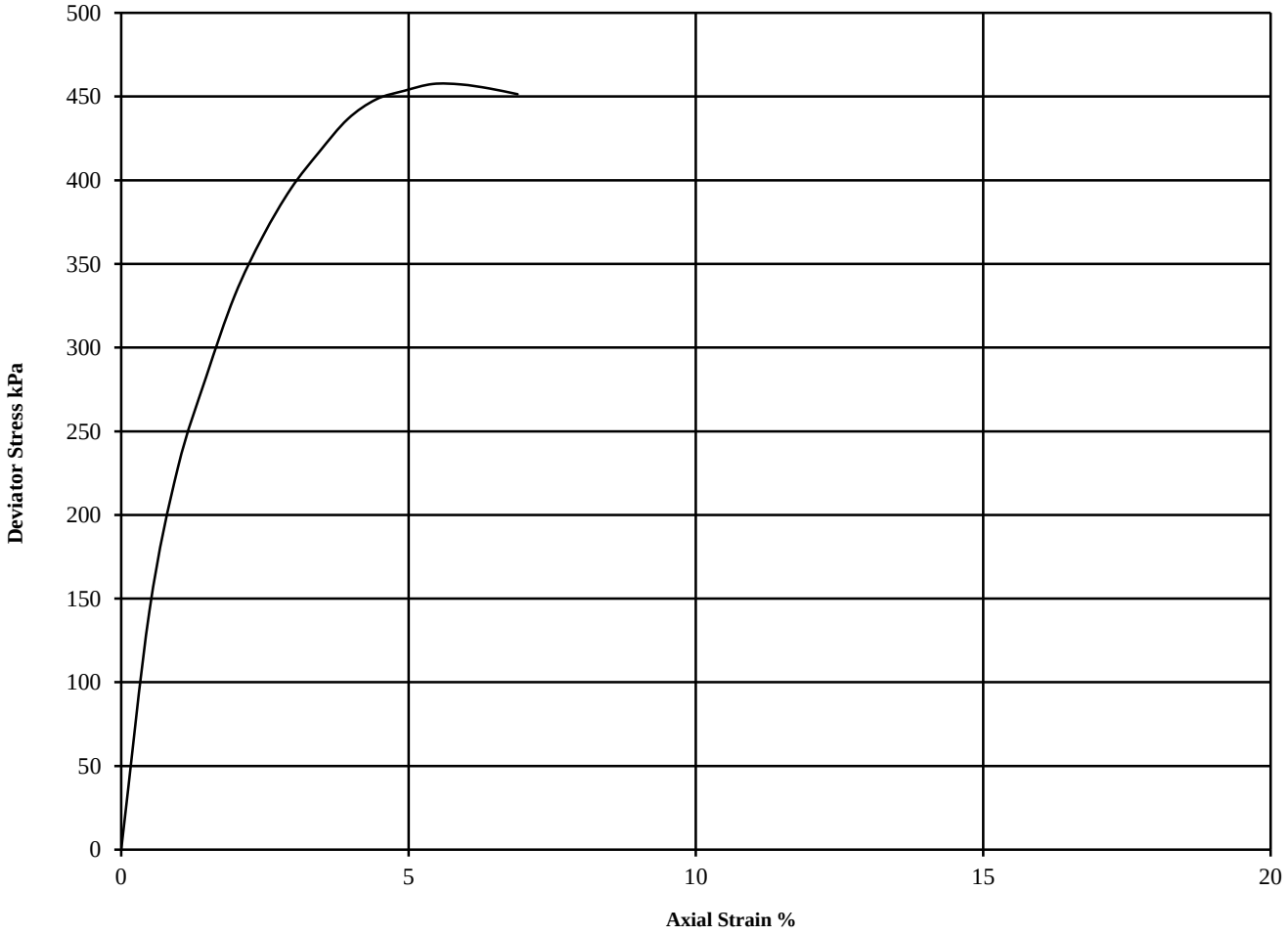
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC04**	**Top Depth (m):**	**24.30**
Sample Number:	**167**	**Base Depth (m):**	**24.60**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		205	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.37
1	25	1.98	1.58	390	458	229	5.4	Brittle	See summary of soil descriptions

ONE DIMENSIONAL CONSOLIDATION TEST

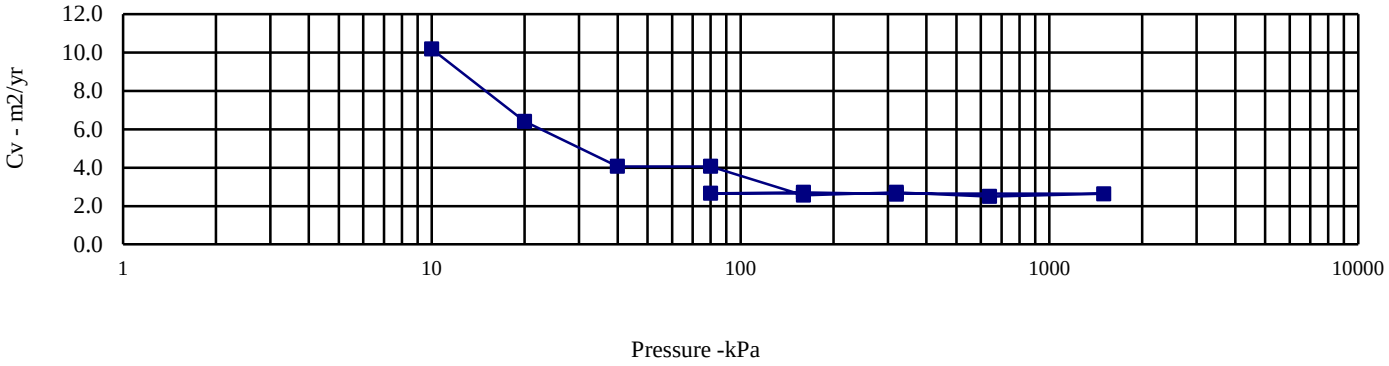
BS 1377: Part 5: 1990: Clause 3

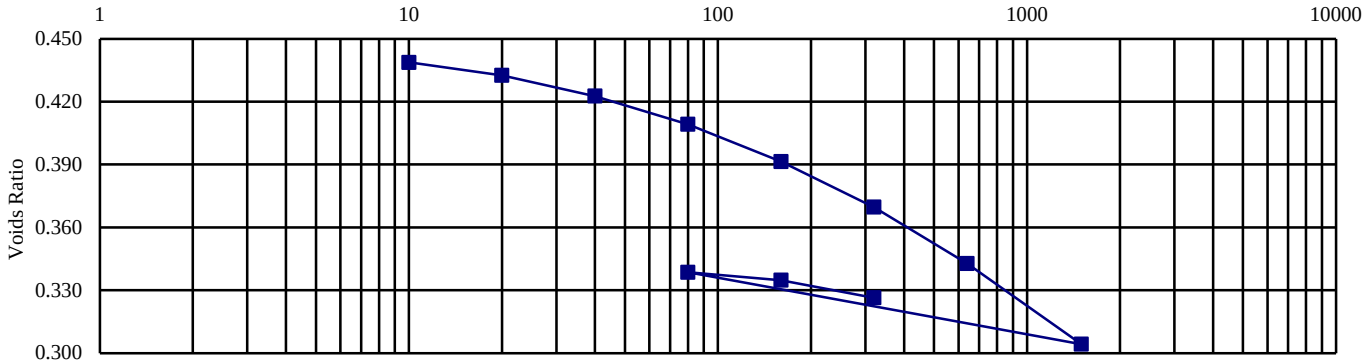
Hole Number: **RC04** **Top Depth (m):** **6.35**

Sample Number: **116** **Base Depth (m) :** **6.65**

Sample Type: **C**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	17						
Bulk Density (Mg/m3):	2.13	0	10	0.369	10.178	Method used to	
Dry Density (Mg/m3):	1.83	10	20	0.430	6.408	determine CV:	T90
Voids Ratio:	0.444	20	40	0.346	4.062	Nominal temperature	
Degree of saturation:	99.6	40	80	0.238	4.067	during test ' C:	20
Height (mm):	20.08	80	160	0.157	2.561	Remarks:	
Diameter (mm)	74.98	160	320	0.098	2.709	See summary of soil descriptions	
Particle Density (Mg/m3):	2.64	320	640	0.062	2.494		
Measured		640	1500	0.033	2.637		
		1500	80	0.019	2.660		
		80	160	0.036	2.711		
		160	320	0.039	2.622		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/5410

Client Ref: D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

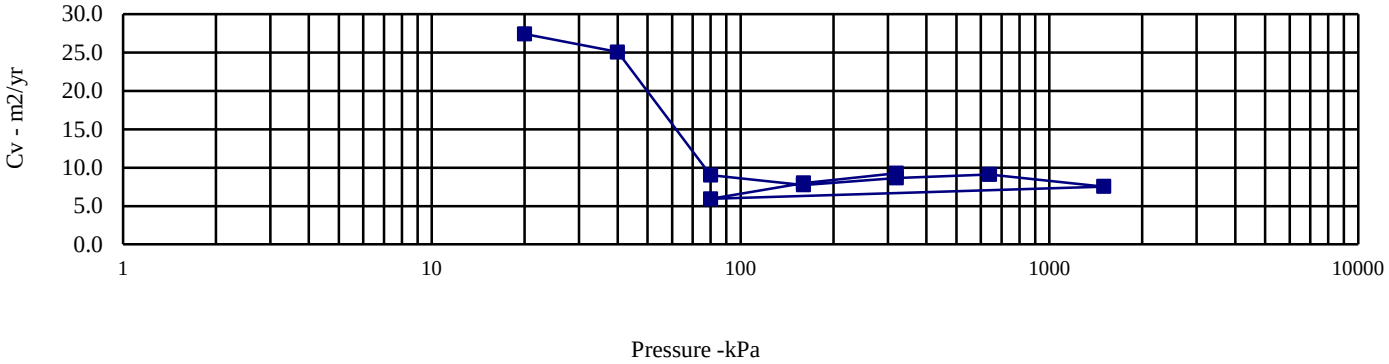
BS 1377: Part 5: 1990: Clause 3

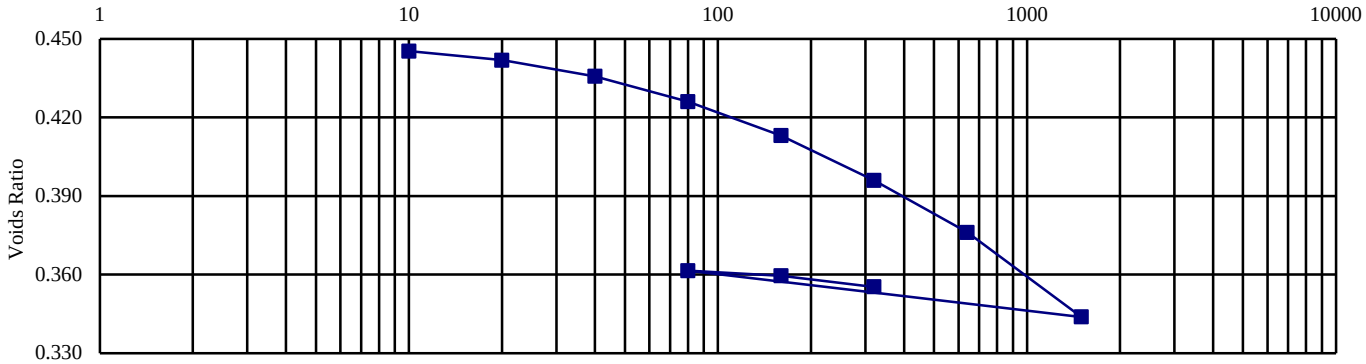
Hole Number: **RC04** **Top Depth (m):** **9.30**

Sample Number: **124** **Base Depth (m) :** **9.60**

Sample Type: **C**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Top
Moisture Content (%):	16						
Bulk Density (Mg/m3):	2.12	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.83	10	20	0.240	27.412	determine CV:	T90
Voids Ratio:	0.447	20	40	0.213	25.059	Nominal temperature	
Degree of saturation:	94.9	40	80	0.169	9.027	during test ' C:	20
Height (mm):	20.02	80	160	0.113	7.750	Remarks:	
Diameter (mm)	74.96	160	320	0.076	8.642	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	320	640	0.044	9.117		
Measured		640	1500	0.027	7.537		
		1500	80	0.009	5.942		
		80	160	0.018	8.002		
		160	320	0.020	9.281		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5410 **Client Ref:** D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

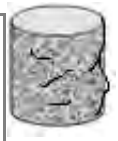
Sample Details				
	Depth			7.35-7.65m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	201.2
	Initial Sample Diameter	D_0	(mm)	104.0
	Initial Sample Weight	W_0	(gr)	3380.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.98
	Particle Density	ρ_s	(Mg/m3)	2.66

sketch showing specimen location in original sample

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	400	500	700	
Initial Back Pressure	U_{bi}	(kPa)	300	300	300	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	18			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.68			
Initial Voids Ratio	e_i	.	0.584			
Initial Degree of Saturation	S_i	(%)	81			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	17			
Final Dry Density	ρ_{df}	(Mg/m3)	1.74			
Final Voids Ratio	e_f	.	0.531			
Final Degree of Saturation	S_f	(%)	85.7			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.99	4.43	5.69	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	148.0	251.8	385.6	
Minor Stress At Failure	σ_3'	(kPa)	70.0	143.0	232.0	
Major Stress At Failure	σ_1'	(kPa)	218.0	394.8	617.6	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.115	2.761	2.662	

Notes



Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC04 7.35-7.65m
		Test Date	02/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC04
		Sample	7.35-7.65m
Client	socotec	Depth	7.35-7.65m

UKAS TESTING 4043

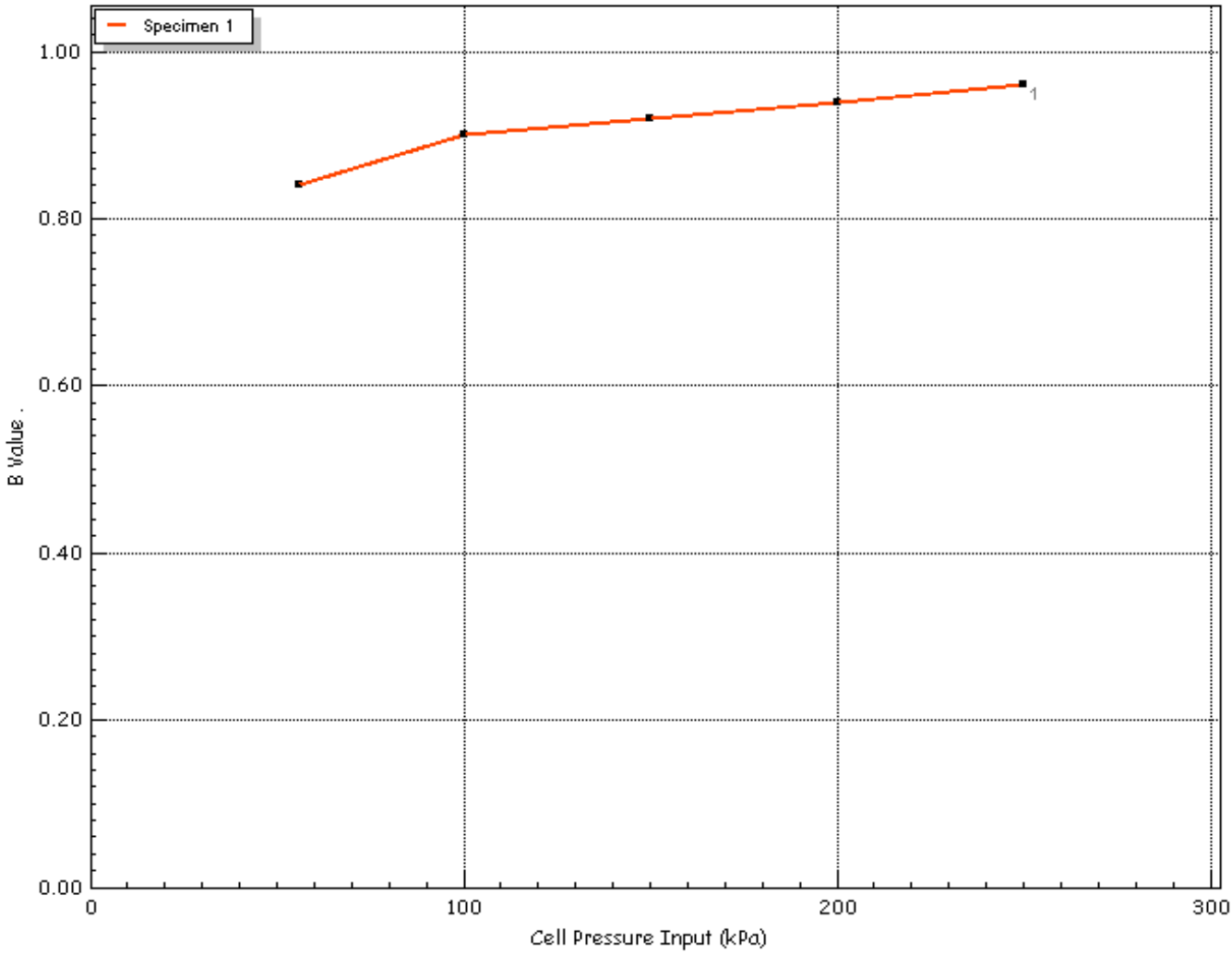
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	250
Pore Water Pressure Input	u pwp	(kPa)	225
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC04 7.35-7.65m
		Test Date	02/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC04
		Sample	7.35-7.65m
Client	socotec	Depth	7.35-7.65m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

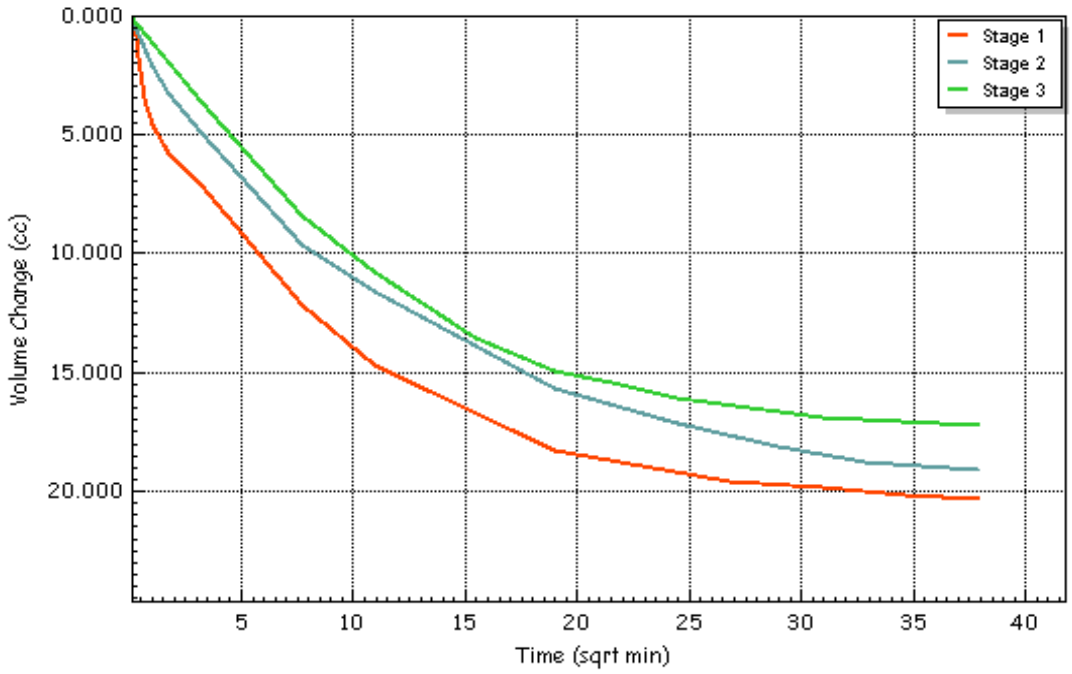
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	400	500	700
Initial Back Pressure	u_{bi}	(kPa)	300	300	300
Pore Water Pressure Input	u_{pwp}	(kPa)	371	421	639
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.19	1.12	1.01
Corrected Length	L_C	(mm)	200.4	195.7	190.1
Corrected Area	A_C	(cm2)	84.28	85.33	86.95
Corrected Volume	V_C	(cc)	1688.840	1669.779	1652.521
t100	t_{100}	(min)	156.50	230.52	233.57
Consolidation	c_v	(m2/year)	1.505	1.022	1.008
Compressibility	m_v	(m2/MN)	0.168	0.092	0.030
Test Time	t_F	(h:m:s)	04:41:42	06:54:56	07:00:25
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.03557	0.03557	0.03557

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC04 7.35-7.65m
		Test Date	02/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC04
		Sample	7.35-7.65m
Client	socotec	Depth	7.35-7.65m

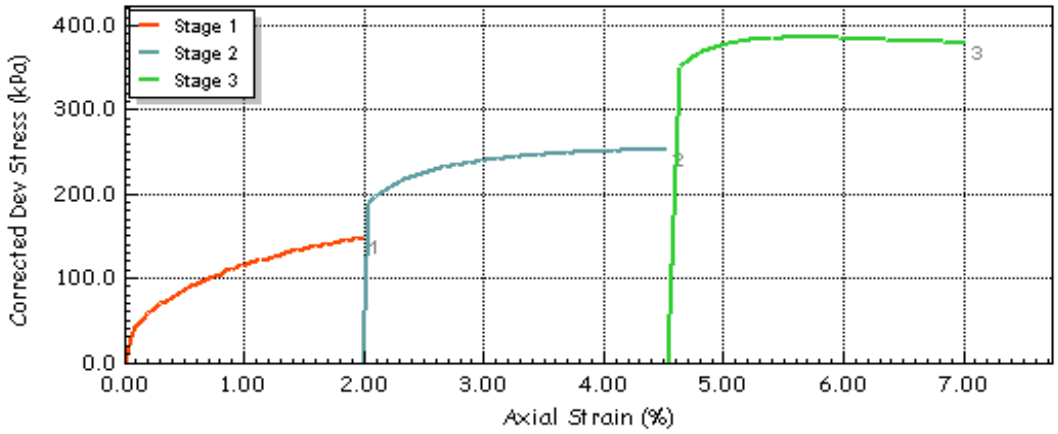
UKAS TESTING 4043

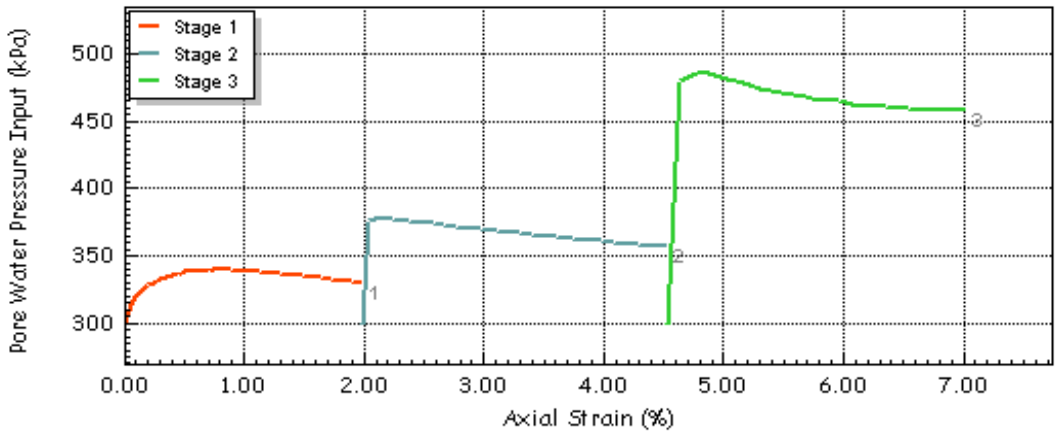
PSL PROFESSIONAL SOILS LABORATORY

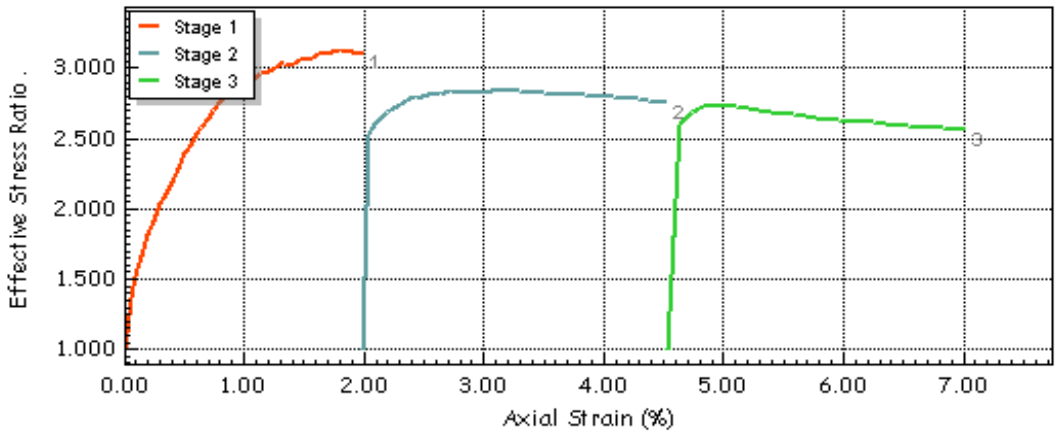
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC04 7.35-7.65m
		Test Date	02/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC04
		Sample	7.35-7.65m
Client	socotec	Depth	7.35-7.65m

UKAS TESTING 4043

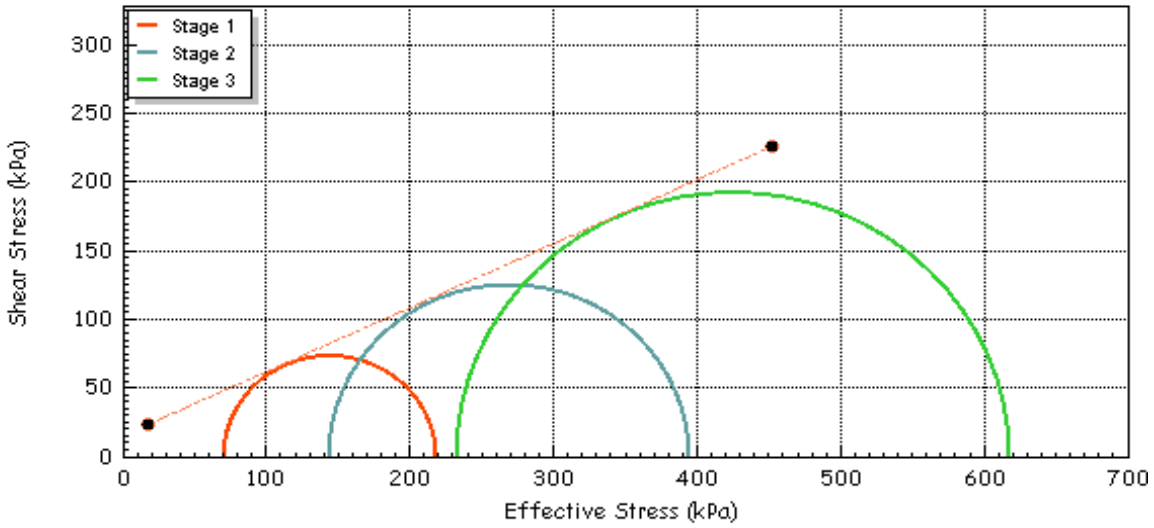
PSL PROFESSIONAL SOILS LABORATORY

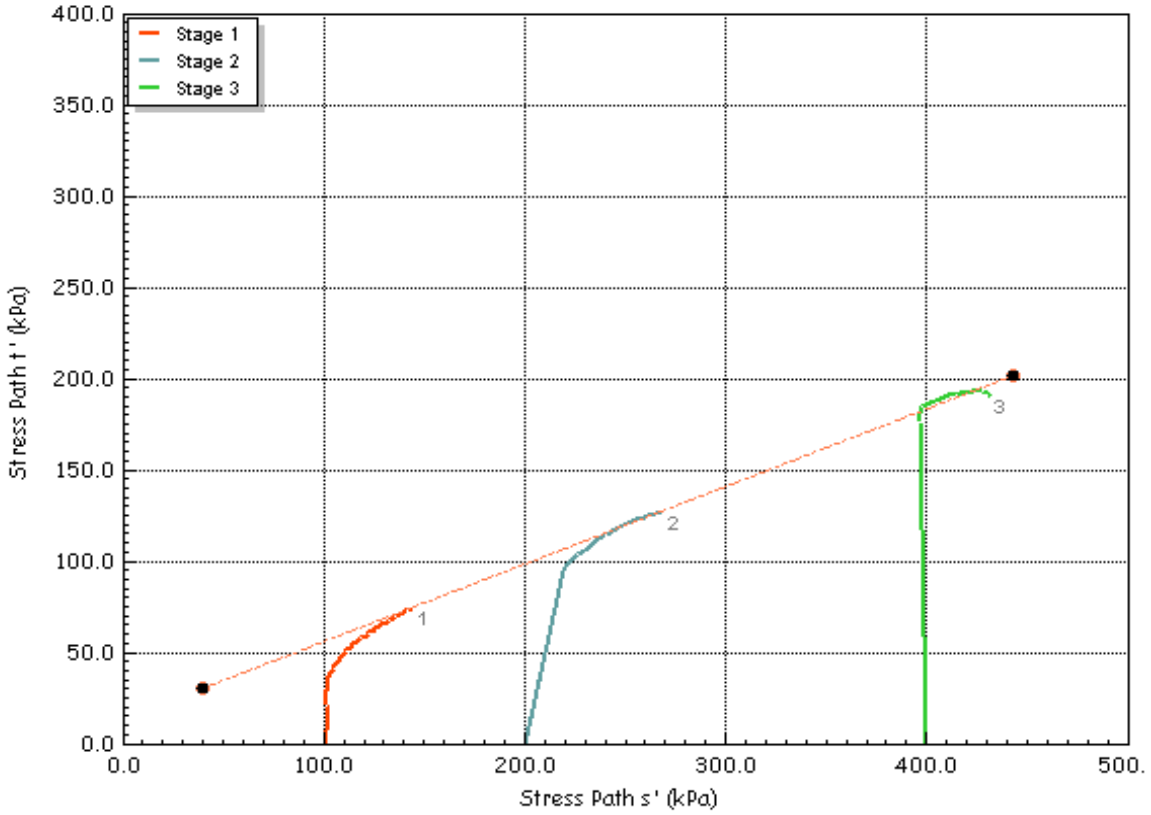
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	15.25	Effective Cohesion	c'	(kPa)	15.25
Effective Friction	ϕ'	(deg)	25.1	Effective Friction	ϕ'	(deg)	25.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC04 7.35-7.65m
		Test Date	02/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC04
		Sample	7.35-7.65m
Client	socotec	Depth	7.35-7.65m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-16884-1 *Issued:* 06-Sep-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-16884-1

Client Reference PLS22/5410

Order No (not supplied)

Contract Title Stansted Terminal 2 (STS)- Ground Investigation

Description 8 Soil samples.

Date Received 26-Aug-22

Date Started 26-Aug-22

Date Completed 06-Sep-22

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 22-16884, extra testing added.**
Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-16884-1
Client Ref PLS22/5410
Contract Title Stansted Terminal 2 (STS)- Ground Investigation

			Lab No	2051014	2051015	2051016	2051017	2051018	2051019	2051020	2051021
			.Sample ID	DS10	DS11	DS12	DS18	RC04	RC04	RC04	RC04
			Depth	2.50-2.95	2.50	1.50	0.50	2.20	4.90	16.70	22.70
			Other ID	9	7	5	6	103	111	146	162
			Sample Type	D	D	D	D	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**								
Metals											
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	< 10	16	< 10		< 10	19	28	140
Inorganics											
pH	DETSC 2008#		pH	8.0	7.4	7.9		7.8	7.5	7.5	7.2
Organic matter	DETSC 2002#	0.1	%				1.7				1.4
Chloride Aqueous Extract	DETSC 2055	1	mg/l	8.6	200	4.1		3.0	20	6.9	6.6
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0	1.3		< 1.0	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	77	380	39		41	390	450	1700
Sulphur as S, Total	DETSC 2320	0.01	%	0.02	0.48	0.02		0.02	0.31	0.42	0.36
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.06	0.22	0.04		0.05	0.19	0.24	0.42

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-16884-1
Client Ref PLS22/5410
Contract Stansted Terminal 2 (STS)- Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2051014	DS10 2.50-2.95 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051015	DS11 2.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051016	DS12 1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051017	DS18 0.50 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
2051018	RC04 2.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051019	RC04 4.90 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051020	RC04 16.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2051021	RC04 22.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 22-16884-1
Client Ref PLS22/5410
Contract Stansted Terminal 2 (STS)- Ground Investigation

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/5488

Report Date:	27 September 2022
Client's Reference:	D2027-22
Client Name:	Socotec The Oasts, Newnham Court Bearstead Road Maidstone Kent ME14 5LH
For the attention of:	**Samatha Rawlins**
Contract Title:	Stansted Terminal 2 (ST2) - Ground Investigation
Date Received:	19/8/2022
Date Commenced:	19/8/2022
Date Completed:	9/9/2022
Notes:	**Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP06	10	D	1.30		Brown mottled grey slightly gravelly slightly sandy CLAY.
CP06	16	UT	2.50	2.95	Brown mottled grey slightly gravelly slightly sandy CLAY.
CP06	17	D	3.00		Brown mottled grey very gravelly sandy CLAY.
CP06	22	D	4.00		Brown mottled grey very gravelly sandy CLAY.
CP06	23	B	4.00	4.50	Brown mottled grey slightly gravelly sandy CLAY.
CP06	27	UT	5.50	5.95	Very stiff brown mottled grey gravelly sandy CLAY.
CP06	35	UT	7.50	7.95	Very stiff brown mottled grey gravelly sandy CLAY.
CP06	37	D	8.10		Grey gravelly sandy CLAY.
CP06	44	D	10.00		Brown very gravelly very sandy CLAY.
CP07	101	UT	1.50	1.95	Brown gravelly sady CLAY.
CP07	104	D	2.10		Brown mottled grey gravelly very sandy CLAY.
CP07	109	D	3.10		Brown mottled grey gravelly sandy CLAY.
CP07	110	B	3.10	3.45	Brown mottled grey gravelly sandy CLAY.
CP07	111	UT	3.50		Brown very gravelly sandy CLAY
CP07	116	D	5.10		Brownish grey gravelly sandy CLAY.
CP07	117	B	5.10	5.45	Brownish grey slightly gravelly sandy CLAY.
CP07	118	UT	5.50	5.95	Very stiff brownish grey gravelly sandy CLAY.
CP07	129	D	8.50		Brown gravelly sandy CLAY.
CP07	133	UT	9.50	9.95	Grey very gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP07	140	UT	11.50	11.95	Brown gravelly very sandy CLAY.
CP07	142	D	12.10		Brown gravelly very sandy CLAY.
CP07	147	UT	13.50	13.95	Very stiff brownish grey gravelly sandy CLAY.
CP07	152	D	15.10		Grey gravelly very sandy CLAY.
CP07	159	D	17.10		Grey gravelly sandy CLAY.
CP07	166	D	19.10		Grey gravelly sandy CLAY.
RC02A	3	UT	3.50	3.95	Brown mottled grey slightly gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP06	10	D	1.30		15							
CP06	17	D	3.00		17			37	17	20	70	Intermediate Plasticity CI
CP06	22	D	4.00		21			37	17	20	78	Intermediate Plasticity CI
CP06	37	D	8.10		19			39	18	21	84	Intermediate Plasticity CI
CP06	44	D	10.00		21			30	16	14	72	Low Plasticity CL
CP07	101	UT	1.50	1.95			2.67					
CP07	104	D	2.10		22			35	16	19	72	Intermediate Plasticity CI
CP07	109	D	3.10		20			45	20	25	88	Intermediate Plasticity CI
CP07	111	UT	3.50				2.66					
CP07	116	D	5.10		20			35	17	18	86	Intermediate Plasticity CI
CP07	129	D	8.50		19			36	18	18	73	Intermediate Plasticity CI
CP07	133	UT	9.50	9.95			2.68					
CP07	142	D	12.10		16			35	17	18	71	Intermediate Plasticity CI
CP07	152	D	15.10		20			33	17	16	86	Low Plasticity CL
CP07	159	D	17.10		17			36	17	19	74	Intermediate Plasticity CI
CP07	166	D	19.10		17			37	18	19	88	Intermediate Plasticity CI
RC02A	3	UT	3.50	3.95			2.67					

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

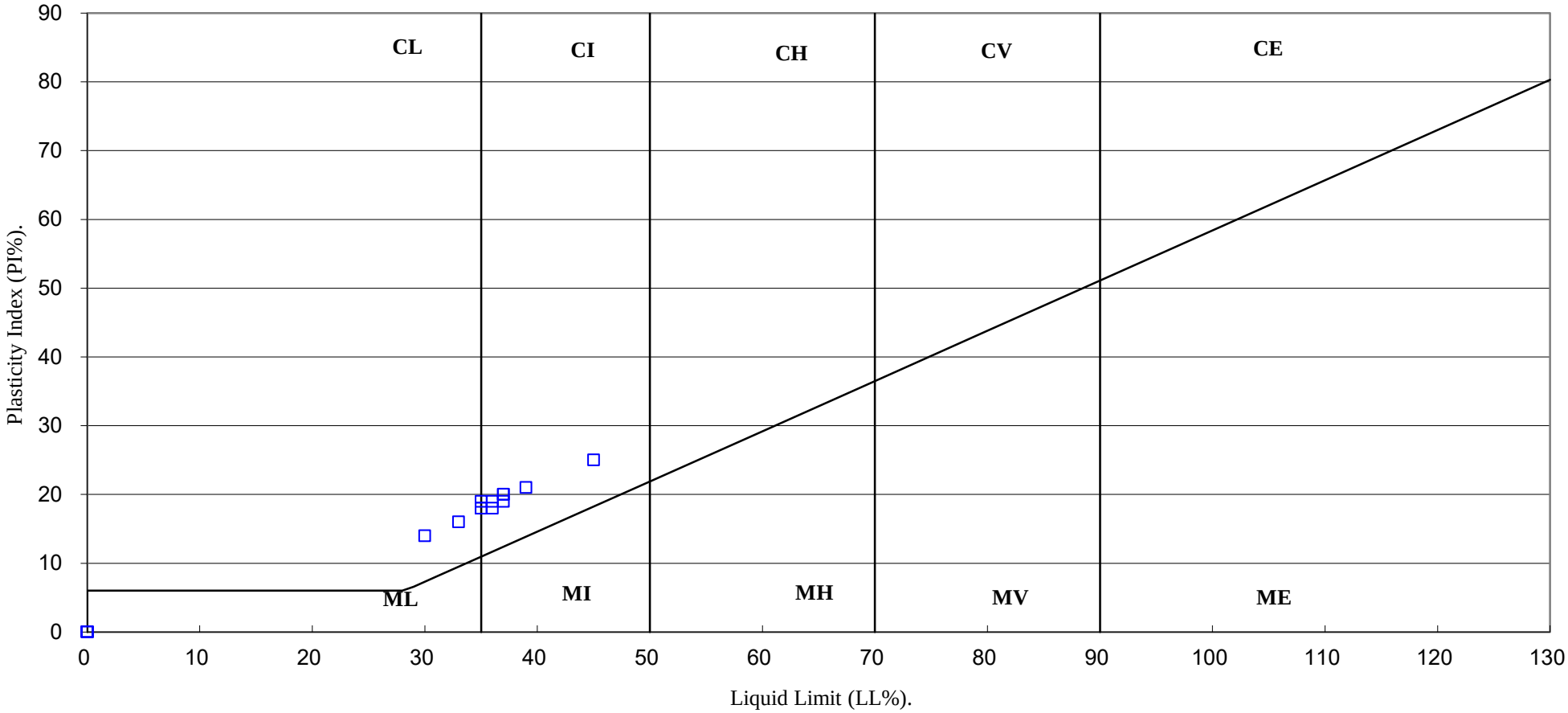
PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/5488

Client Ref: D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



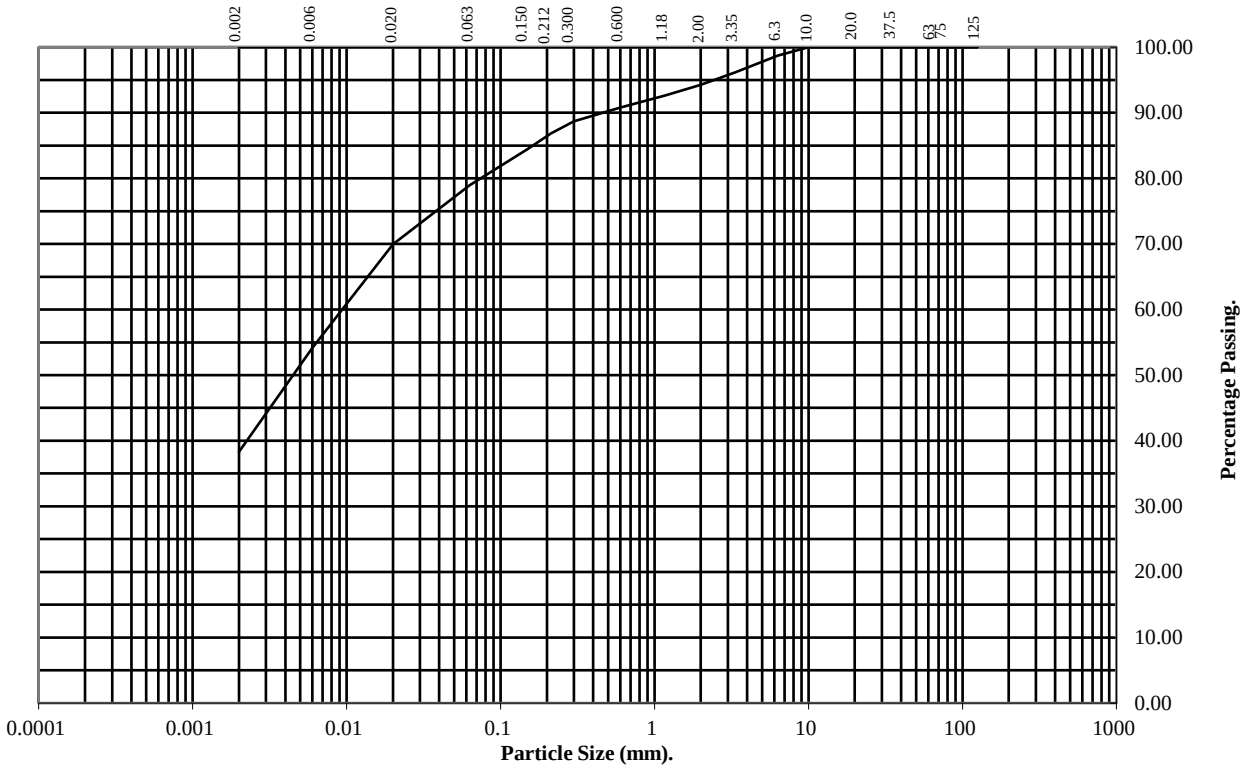
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP06**	**Top Depth (m):**	**4.00**
Sample Number:	**23**	**Base Depth(m):**	**4.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	96
2	94
1.18	93
0.6	91
0.3	89
0.212	87
0.15	84
0.063	79

Particle Diameter	Percentage Passing
0.02	70
0.006	54
0.002	38

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	15
Silt	41
Clay	38

Remarks:

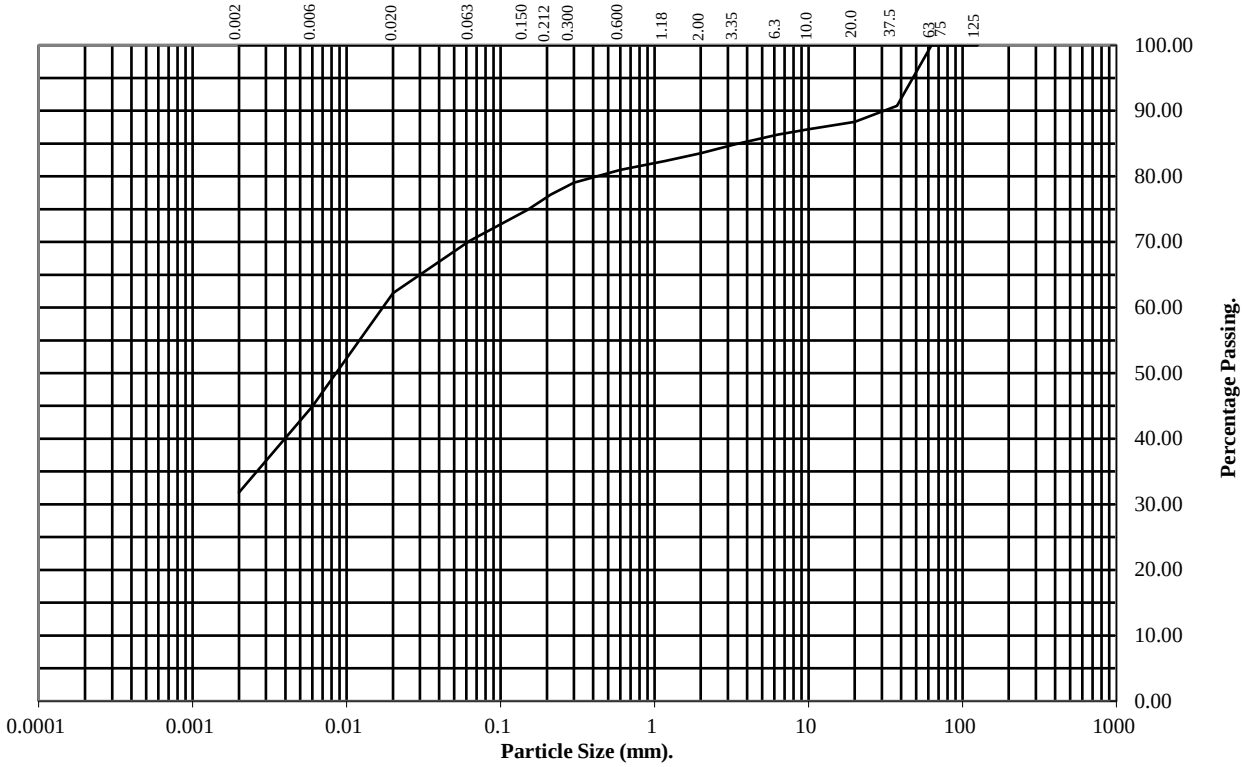
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP07**	**Top Depth (m):**	**3.10**
Sample Number:	**110**	**Base Depth(m):**	**3.45**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	91
20	88
10	87
6.3	86
3.35	85
2	84
1.18	82
0.6	81
0.3	79
0.212	77
0.15	75
0.063	70

Particle Diameter	Percentage Passing
0.02	62
0.006	45
0.002	32

Soil Fraction	Total Percentage
Cobbles	0
Gravel	16
Sand	14
Silt	38
Clay	32

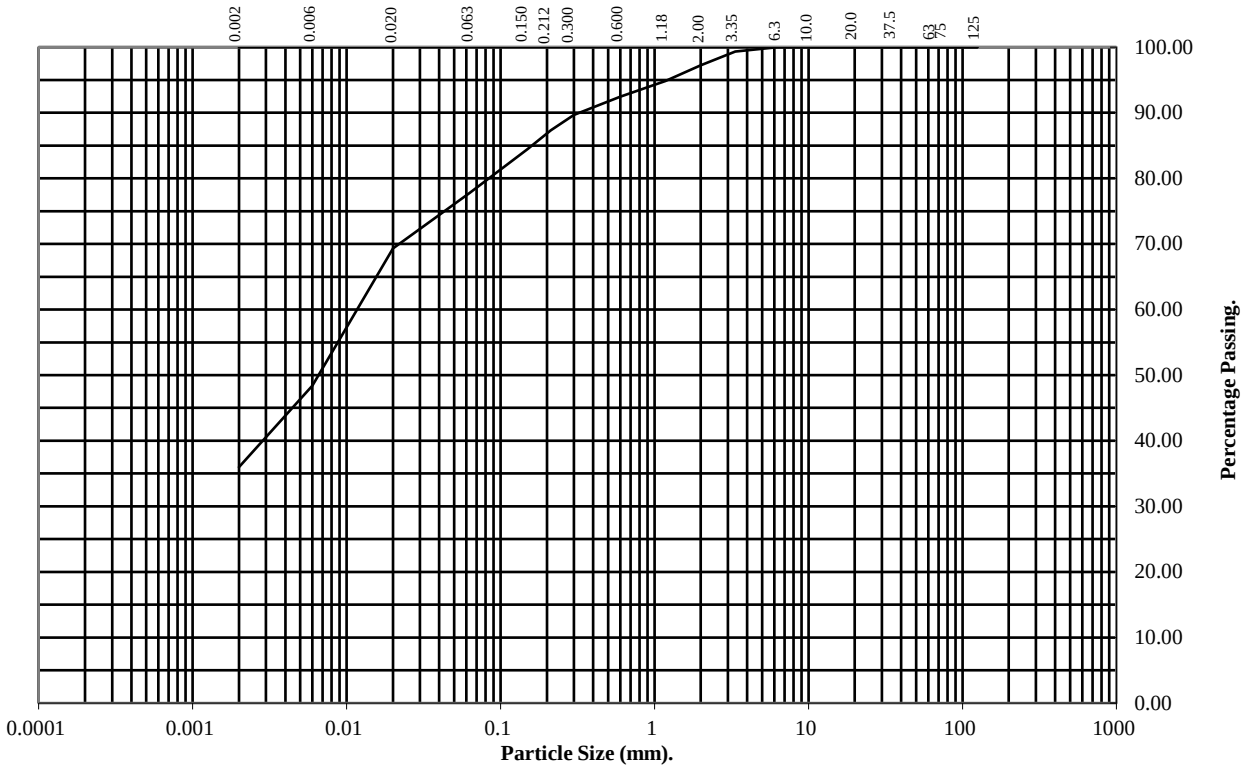
Remarks:
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP07**	**Top Depth (m):**	**5.10**
Sample Number:	**117**	**Base Depth(m):**	**5.45**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	99
2	97
1.18	95
0.6	92
0.3	90
0.212	87
0.15	84
0.063	78

Particle Diameter	Percentage Passing
0.02	69
0.006	48
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	19
Silt	42
Clay	36

Remarks:

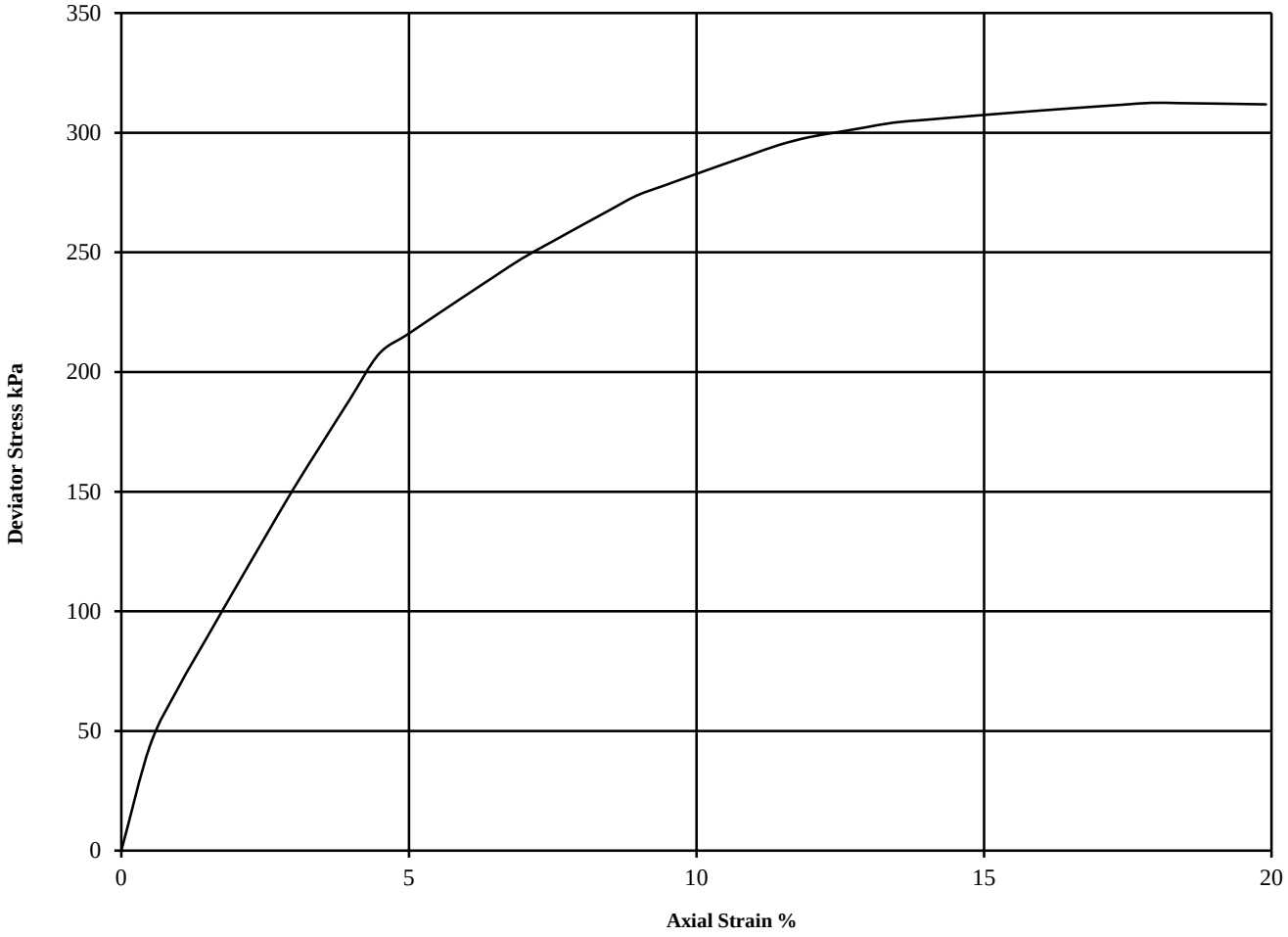
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP06**	**Top Depth (m):**	**5.50**
Sample Number:	**27**	**Base Depth (m):**	**5.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	16	2.11	1.82	100	312	156	17.9	Intermediate	See summary of soil descriptions

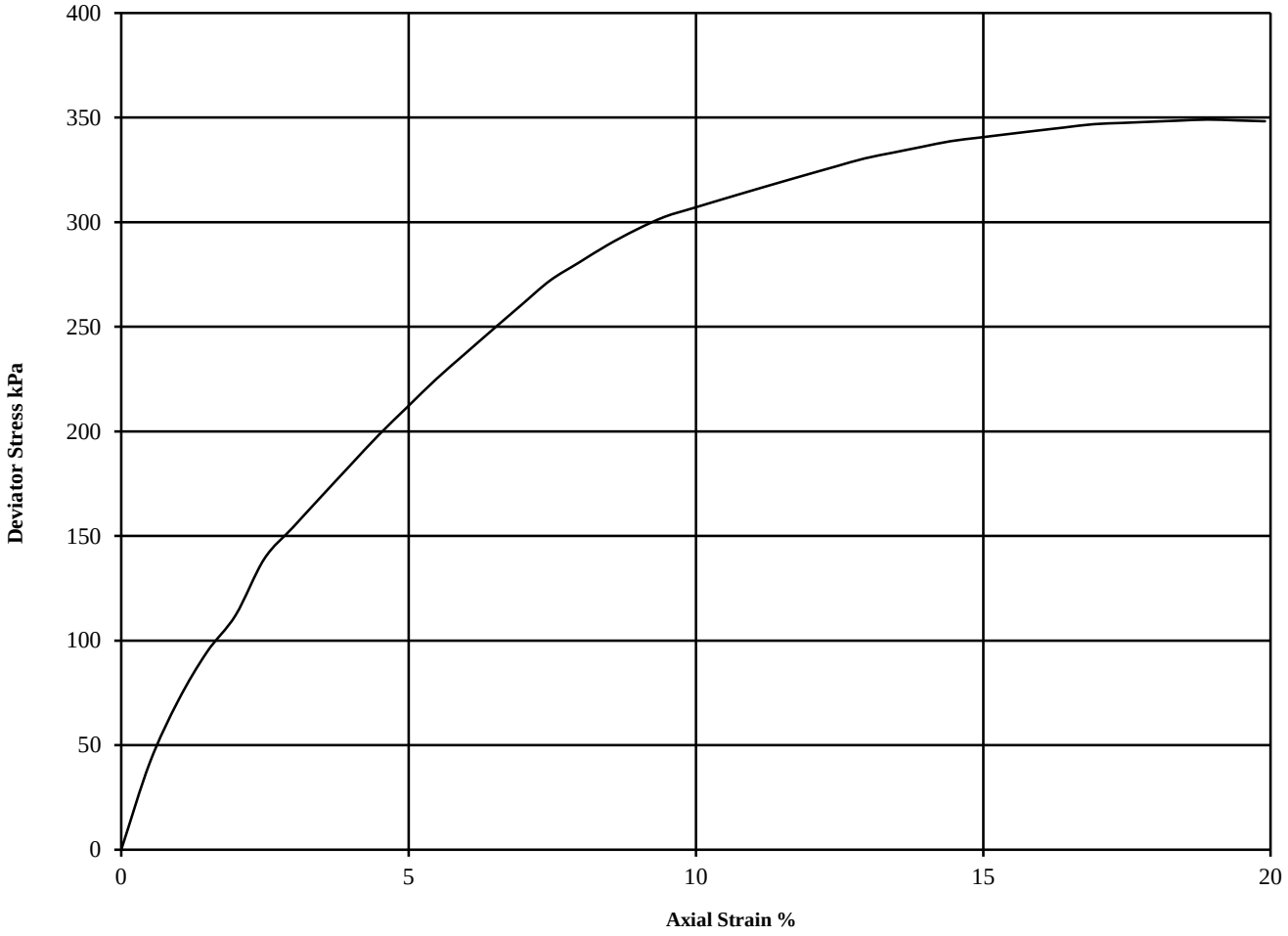
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP06**	**Top Depth (m):**	**7.50**
Sample Number:	**35**	**Base Depth (m):**	**7.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	17	2.13	1.82	140	349	175	18.9	Plastic	See summary of soil descriptions

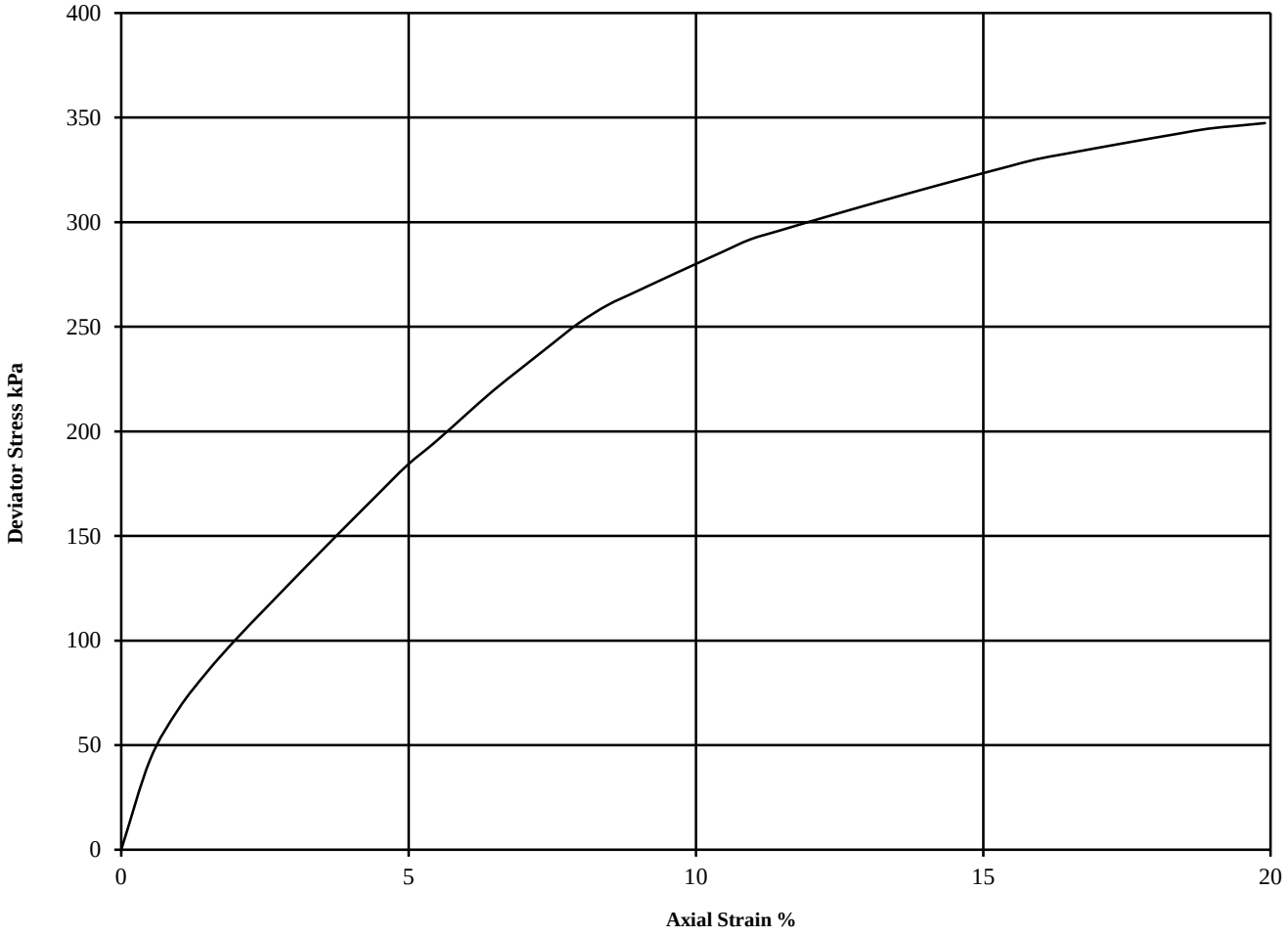
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP07**	**Top Depth (m):**	**5.50**
Sample Number:	**118**	**Base Depth (m):**	**5.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	15	2.18	1.90	110	347	174	19.9	Intermediate	See summary of soil descriptions

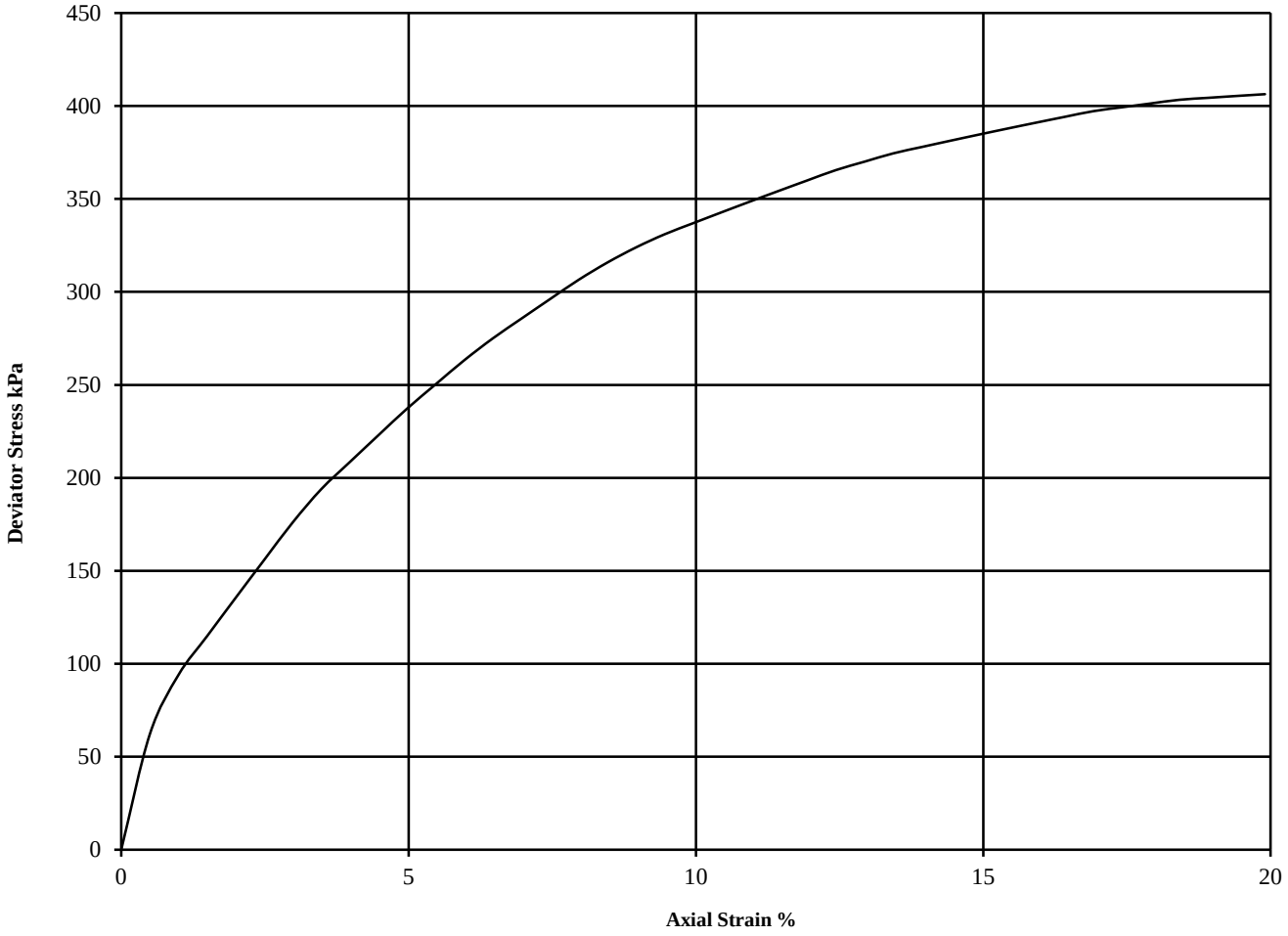
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP07**	**Top Depth (m):**	**13.50**
Sample Number:	**147**	**Base Depth (m):**	**13.95**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	16	2.19	1.88	200	406	203	19.9	Intermediate	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

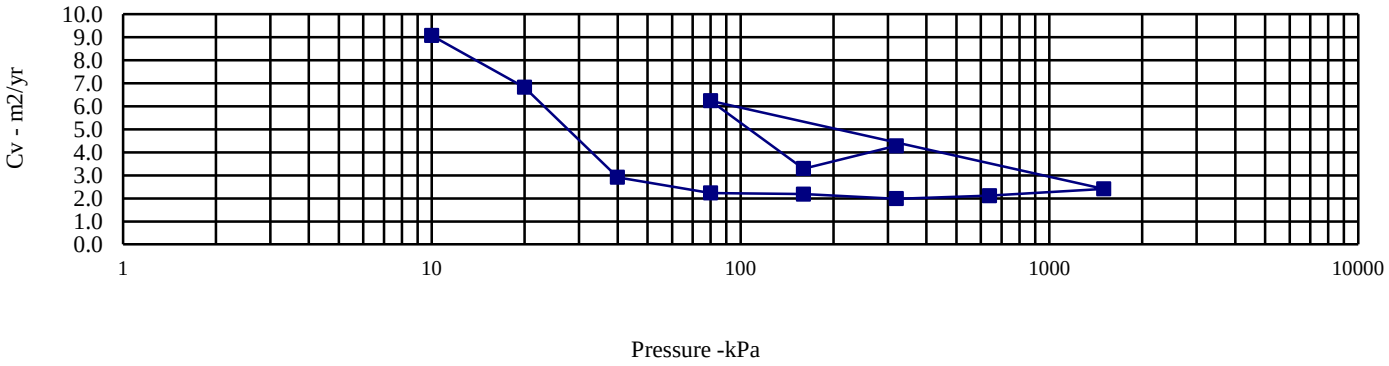
BS 1377: Part 5: 1990: Clause 3

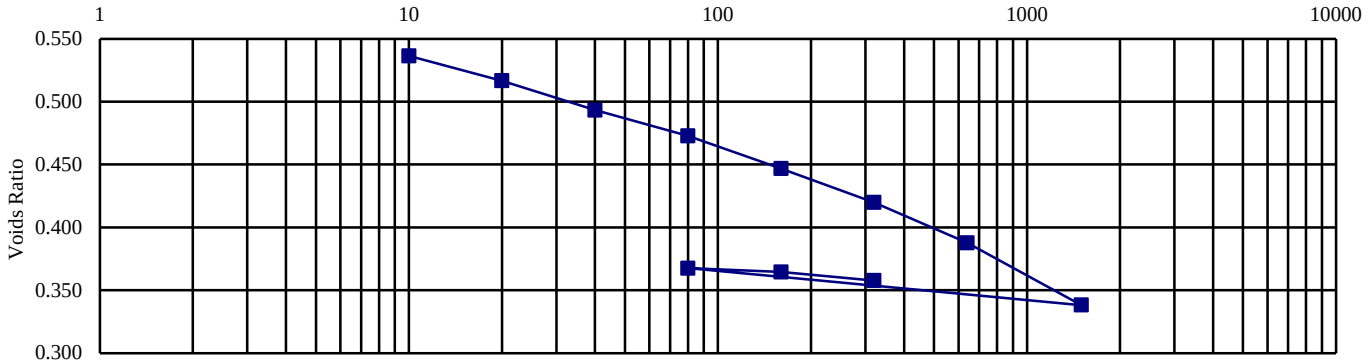
Hole Number: **CP07** **Top Depth (m):** **1.50**

Sample Number: **101** **Base Depth (m) :** **1.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	21						
Bulk Density (Mg/m3):	2.07	0	10	1.535	9.071	Method used to	
Dry Density (Mg/m3):	1.71	10	20	1.289	6.817	determine CV:	T90
Voids Ratio:	0.560	20	40	0.769	2.914	Nominal temperature	
Degree of saturation:	99.9	40	80	0.345	2.236	during test ' C:	20
Height (mm):	20.006	80	160	0.220	2.185	Remarks:	
Diameter (mm)	75.085	160	320	0.116	1.987	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.67	320	640	0.071	2.116		
		640	1500	0.042	2.407		
		1500	80	0.015	6.239		
		80	160	0.029	3.290		
		160	320	0.031	4.280		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5488 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

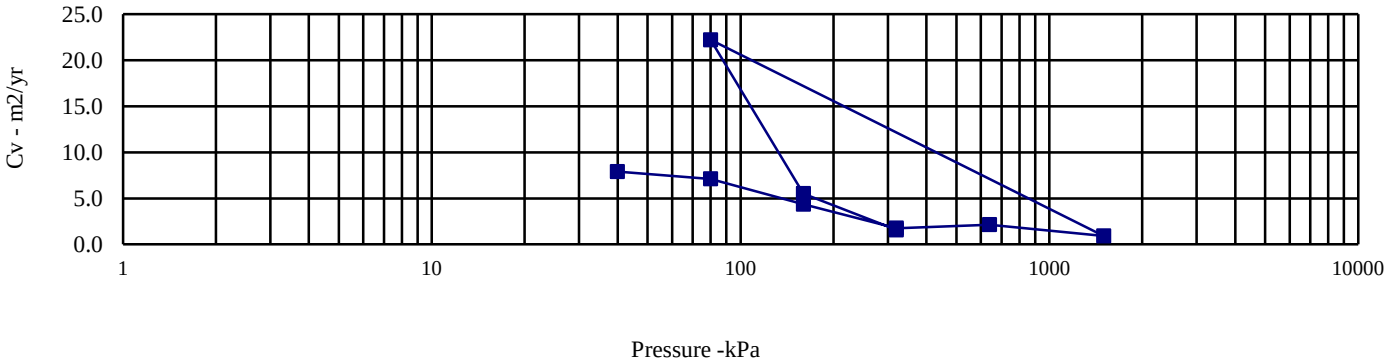
BS 1377: Part 5: 1990: Clause 3

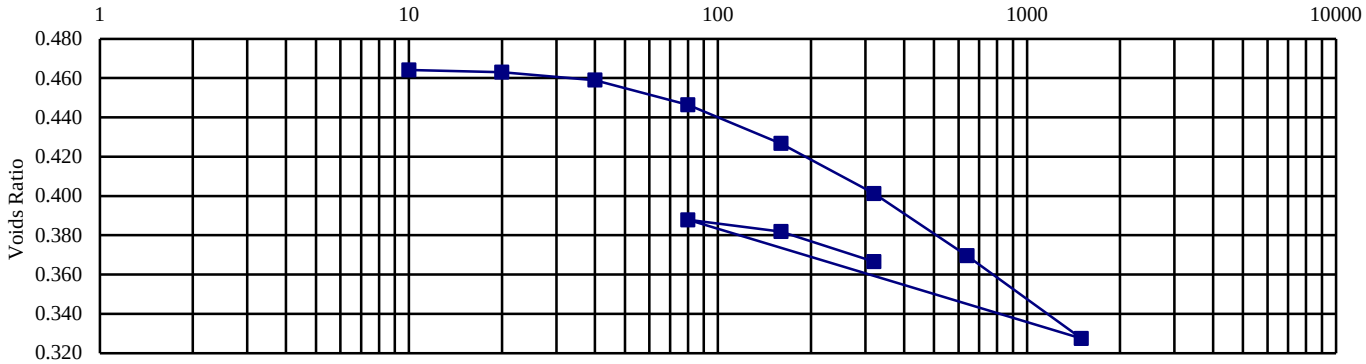
Hole Number: **CP07** **Top Depth (m):** **3.50**

Sample Number: **111** **Base Depth (m) :** **3.45**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	17						
Bulk Density (Mg/m3):	2.11	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.81	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.471	20	40	0.140	7.887	Nominal temperature	
Degree of saturation:	95.3	40	80	0.215	7.100	during test ' C:	20
Height (mm):	20.046	80	160	0.170	4.372	Remarks:	
Diameter (mm)	75.023	160	320	0.112	1.764	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.66	320	640	0.071	2.139		
		640	1500	0.036	0.931		
		1500	80	0.032	22.201		
		80	160	0.054	5.514		
		160	320	0.069	1.571		





ONE DIMENSIONAL CONSOLIDATION TEST

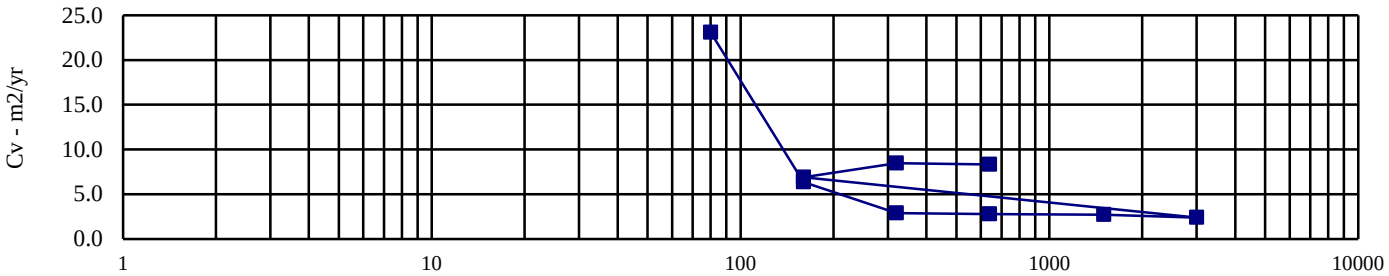
BS 1377: Part 5: 1990: Clause 3

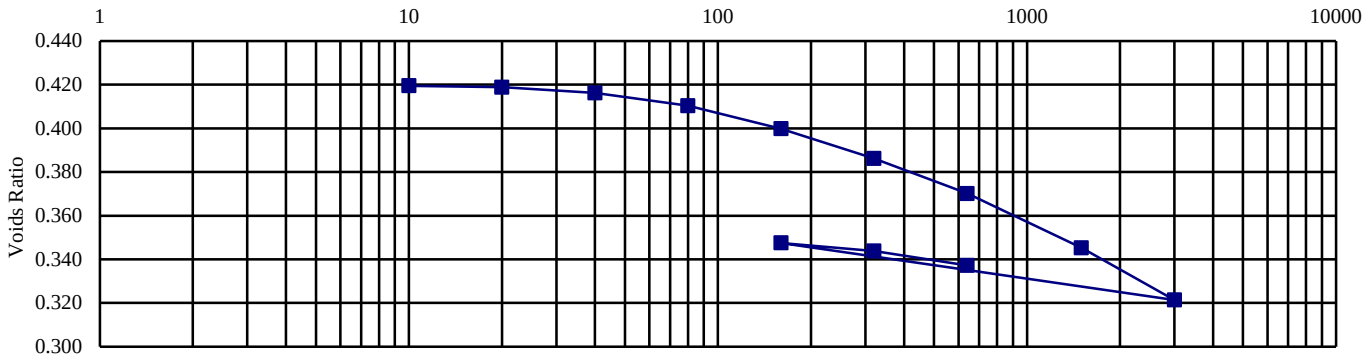
Hole Number: **CP07** **Top Depth (m):** **9.50**

Sample Number: **133** **Base Depth (m) :** **9.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	16						
Bulk Density (Mg/m3):	2.19	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.89	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.419	20	40	Swelling	Swelling	Nominal temperature	
Degree of saturation:	103.8	40	80	0.103	23.093	during test ' C:	20
Height (mm):	20	80	160	0.093	6.367	Remarks:	
Diameter (mm)	74.993	160	320	0.061	2.893	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.68	320	640	0.036	2.788		
		640	1500	0.021	2.719		
		1500	3000	0.012	2.398		
		3000	160	0.007	6.885		
		160	320	0.017	8.472		
		320	640	0.015	8.316		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/5488
Client Ref:
D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

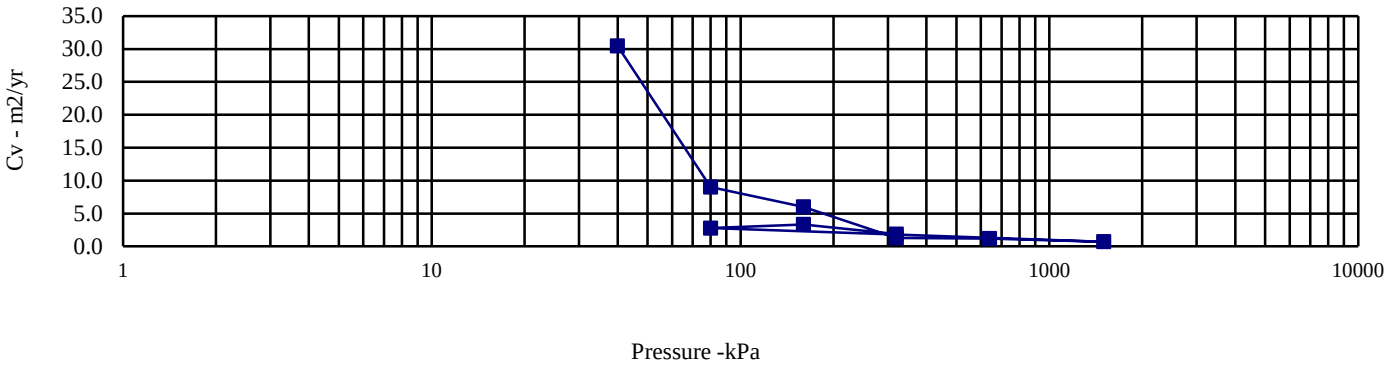
BS 1377: Part 5: 1990: Clause 3

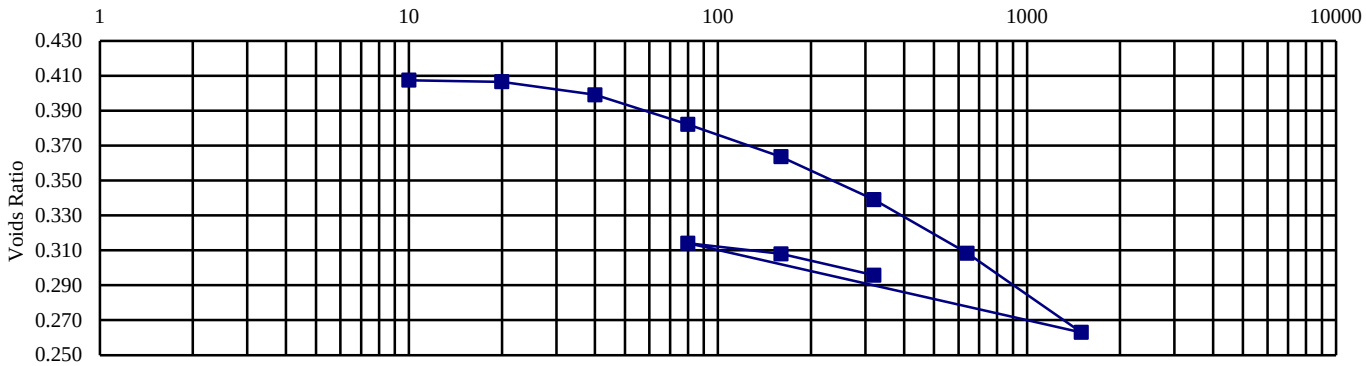
Hole Number: **RC02A** **Top Depth (m):** **3.50**

Sample Number: **3** **Base Depth (m) :** **3.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	14						
Bulk Density (Mg/m3):	2.14	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.87	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.429	20	40	0.266	30.439	Nominal temperature	
Degree of saturation:	89.2	40	80	0.302	9.022	during test ' C:	20
Height (mm):	20.05	80	160	0.168	6.002	Remarks:	
Diameter (mm)	75.045	160	320	0.113	1.270	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.67	320	640	0.072	1.178		
		640	1500	0.040	0.696		
		1500	80	0.028	2.785		
		80	160	0.058	3.325		
		160	320	0.059	1.865		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)- Ground Investigation

Contract No:
PSL22/5488
Client Ref:
D2027-22

Sample Description & Split Describe

Hole Number:	**CP06**	**Top Depth (m):**	**2.50**
Sample Number:	**16**	**Base Depth (m):**	**2.95**
Sample Type:	**UT**	**Sample Date:**	

Sample Description:

2.50-2.66m - Firm to stiff brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is sub-rounded, mostly chalk.

2.66-2.67m - Break in sample

2.67-2.80m - Soft to firm brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is sub-rounded, mostly chalk.

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth		11.50-11.95m UT140	
	Description		See summary of soil descriptions.	
	Type		Undisturbed, vertical orientation.	
	Initial Sample Length	L_0	(mm)	211.5
	Initial Sample Diameter	D_0	(mm)	105.2
	Initial Sample Weight	W_0	(gr)	3702.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.01
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	1050	1150	1350	
Initial Back Pressure	U_{bi}	(kPa)	950	950	950	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	15			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.74			
Initial Voids Ratio	e_i	.	0.525			
Initial Degree of Saturation	S_i	(%)	78			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	15			
Final Dry Density	ρ_{df}	(Mg/m3)	1.82			
Final Voids Ratio	e_f	.	0.463			
Final Degree of Saturation	S_f	(%)	88.8			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	2.82	5.99	20.00	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	134.0	277.0	704.5	
Minor Stress At Failure	σ_3'	(kPa)	79.0	182.0	490.0	
Major Stress At Failure	σ_1'	(kPa)	213.0	459.0	1194.5	
Principal Stress At Failure	σ_1'/σ_3'		2.696	2.522	2.438	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP07 11.50-11.95m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP07
		Sample	11.50-11.95m
Client	socotec	Depth	11.50-11.95m

UKAS TESTING 4043

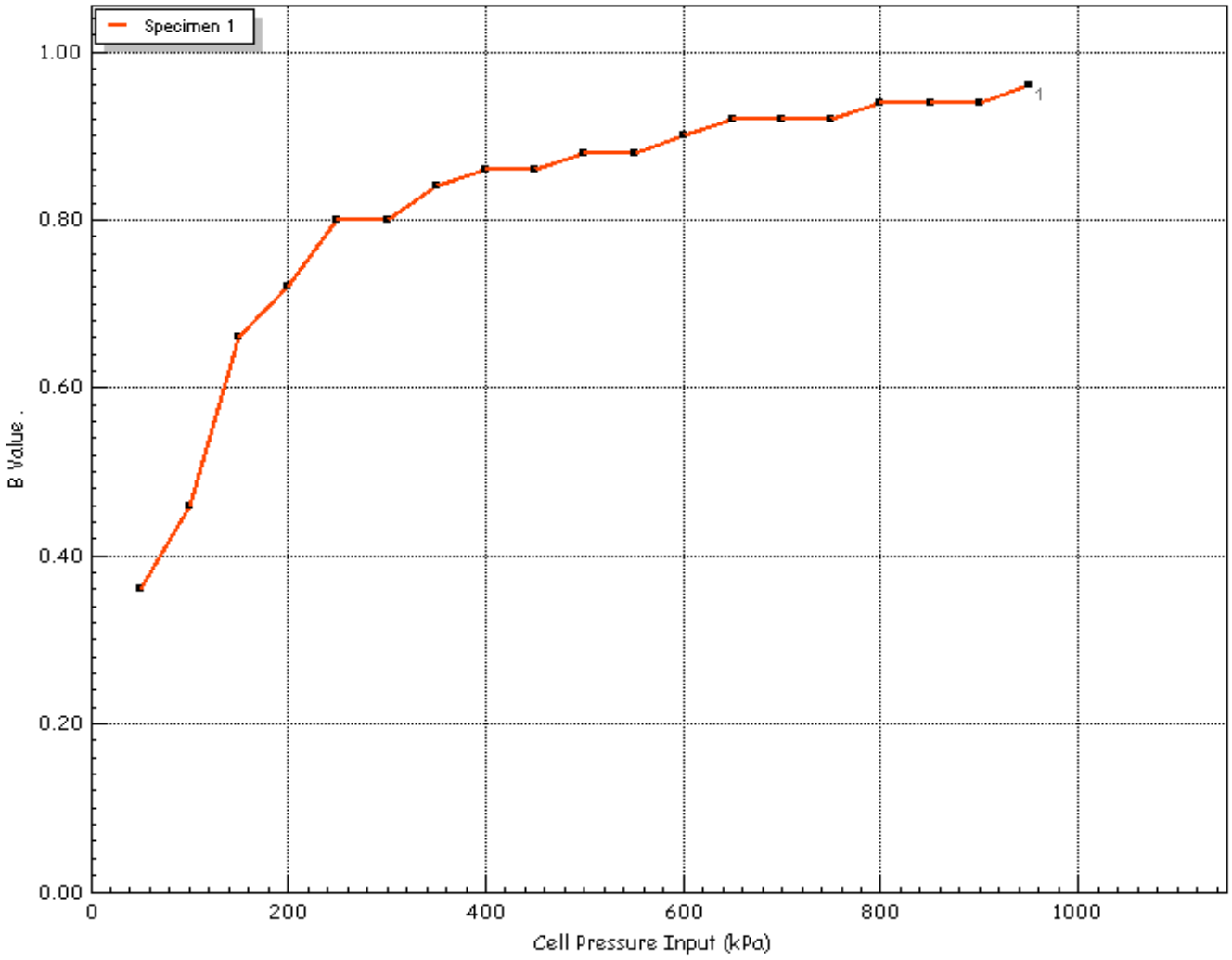
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	950
Pore Water Pressure Input	u pwp	(kPa)	927
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP07 11.50-11.95m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP07
		Sample	11.50-11.95m
Client	socotec	Depth	11.50-11.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

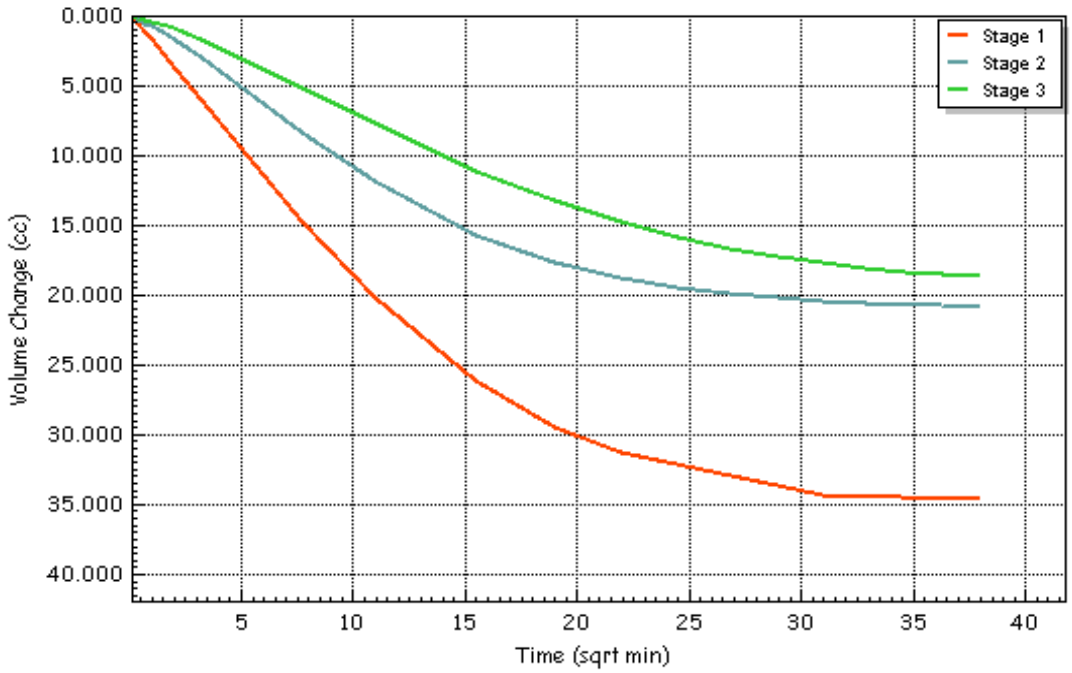
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	1050	1150	1350
Initial Back Pressure	u_{bi}	(kPa)	950	950	950
Pore Water Pressure Input	u_{pwp}	(kPa)	1022	1068	1184
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.88	1.14	1.02
Corrected Length	L_C	(mm)	210.2	203.5	195.1
Corrected Area	A_C	(cm2)	85.83	87.63	90.44
Corrected Volume	V_C	(cc)	1803.753	1782.874	1764.156
t100	t_{100}	(min)	325.66	365.48	590.32
Consolidation	c_v	(m2/year)	0.702	0.625	0.387
Compressibility	m_v	(m2/MN)	0.261	0.096	0.044
Test Time	t_F	(h:m:s)	09:46:11	10:57:51	17:42:34
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.01793	0.01793	0.01793

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP07 11.50-11.95m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP07
		Sample	11.50-11.95m
Client	socotec	Depth	11.50-11.95m

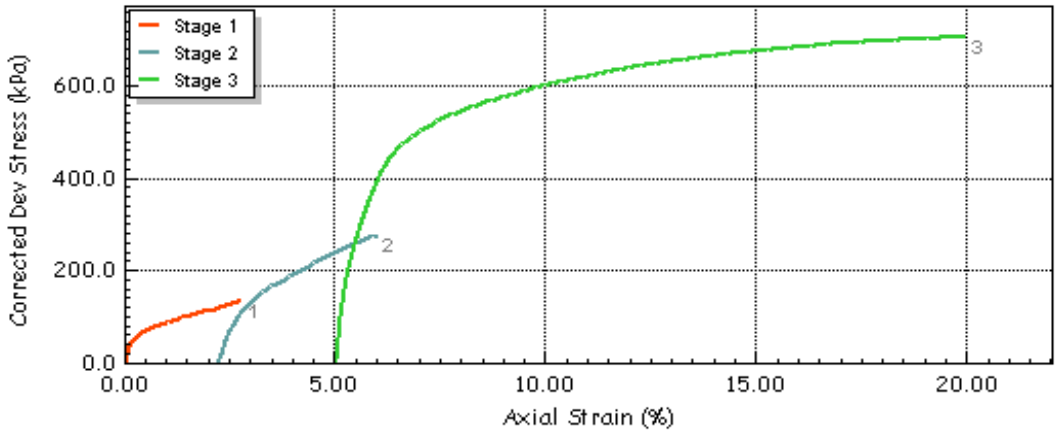
UKAS TESTING 4043

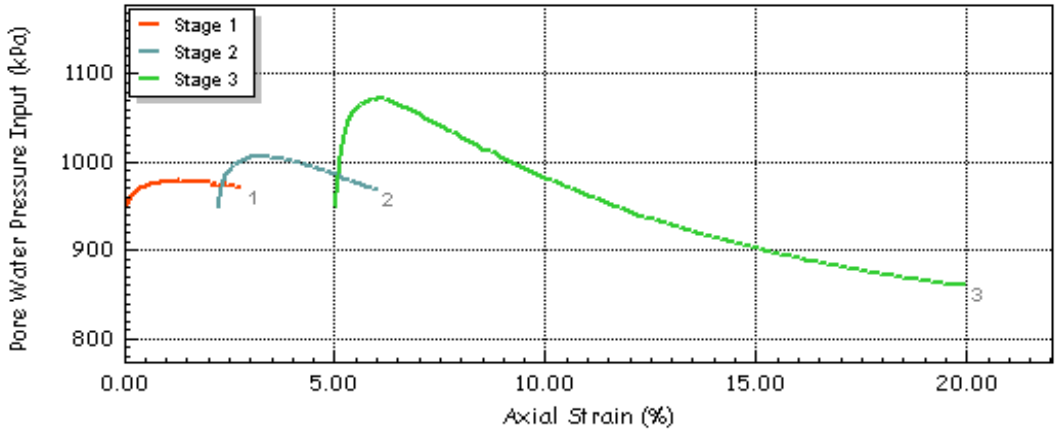
PSL PROFESSIONAL SOILS LABORATORY

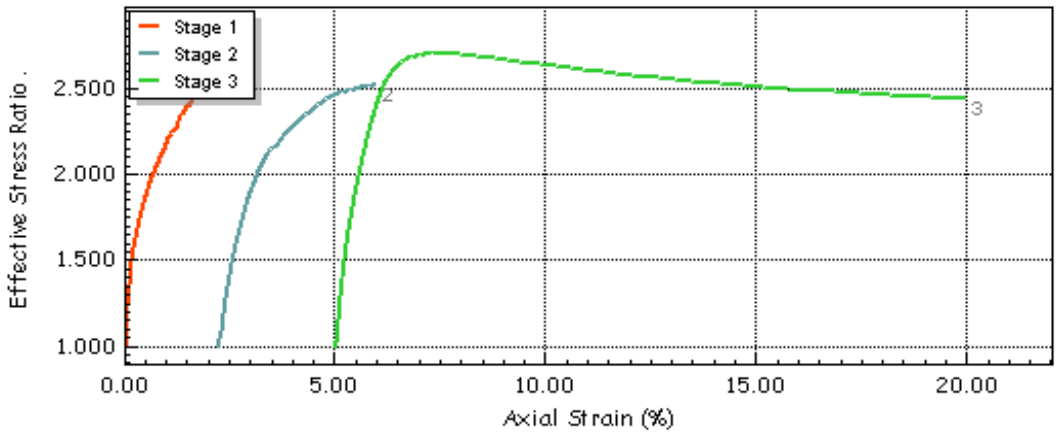
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP07 11.50-11.95m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP07
		Sample	11.50-11.95m
Client	socotec	Depth	11.50-11.95m

UKAS TESTING 4043

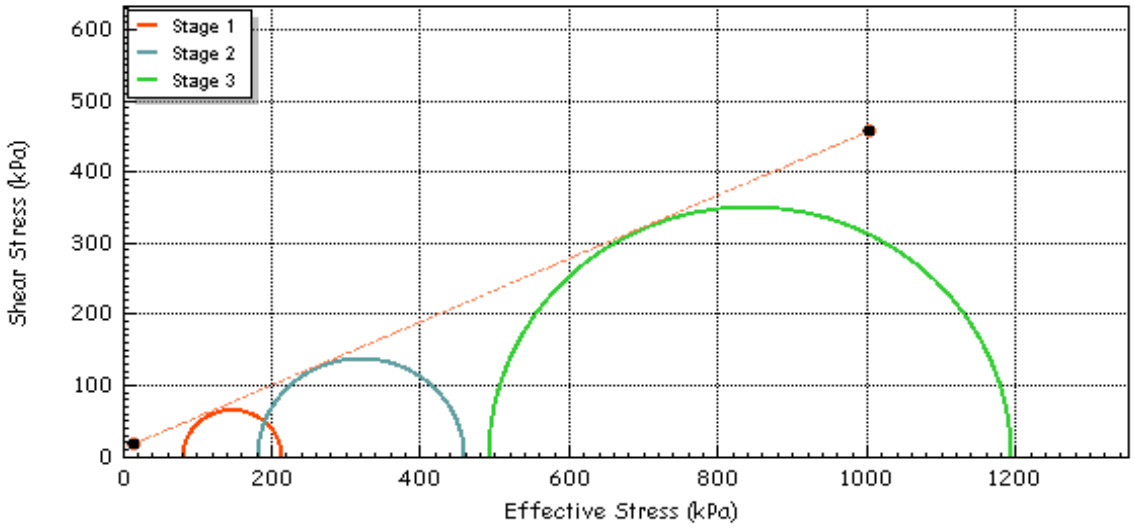
PSL PROFESSIONAL SOILS LABORATORY

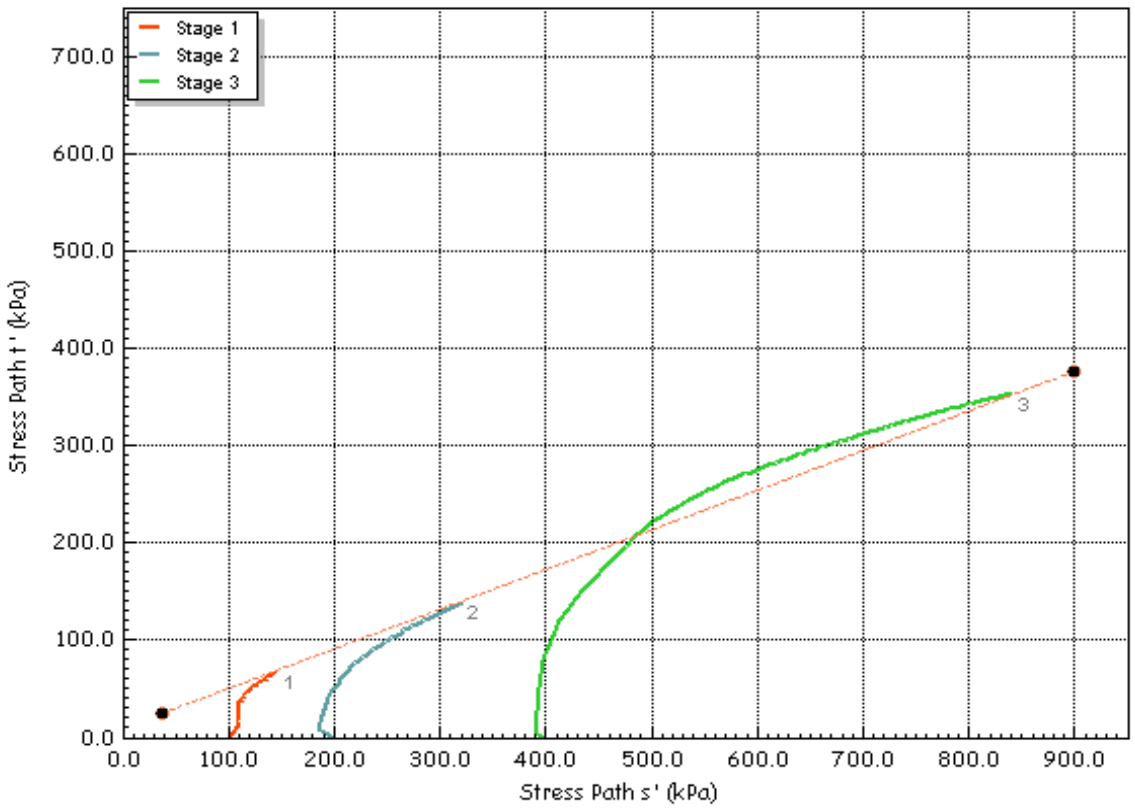
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	11.16	Effective Cohesion	c'	(kPa)	11.16
Effective Friction	ϕ'	(deg)	24.1	Effective Friction	ϕ'	(deg)	24.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP07 11.50-11.95m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP07
		Sample	11.50-11.95m
Client	socotec	Depth	11.50-11.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-17193 *Issued:* 06-Sep-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-17193

Client Reference PSL22/5488

Order No (not supplied)

Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

Description One Soil sample.

Date Received 01-Sep-22

Date Started 01-Sep-22

Date Completed 06-Sep-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-17193
Client Ref PSL22/5488
Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

Lab No	2052585
.Sample ID	CP07
Depth	7.10
Other ID	123
Sample Type	SOIL
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
Metals				
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	27
Inorganics				
pH	DETSC 2008#		pH	7.6
Chloride Aqueous Extract	DETSC 2055	1	mg/l	4.9
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	460
Sulphur as S, Total	DETSC 2320	0.01	%	0.37
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.18

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-17193
Client Ref PSL22/5488
Contract Stansted Terminal 2 (ST2) - Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2052585	CP07 7.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

ANALYTICAL TEST REPORT

Contract no:	115685
Contract name:	Stansted Terminal 2 (ST2) - Ground Investigation
Client reference:	PSL22/5488
Clients name:	Professional Soils Laboratory
Clients address:	5/7 Hexthorpe Road Doncaster DN4 0AR
Samples received:	11 November 2022
Analysis started:	11 November 2022
Analysis completed:	17 November 2022
Report issued:	17 November 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: [redacted]

Abbie Neasham-Bourn

Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			115685-1
Sample id			CP06
Depth (m)			1.30
Sample Type			D
Date sampled			-
Test	Method	Units	
Total Organic Carbon (TOC)	CE197	% w/w C	0.9
Estimate of OMC (calculated from TOC)	CE197	% w/w	1.5

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE197	Estimate of OMC (calculated from TOC)	Calculation from Total Organic Carbon	Dry		0.1	% w/w

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.

LABORATORY REPORT

4043

Contract Number: PSL22/5489

Report Date: 14 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 19/8/2022
Date Commenced: 19/8/2022
Date Completed: 7/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail:

LABORATORY REPORT

4043

Contract Number: PSL22/5489

Report Date: 07 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 19/8/2022
Date Commenced: 19/8/2022
Date Completed: 7/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
		[redacted]
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC02	10	D	1.20		Brown very gravelly sandy CLAY.
RC02	101	D	1.90		Brown very gravelly sandy CLAY.
RC02	107	D	3.70		Brown mottled grey very gravelly sandy CLAY.
RC02	112	D	5.40		Grey very gravelly very sandy CLAY.
RC02	114	C	6.10	6.40	Brown gravelly very sandy CLAY.
RC02	116	C	6.65	6.90	CU
RC02	117	D	7.00		Grey very gravelly very sandy CLAY.
RC02	120	C	7.60	7.90	Firm brown mottled grey gravelly sandy CLAY.
RC02	124	D	9.00		Grey very gravelly very sandy CLAY.
RC02	130	C	11.40	11.70	Firm brown mottled grey very gravelly sandy CLAY.
RC02	134	D	12.70		Grey very gravelly sandy CLAY.
RC02	139	C	14.40	14.70	CU
RC02	142	C	15.50	15.80	Very stiff brown mottled grey gravelly sandy CLAY.
RC02	146	C	17.00	17.30	Very stiff brown mottled grey gravelly sandy CLAY.
RC02	150	D	19.20		Grey very gravelly sandy CLAY.
RC02	155	C	20.90	21.20	Very stiff brown mottled grey gravelly very sandy CLAY.
RC02	161	C	23.00	23.30	Very stiff brown slightly sandy CLAY.
RC02	163	D	24.00		Brown very gravelly slightly sandy CLAY.
RC02	167	C	25.10	25.40	Stiff brown slightly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
RC02	10	D	1.20		17							
RC02	101	D	1.90		14			40	20	20	70	Intermediate Plasticity CI
RC02	107	D	3.70		16			38	19	19	65	Intermediate Plasticity CI
RC02	112	D	5.40		15			32	16	16	65	Low Plasticity CL
RC02	114	C	6.10	6.40			2.61					
RC02	117	D	7.00		17			31	16	15	75	Low Plasticity CL
RC02	124	D	9.00		21			32	16	16	70	Low Plasticity CL
RC02	134	D	12.70		21			42	20	22	65	Intermediate Plasticity CI
RC02	150	D	19.20		16			36	18	18	70	Intermediate Plasticity CI
RC02	163	D	24.00		22			63	27	36	60	High Plasticity CH

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)- Ground Investigation

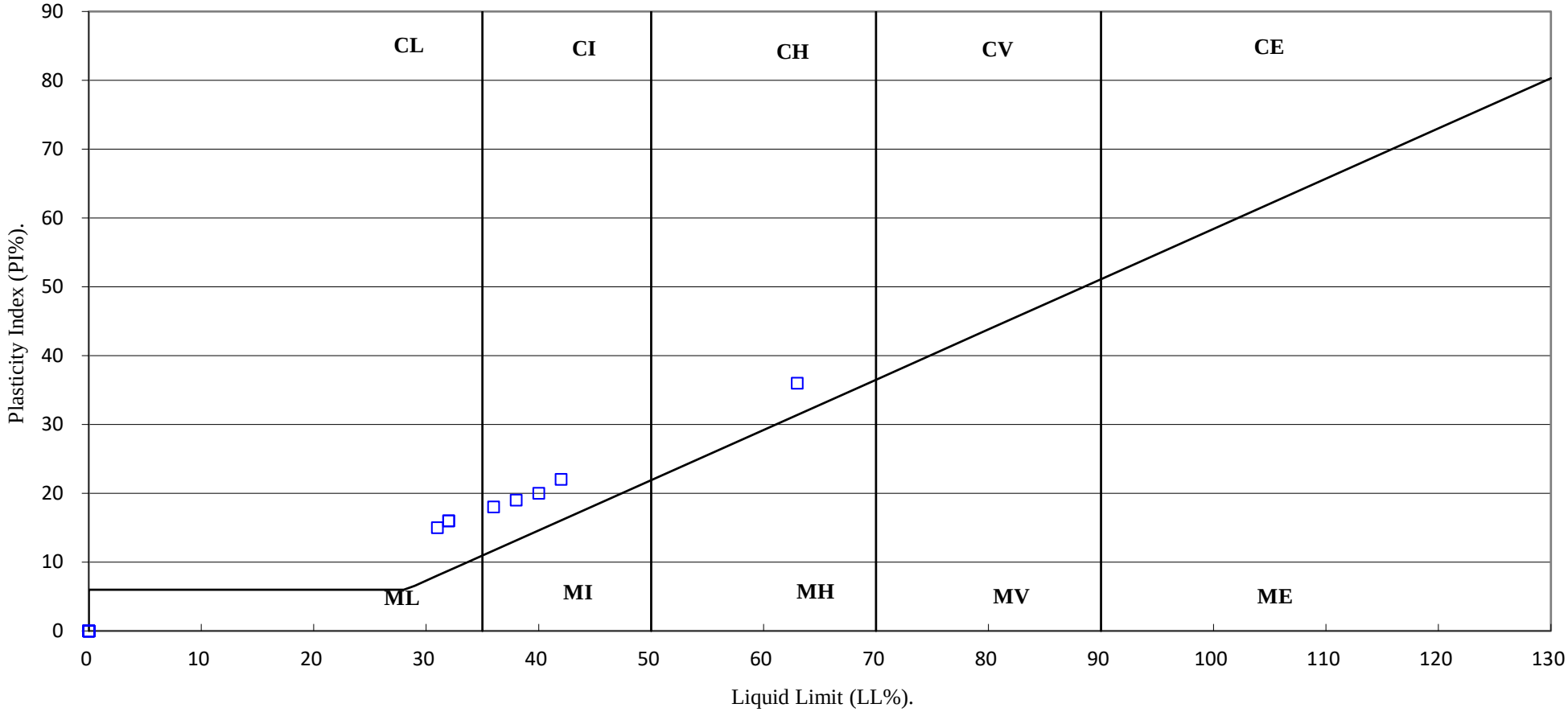
Contract No:

PSL22/5489

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



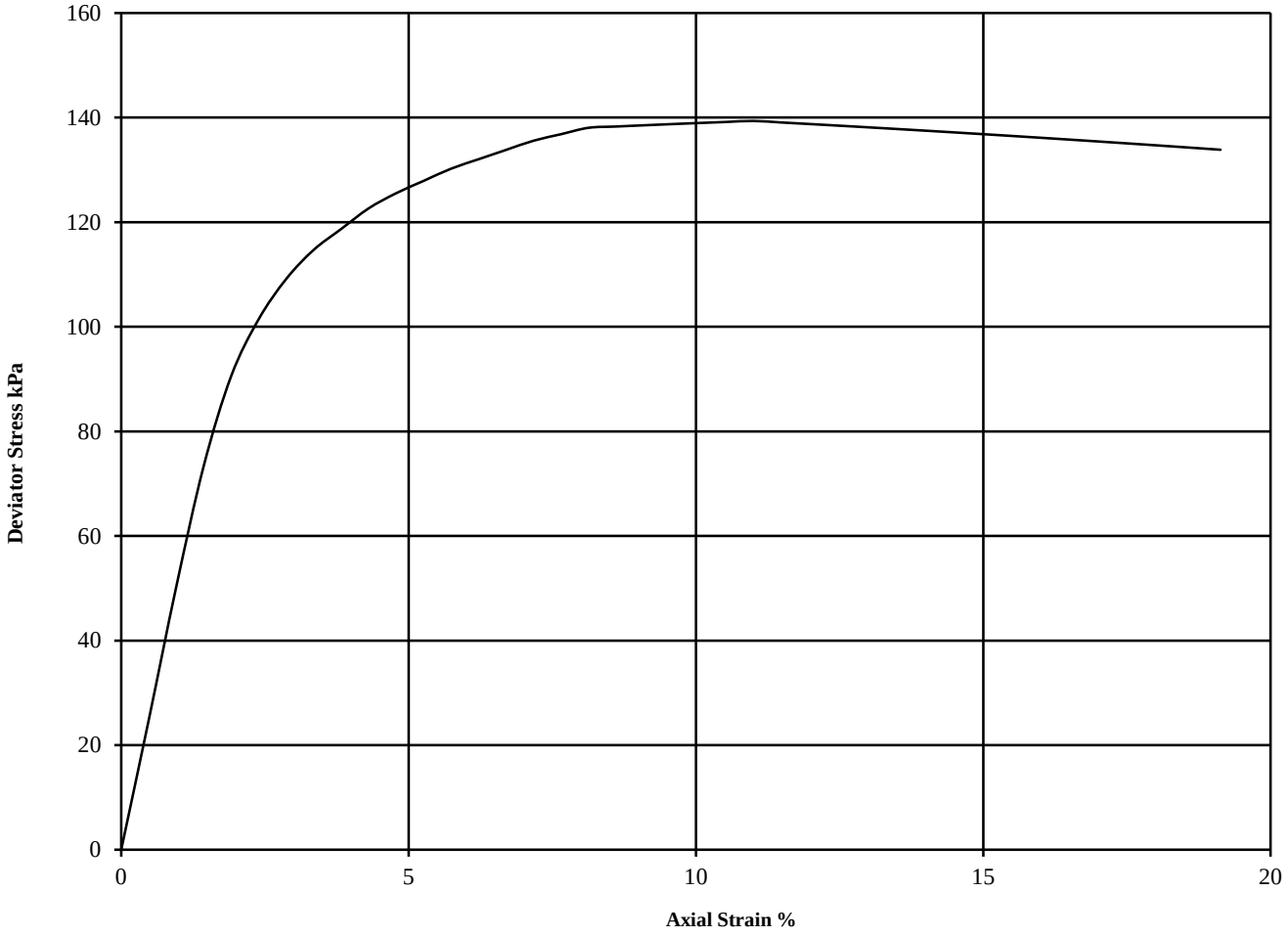
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2)- Ground Investigation	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**7.60**
Sample Number:	**120**	**Base Depth (m):**	**7.90**
Sample Type	**C**		



Diameter (mm):		99	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	20	2.08	1.73	150	139	70	11.0	Plastic	See summary of soil descriptions

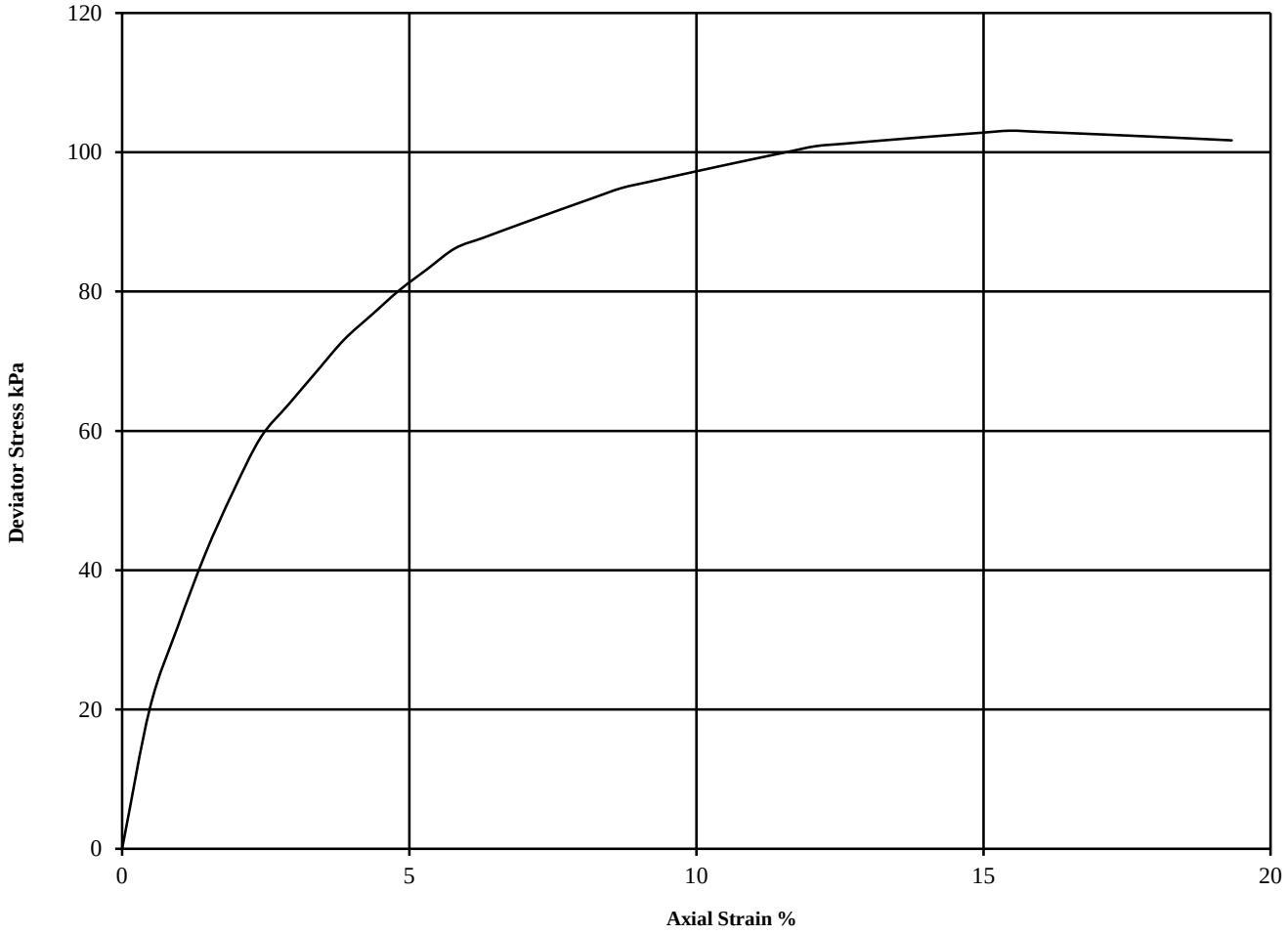
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**11.40**
Sample Number:	**130**	**Base Depth (m):**	**11.70**
Sample Type	**C**		



Diameter (mm):		100	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	21	2.03	1.68	190	103	52	15.5	Plastic	See summary of soil descriptions

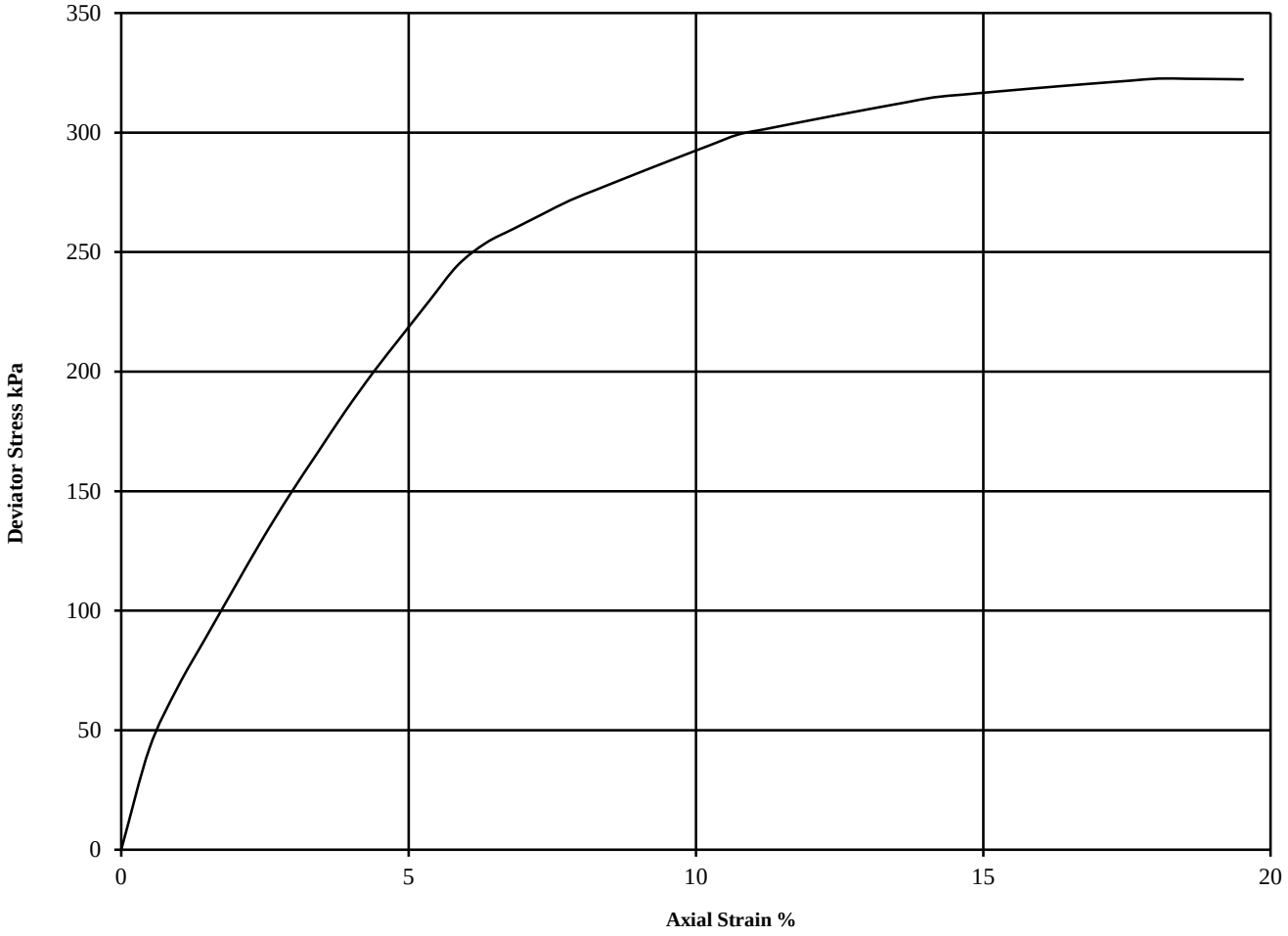
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**15.50**
Sample Number:	**142**	**Base Depth (m):**	**15.80**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	19	2.11	1.78	235	323	161	18.1	Plastic	See summary of soil descriptions

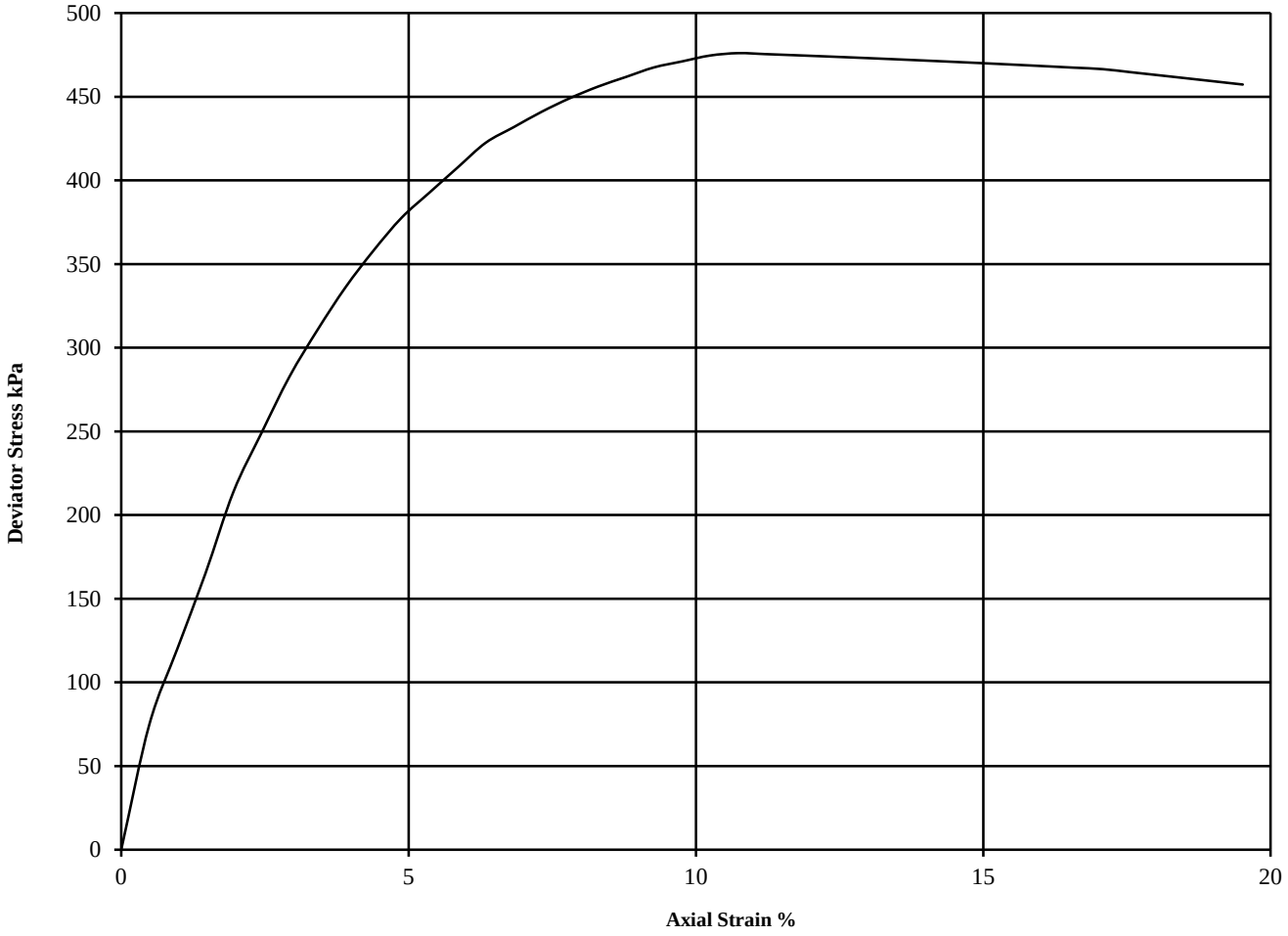
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**17.00**
Sample Number:	**146**	**Base Depth (m):**	**17.30**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	18	2.08	1.77	250	476	238	10.7	Plastic	See summary of soil descriptions

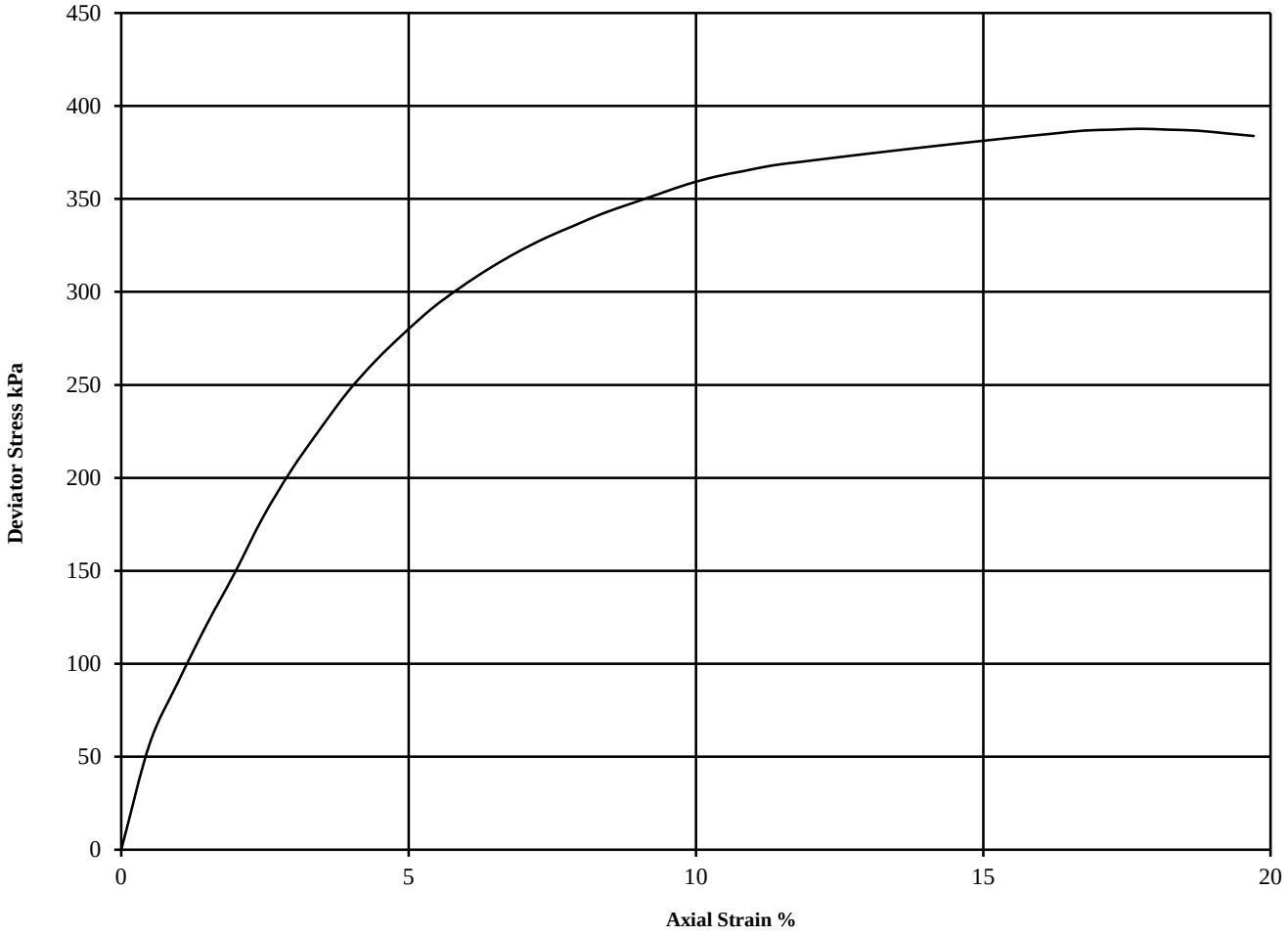
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**20.90**
Sample Number:	**155**	**Base Depth (m):**	**21.20**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		205	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	16	2.25	1.94	290	388	194	17.7	Plastic	See summary of soil descriptions

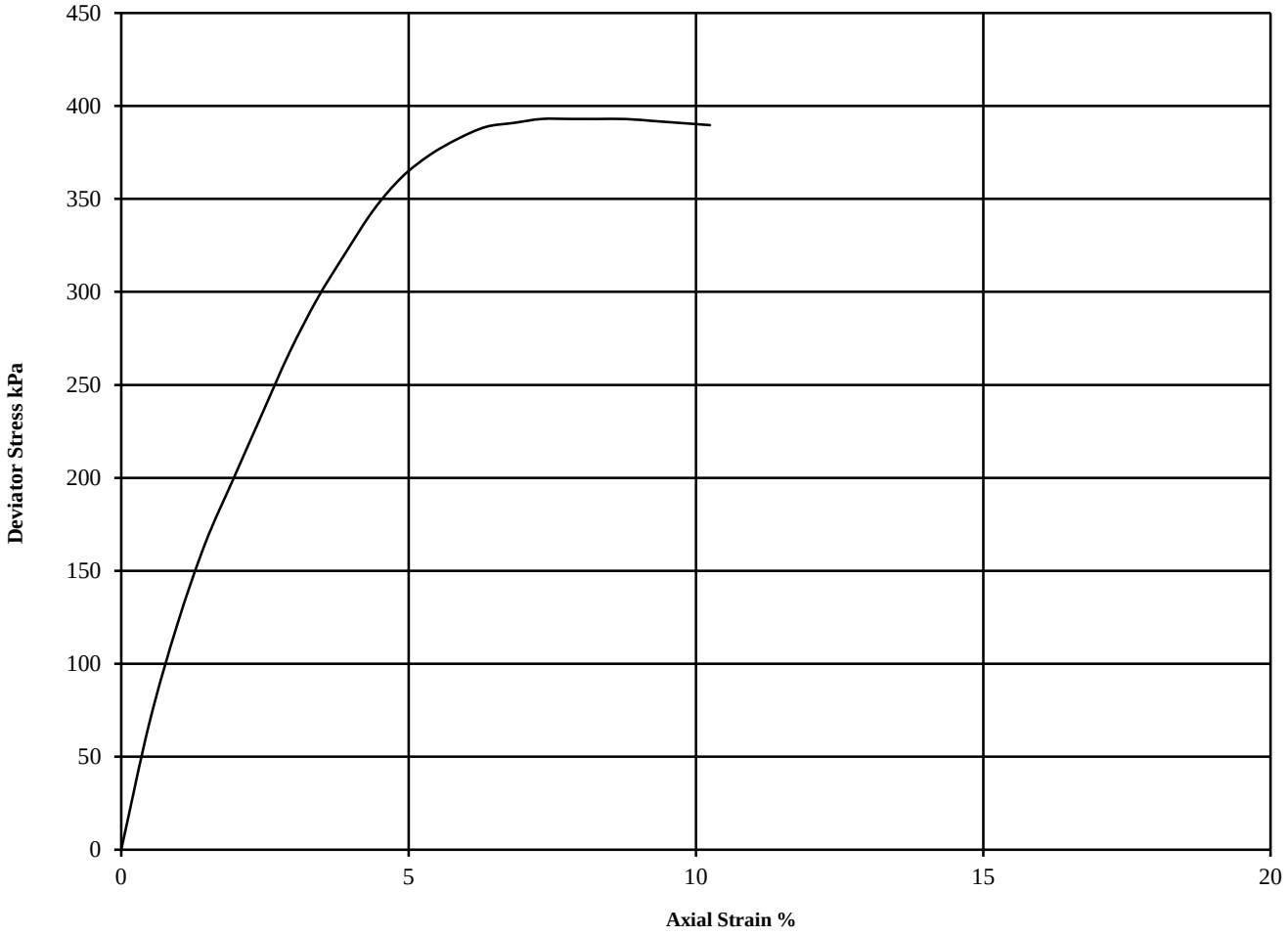
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**23.00**
Sample Number:	**161**	**Base Depth (m):**	**23.30**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	22	2.00	1.64	310	393	197	7.8	Brittle	See summary of soil descriptions

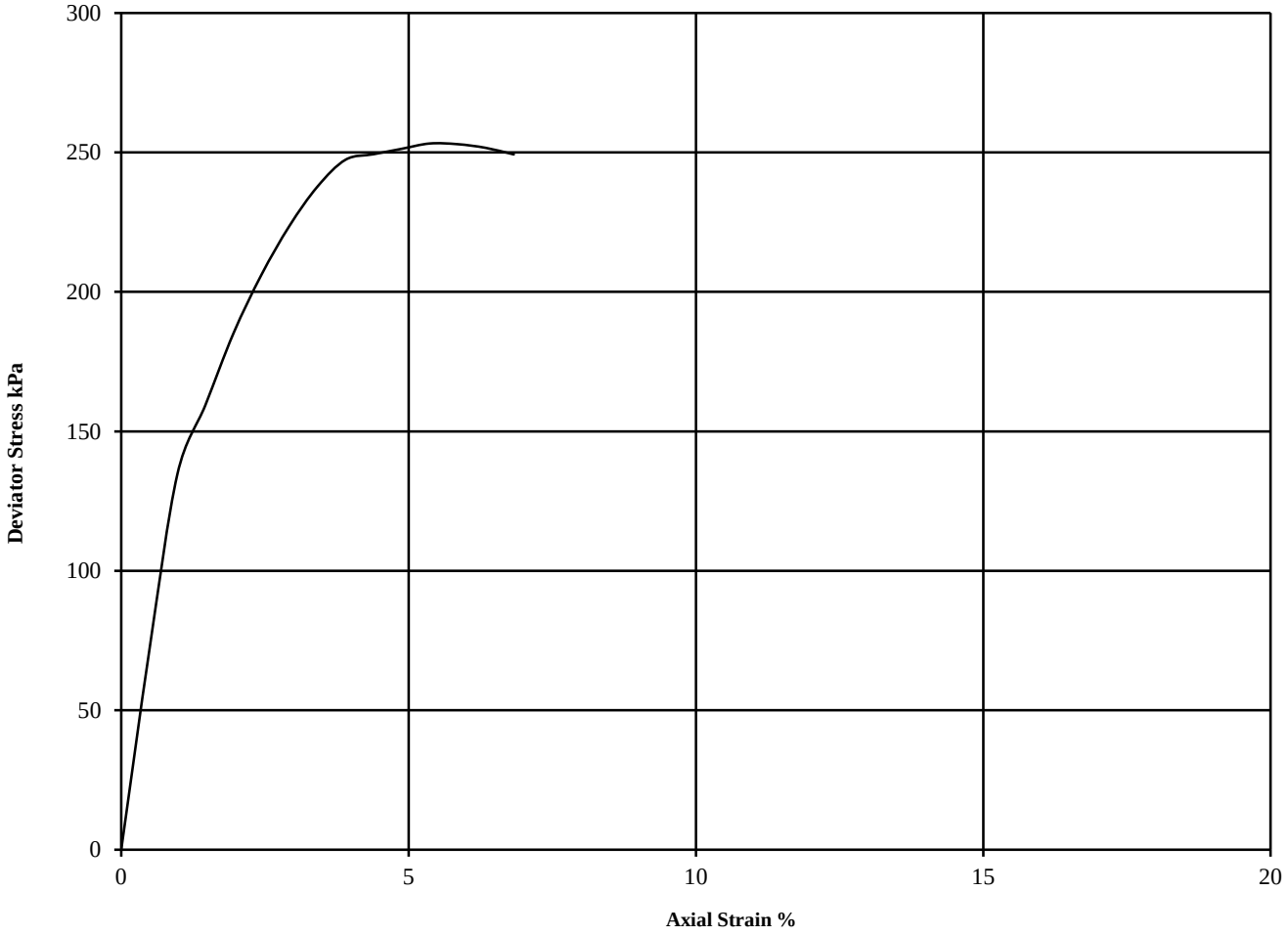
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC02**	**Top Depth (m):**	**25.10**
Sample Number:	**167**	**Base Depth (m):**	**25.40**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.37
1	27	1.98	1.57	330	253	127	5.4	Brittle	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5489 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC02** **Top Depth (m):** **6.10**

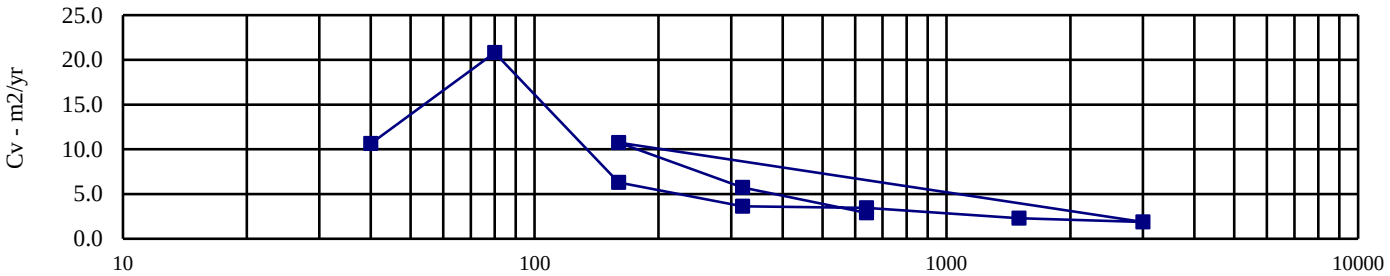
Sample Number: **114** **Base Depth (m) :** **6.40**

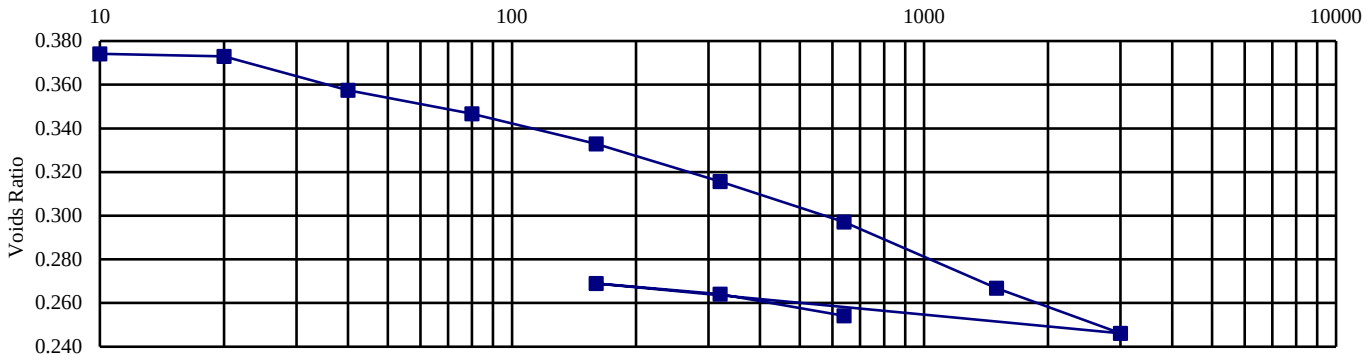
Sample Type: **C**

Initial Conditions	
Moisture Content (%):	15
Bulk Density (Mg/m3):	2.19
Dry Density (Mg/m3):	1.90
Voids Ratio:	0.374
Degree of saturation:	107.6
Height (mm):	19.99
Diameter (mm)	74.96
Particle Density (Mg/m3): Measured	2.61

Pressure Range kPa		Mv m2/MN	Cv m2/yr
0	10	Swelling	Swelling
10	20	Swelling	Swelling
20	40	0.563	10.641
40	80	0.197	20.795
80	160	0.128	6.310
160	320	0.081	3.644
320	640	0.044	3.455
640	1500	0.027	2.306
1500	3000	0.011	1.879
3000	160	0.006	10.755
160	320	0.024	5.745
320	640	0.024	2.879

Specimen location within tube:	Top
Method used to determine CV:	T90
Nominal temperature during test ' C:	20
Remarks: See summary of soil descriptions	





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)- Ground Investigation

Contract No:
PSL22/5489
Client Ref:
D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			6.65-6.90m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	105.4
	Initial Sample Weight	W_0	(gr)	3511.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.91
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	450	550	750	
Initial Back Pressure	U_{bi}	(kPa)	350	350	350	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	19			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.61			
Initial Voids Ratio	e_i	.	0.654			
Initial Degree of Saturation	S_i	(%)	76			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	18			
Final Dry Density	ρ_{df}	(Mg/m3)	1.65			
Final Voids Ratio	e_f	.	0.609			
Final Degree of Saturation	S_f	(%)	76.5			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	2.14	3.52	11.72	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	170.3	294.0	553.1	
Minor Stress At Failure	σ_3'	(kPa)	76.0	161.0	345.0	
Major Stress At Failure	σ_1'	(kPa)	246.3	455.0	898.1	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.241	2.826	2.603	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 6.65-6.90m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	6.65-6.90m
Client	socotec	Depth	6.65-6.90m

UKAS TESTING 4043

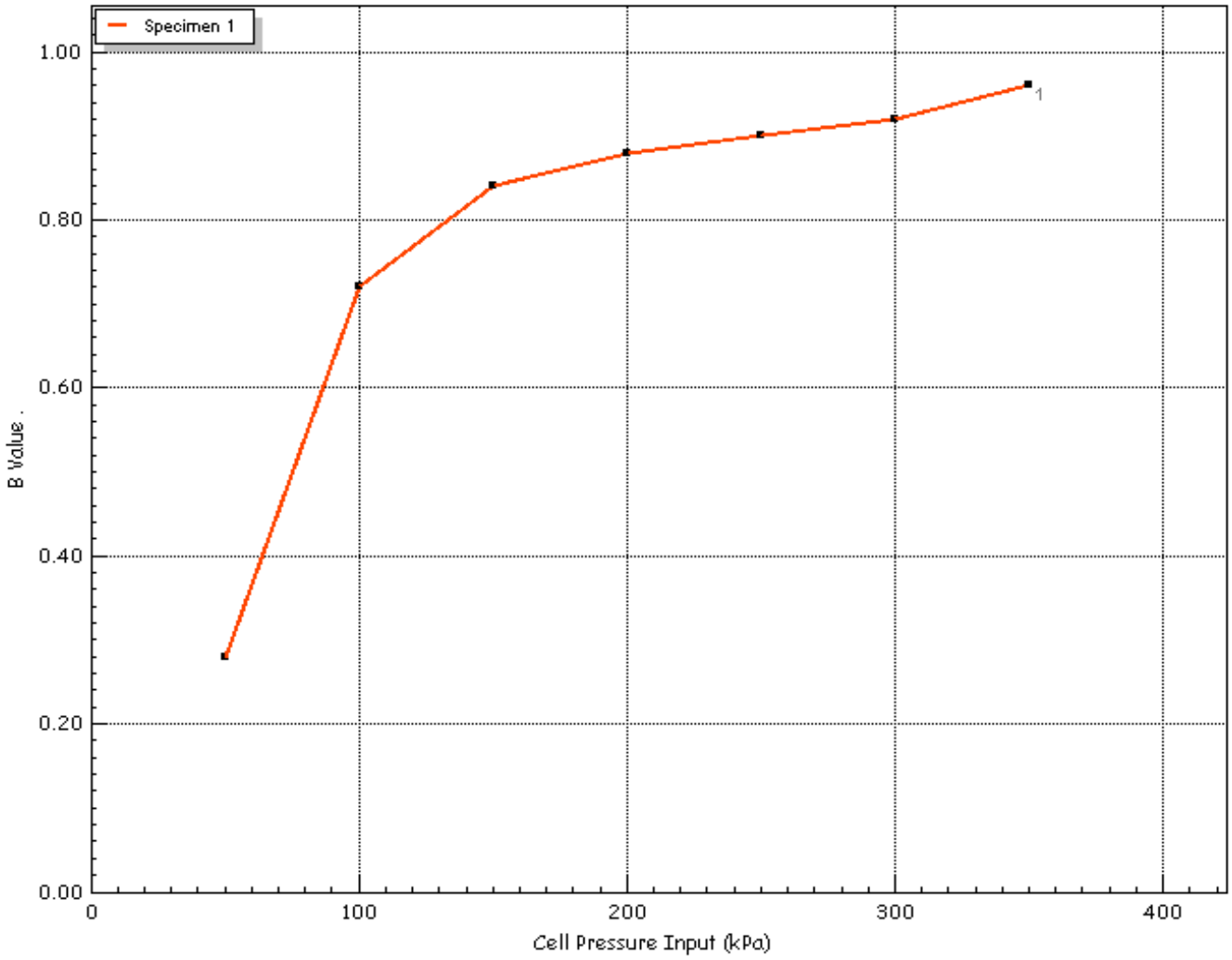
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	350
Pore Water Pressure Input	u pwp	(kPa)	319
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 6.65-6.90m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	6.65-6.90m
Client	socotec	Depth	6.65-6.90m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

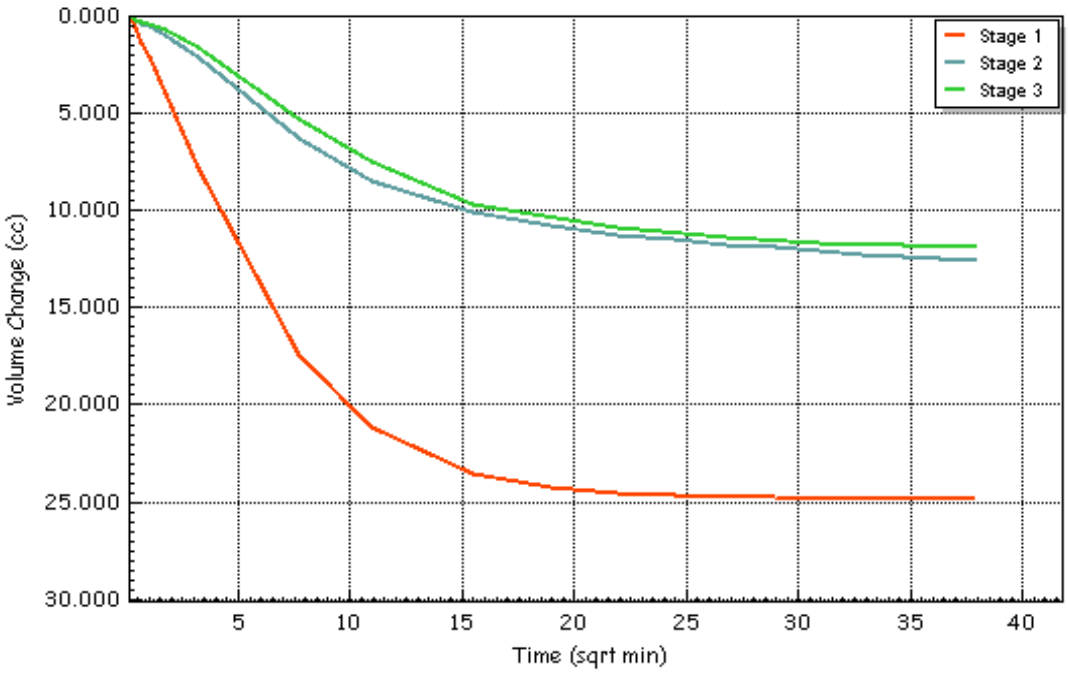
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	450	550	750
Initial Back Pressure	u_{bi}	(kPa)	350	350	350
Pore Water Pressure Input	u_{pwp}	(kPa)	410	444	553
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.35	0.68	0.65
Corrected Length	L_C	(mm)	210.1	205.1	200.6
Corrected Area	A_C	(cm2)	86.47	87.94	89.33
Corrected Volume	V_C	(cc)	1816.162	1803.603	1791.719
t100	t_{100}	(min)	92.91	203.59	258.44
Consolidation	c_v	(m2/year)	2.469	1.127	0.888
Compressibility	m_v	(m2/MN)	0.225	0.073	0.032
Test Time	t_F	(h:m:s)	02:47:14	06:06:27	07:45:11
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.06280	0.06280	0.06280

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 6.65-6.90m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	6.65-6.90m
Client	socotec	Depth	6.65-6.90m

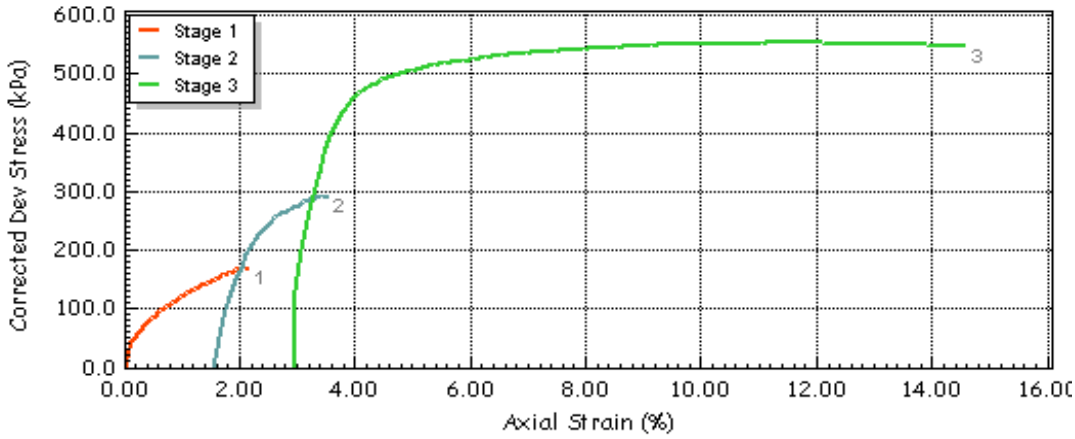
UKAS TESTING 4043

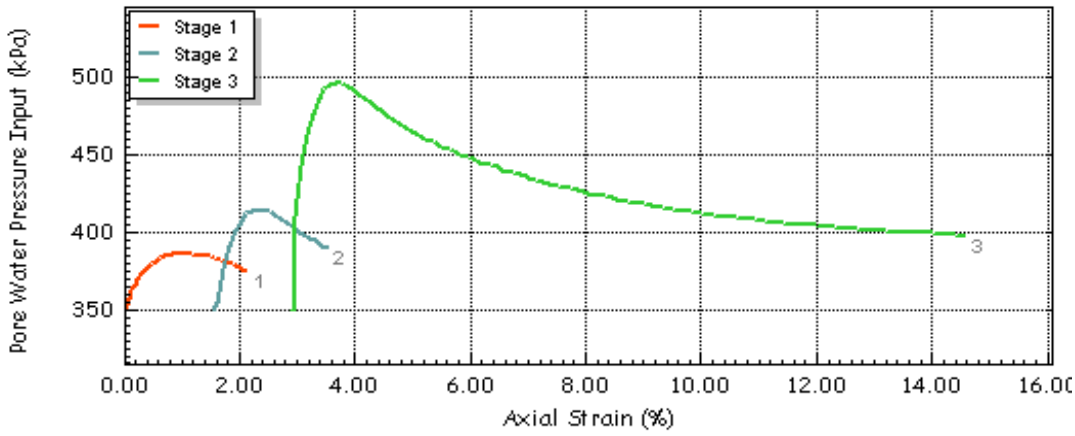
PSL PROFESSIONAL SOILS LABORATORY

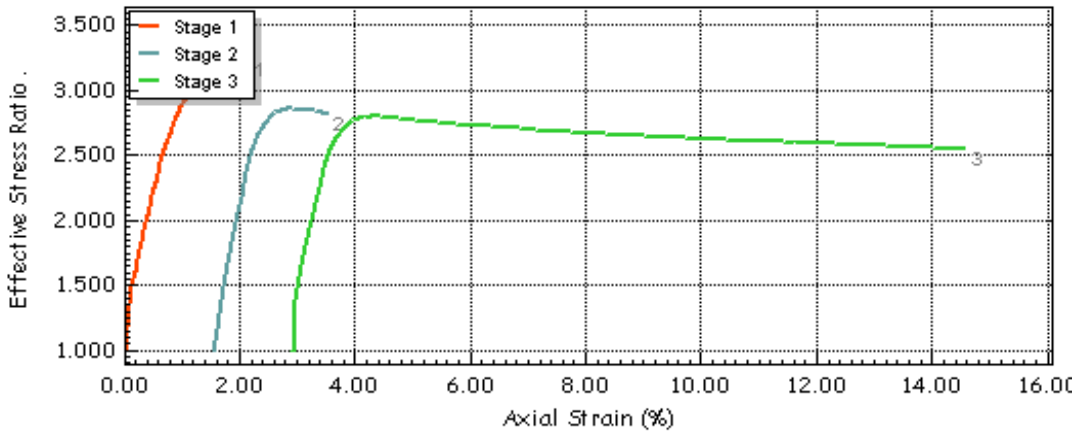
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 6.65-6.90m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	6.65-6.90m
Client	socotec	Depth	6.65-6.90m

UKAS TESTING 4043

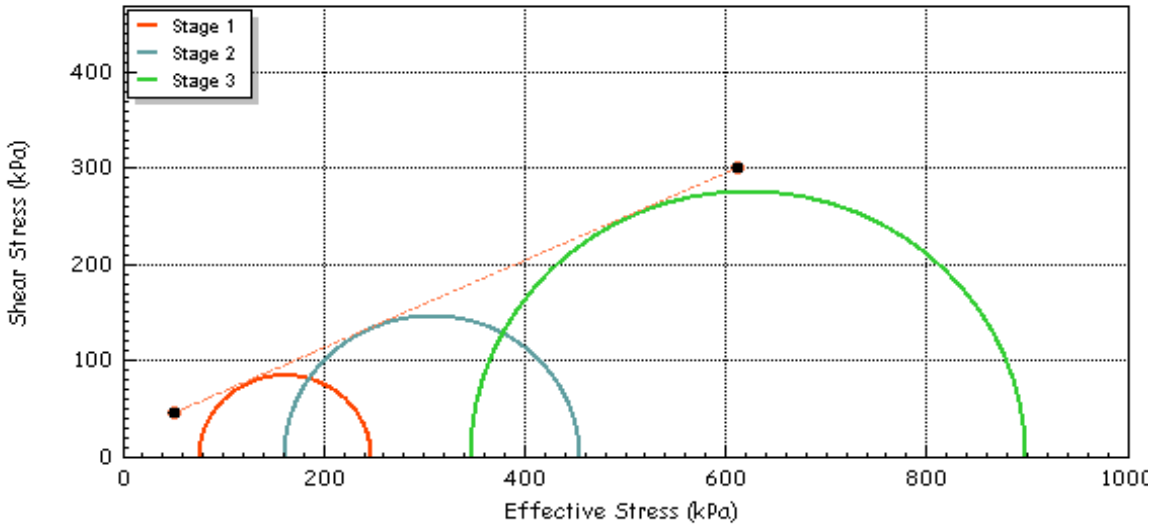
PSL PROFESSIONAL SOILS LABORATORY

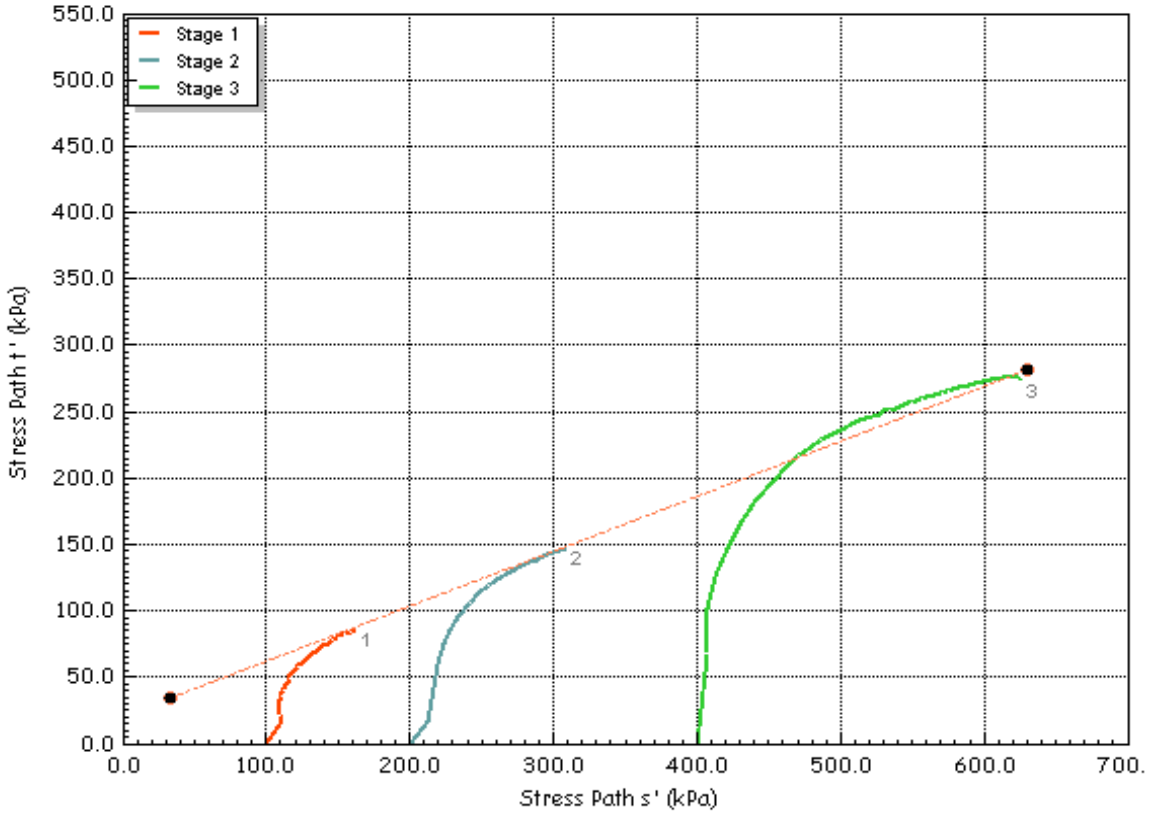
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	22.64	Effective Cohesion	c'	(kPa)	22.64
Effective Friction	ϕ'	(deg)	24.5	Effective Friction	ϕ'	(deg)	24.5





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 6.65-6.90m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	6.65-6.90m
Client	socotec	Depth	6.65-6.90m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth		14.00-14.70m	
	Description		See summary of soil descriptions.	
	Type		Undisturbed, vertical orientation.	
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	105.4
	Initial Sample Weight	W_0	(gr)	3494.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.90
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	720	840	1080	
Initial Back Pressure	U_{bi}	(kPa)	600	600	600	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	20			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.58			
Initial Voids Ratio	e_i	.	0.686			
Initial Degree of Saturation	S_i	(%)	79			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	19			
Final Dry Density	ρ_{df}	(Mg/m3)	1.64			
Final Voids Ratio	e_f	.	0.627			
Final Degree of Saturation	S_f	(%)	81.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	1.34	4.68	8.67	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	169.8	315.0	614.7	
Minor Stress At Failure	σ_3'	(kPa)	69.0	171.0	388.0	
Major Stress At Failure	σ_1'	(kPa)	238.8	486.0	1002.7	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.461	2.842	2.584	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 14-14.45m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	14-14.70m
Client	Socotec	Depth	14.00-14.70m

UKAS TESTING 4043

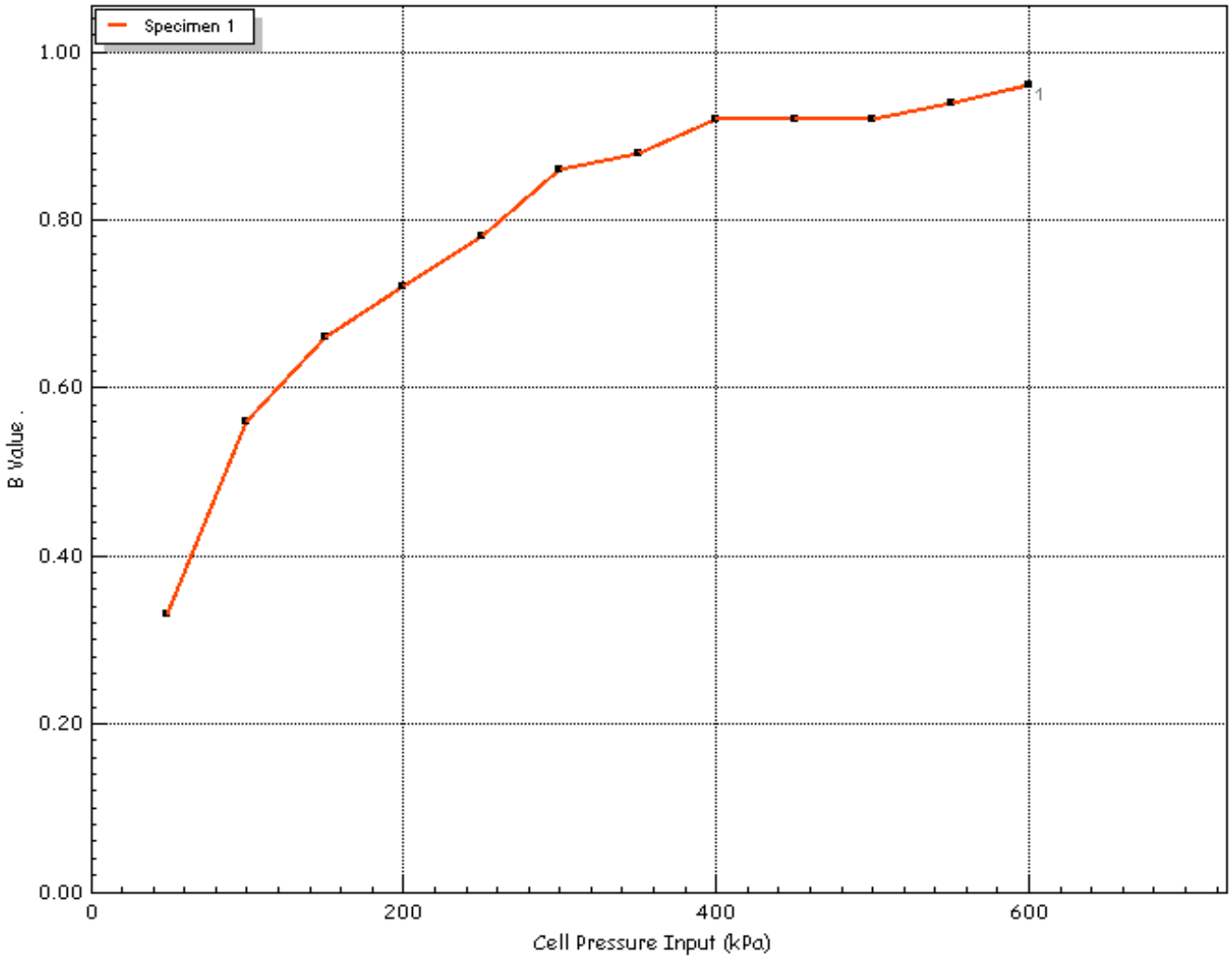
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	600
Pore Water Pressure Input	u pwp	(kPa)	583
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 14-14.45m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	14-14.70m
Client	Socotec	Depth	14.00-14.70m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

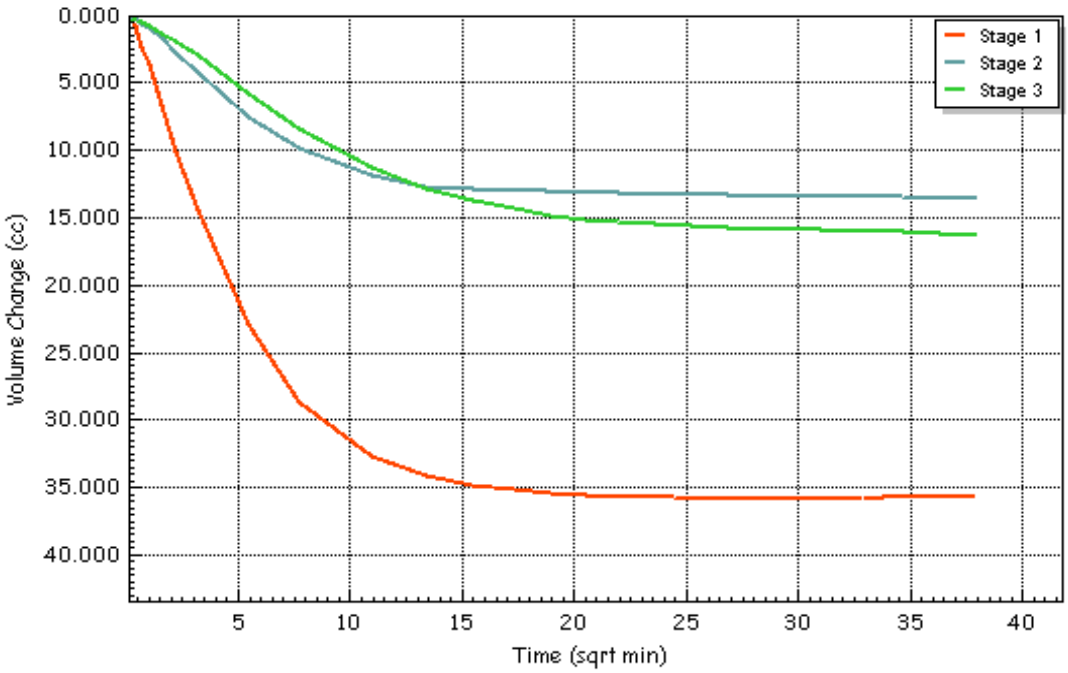
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	720	840	1080
Initial Back Pressure	u_{bi}	(kPa)	600	600	600
Pore Water Pressure Input	u_{pwp}	(kPa)	699	725	872
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.94	0.73	0.88
Corrected Length	L_C	(mm)	209.6	206.2	197.9
Corrected Area	A_C	(cm2)	86.12	86.89	89.72
Corrected Volume	V_C	(cc)	1805.304	1791.775	1775.532
t100	t_{100}	(min)	56.22	76.25	194.75
Consolidation	c_v	(m2/year)	4.080	3.009	1.178
Compressibility	m_v	(m2/MN)	0.196	0.059	0.032
Test Time	t_F	(h:m:s)	02:00:00	02:17:15	05:50:33
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.08735	0.08735	0.08735

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 14-14.45m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	14-14.70m
Client	Socotec	Depth	14.00-14.70m

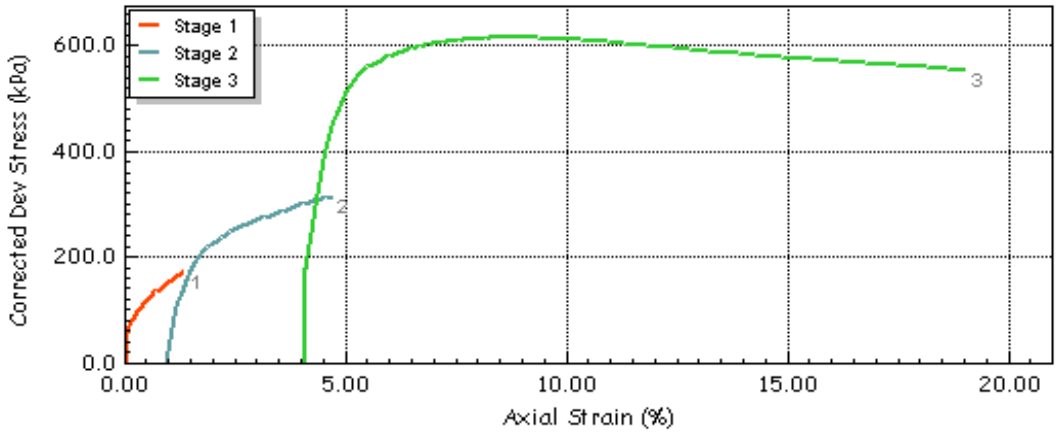
UKAS TESTING 4043

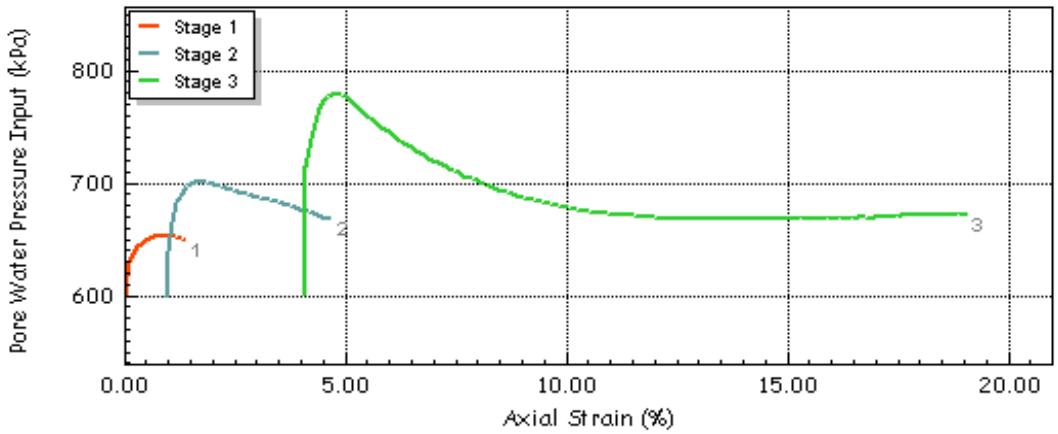
PSL PROFESSIONAL SOILS LABORATORY

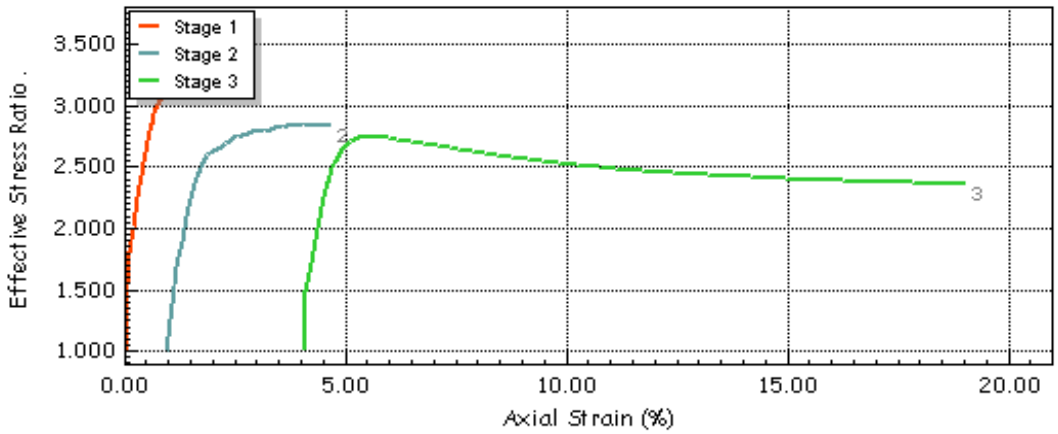
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 14-14.45m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	14-14.70m
Client	Socotec	Depth	14.00-14.70m

UKAS TESTING 4043

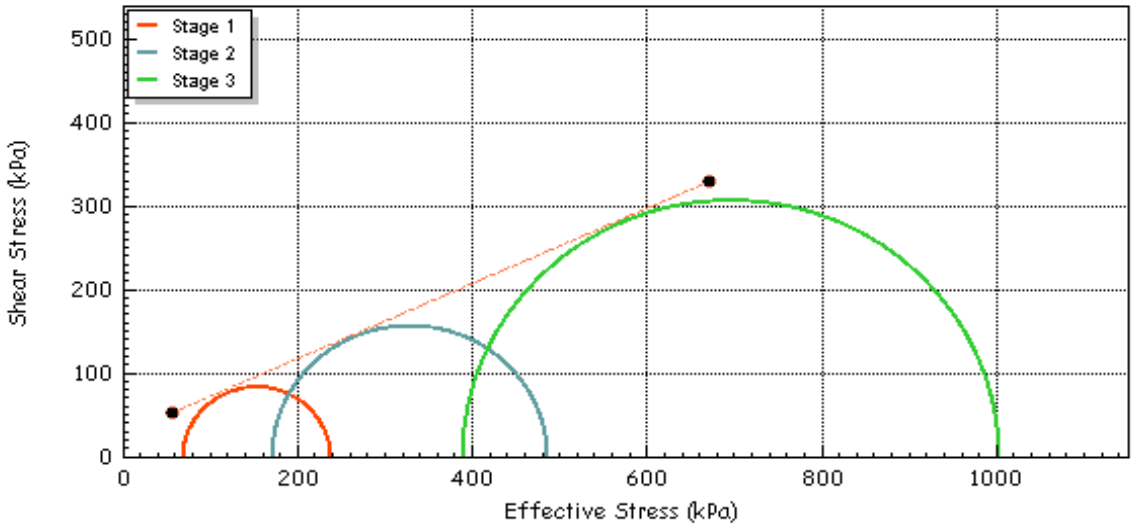
PSL PROFESSIONAL SOILS LABORATORY

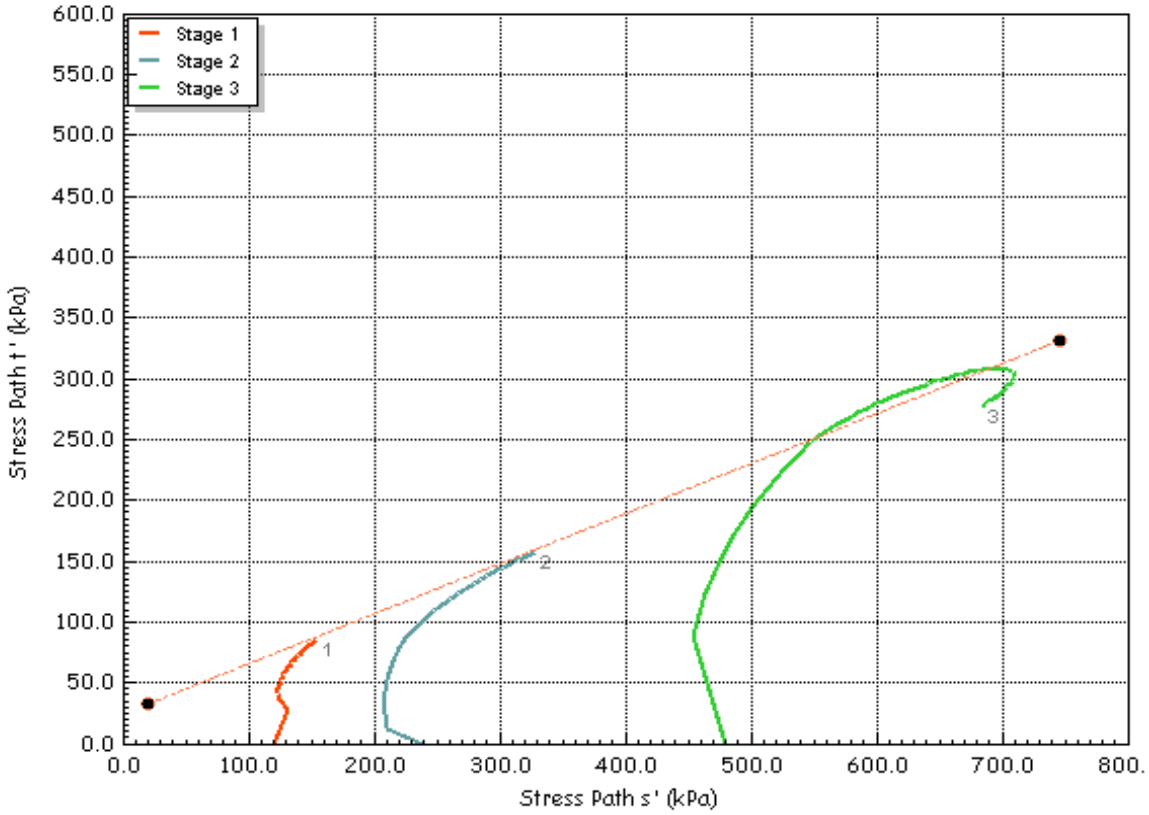
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	26.64	Effective Cohesion	c'	(kPa)	26.64
Effective Friction	ϕ'	(deg)	24.2	Effective Friction	ϕ'	(deg)	24.2





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC02 14-14.45m
		Test Date	06/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC02
		Sample	14-14.70m
Client	Socotec	Depth	14.00-14.70m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-17197 *Issued:* 06-Sep-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-17197

Client Reference PSL22/5489

Order No (not supplied)

Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

Description 4 Soil samples.

Date Received 01-Sep-22

Date Started 01-Sep-22

Date Completed 06-Sep-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-17197
Client Ref PSL22/5489
Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

			Lab No	2052601	2052602	2052603	2052604
			.Sample ID	RC02	RC02	RC02	RC02
			Depth	1.20	2.70	5.90	22.80
			Other ID	10	104	113	16
			Sample Type	D	D	D	D
			Sampling Date	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l		< 10	58	88
Inorganics							
pH	DETSC 2008#		pH		9.7	7.6	8.1
Organic matter	DETSC 2002#	0.1	%	0.7	3.2		
Chloride Aqueous Extract	DETSC 2055	1	mg/l		6.1	5.2	13
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l		< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		660	1400	1200
Sulphur as S, Total	DETSC 2320	0.01	%		0.11	0.65	0.45
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.21	0.37	0.30

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-17197
Client Ref PSL22/5489
Contract Stansted Terminal 2 (ST2) - Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2052601	RC02 1.20 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
2052602	RC02 2.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	
2052603	RC02 5.90 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2052604	RC02 22.80 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/5490

Report Date: 27 September 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samatha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 19/8/2022
Date Commenced: 19/8/2022
Date Completed: 12/9/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
		[redacted]
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP09	9	D	1.30	-	Brown gravelly sandy CLAY.
CP09	14	D	2.00	-	Brown slightly gravelly sandy CLAY.
CP09	15	UT	2.50	2.95	Stiff brown gravelly slightly sandy CLAY
CP09	16	D	3.00	-	Brown gravelly sandy CLAY.
CP09	22	UT	4.50	4.95	Brown gravelly sandy CLAY.
CP09	26	D	5.50	-	Brown slightly gravelly sandy CLAY.
CP09	28	UT	6.50	6.95	Brown slightly gravelly sandy CLAY.
CP09	33	UT	8.50	8.95	Grey gravelly very sandy CLAY.
CP09	36	D	9.50	-	Grey slightly gravelly very sandy CLAY.
CP09	46	D	15.50	-	Grey slightly gravelly very sandy CLAY.
CP09	47	B	15.50	16.00	Grey slightly gravelly very sandy CLAY.
CP11	10	UT	2.00	2.45	Brown slightly gravelly sandy CLAY.
CP11	8	D	2.00	-	Brown sandy CLAY.
CP11	15	D	3.50	-	Brown gravelly sandy CLAY.
CP11	17	UT	4.00	4.45	Brown very gravelly sandy CLAY.
CP11	24	UT	6.00	6.45	Brown slightly gravelly sandy CLAY.
CP11	27	D	7.00	-	Brown mottled grey slightly gravelly very sandy CLAY.
CP11	31	UT	8.00	8.45	Stiff Brown mottled grey gravelly sandy CLAY.
CP11	34	D	9.00	-	Grey gravelly very sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP11	38	UT	10.00	10.45	Grey very gravelly sandy CLAY.
CP11	45	UT	12.00	12.45	Grey very gravelly sandy CLAY.
CP11	48	D	13.00	-	Grey gravelly very sandy CLAY.
CP11	52	UT	14.00	14.45	Stiff grey gravelly sandy CLAY.
CP11	54	B	14.50	14.95	Grey slightly gravelly sandy CLAY.
CP11	55	D	15.00	-	Grey slightly gravelly very sandy CLAY.
CP11	59	UT	16.00	16.45	Very stiff grey gravelly very sandy CLAY.
CP11	61	B	16.50	16.95	Grey slightly gravelly very sandy CLAY.
CP11	62	D	17.00	-	Grey slightly gravelly very sandy CLAY.
CP11	70	B	19.50	19.95	Grey slightly gravelly very clayey SAND.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP09	9	D	1.30	-	16			40	20	20	100	Intermediate Plasticity CI
CP09	14	D	2.00	-	18			34	17	17	100	Low Plasticity CL
CP09	16	D	3.00	-	16			38	19	19	100	Intermediate Plasticity CI
CP09	22	UT	4.50	4.95			2.65					
CP09	26	D	5.50	-	13			39	19	20	92	Intermediate Plasticity CI
CP09	28	UT	6.50	6.95			2.64					
CP09	36	D	9.50	-	17			34	17	17	100	Low Plasticity CL
CP09	46	D	15.50	-	8.6			33	17	16	100	Low Plasticity CL
CP11	8	D	2.00	-	34			40	20	20	100	Intermediate Plasticity CI
CP11	15	D	3.50	-	22			38	19	19	83	Intermediate Plasticity CI
CP11	17	UT	4.00	4.45			2.61					
CP11	27	D	7.00	-	19			32	16	16	94	Low Plasticity CL
CP11	34	D	9.00	-	20			35	17	18	100	Intermediate Plasticity CI
CP11	38	UT	10.00	10.45			2.65					
CP11	45	UT	12.00	12.45			2.67					
CP11	48	D	13.00	-	20			31	16	15	100	Low Plasticity CL
CP11	55	D	15.00	-	18			33	16	17	96	Low Plasticity CL
CP11	62	D	17.00	-	19			31	15	16	100	Low Plasticity CL

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

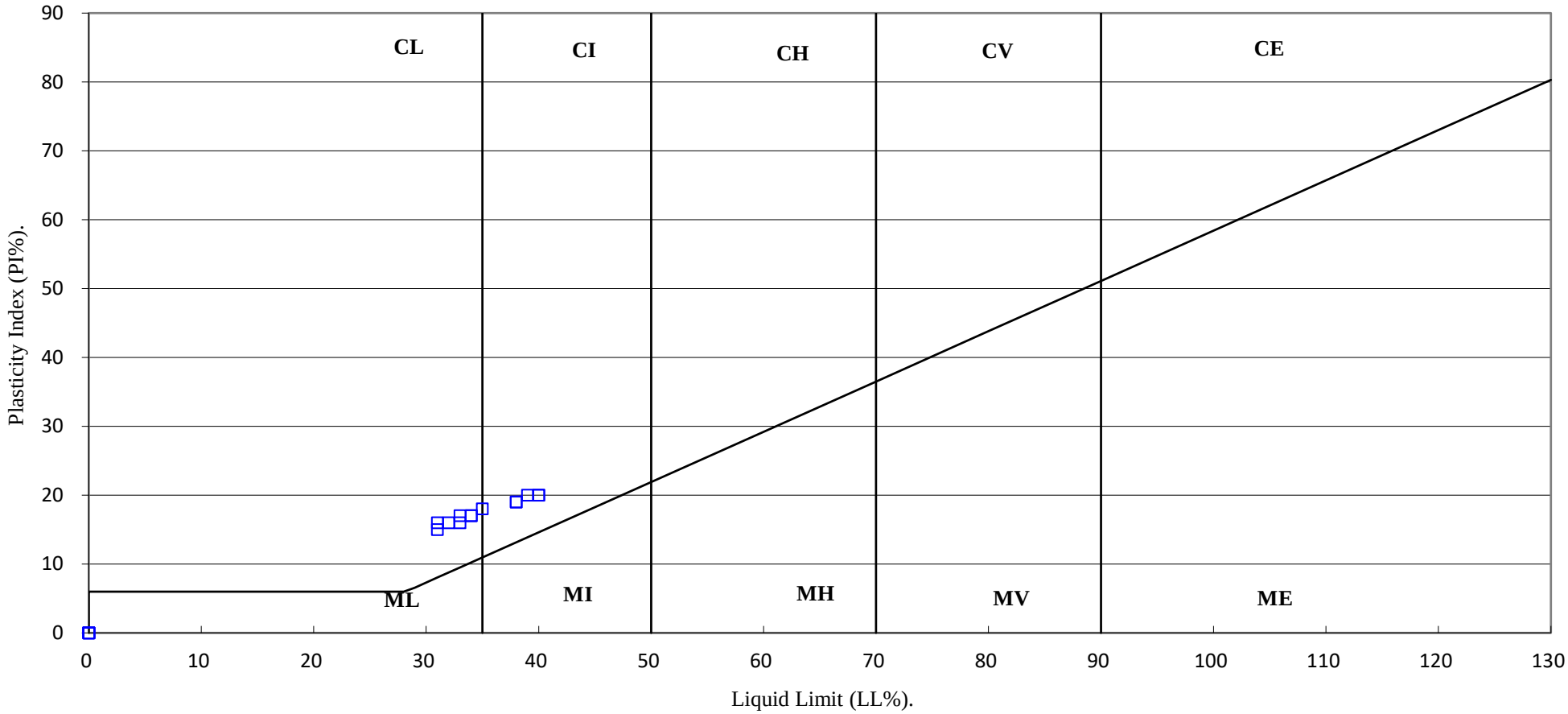
Contract No:

PSL22/5490

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



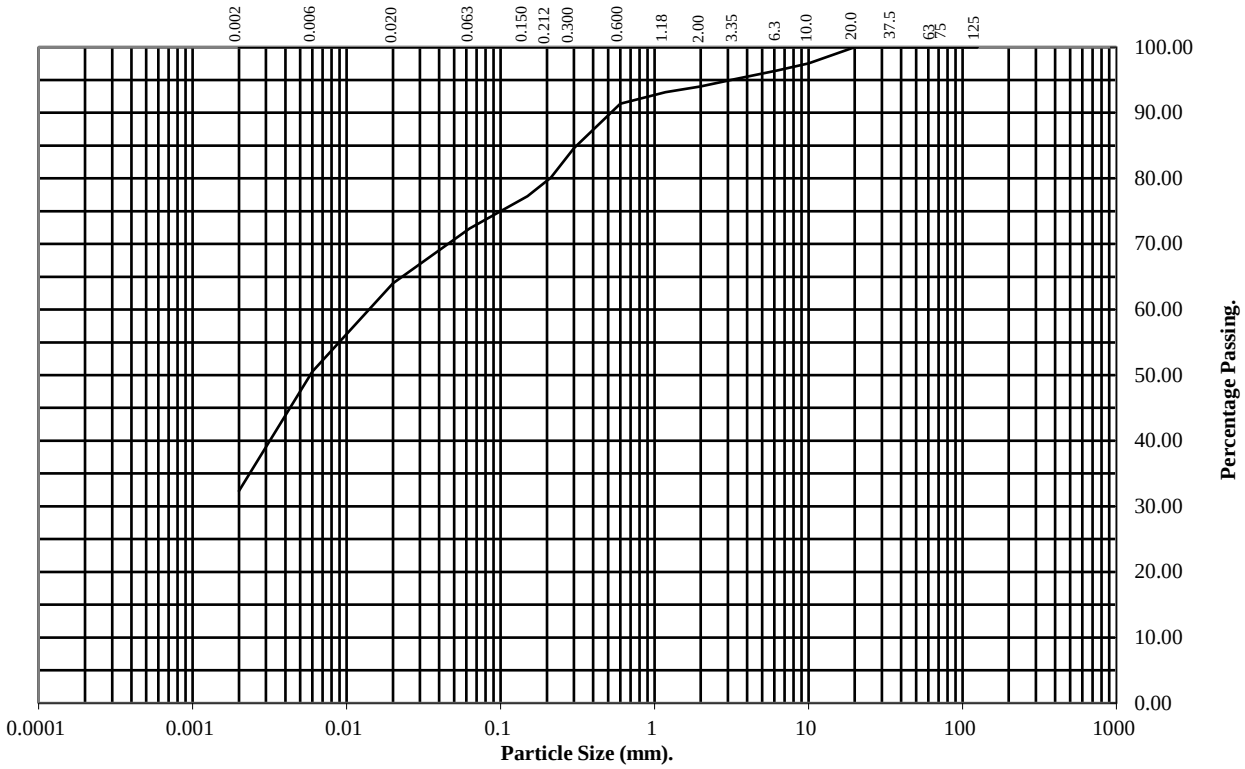
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	**Contract No:** PSL22/5490 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP09**	**Top Depth (m):**	**15.50**
Sample Number:	**47**	**Base Depth(m):**	**16.00**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	98
6.3	96
3.35	95
2	94
1.18	93
0.6	91
0.3	85
0.212	80
0.15	77
0.063	72

Particle Diameter	Percentage Passing
0.02	64
0.006	51
0.002	32

Soil Fraction	Total Percentage
Cobbles	0
Gravel	6
Sand	22
Silt	40
Clay	32

Remarks:

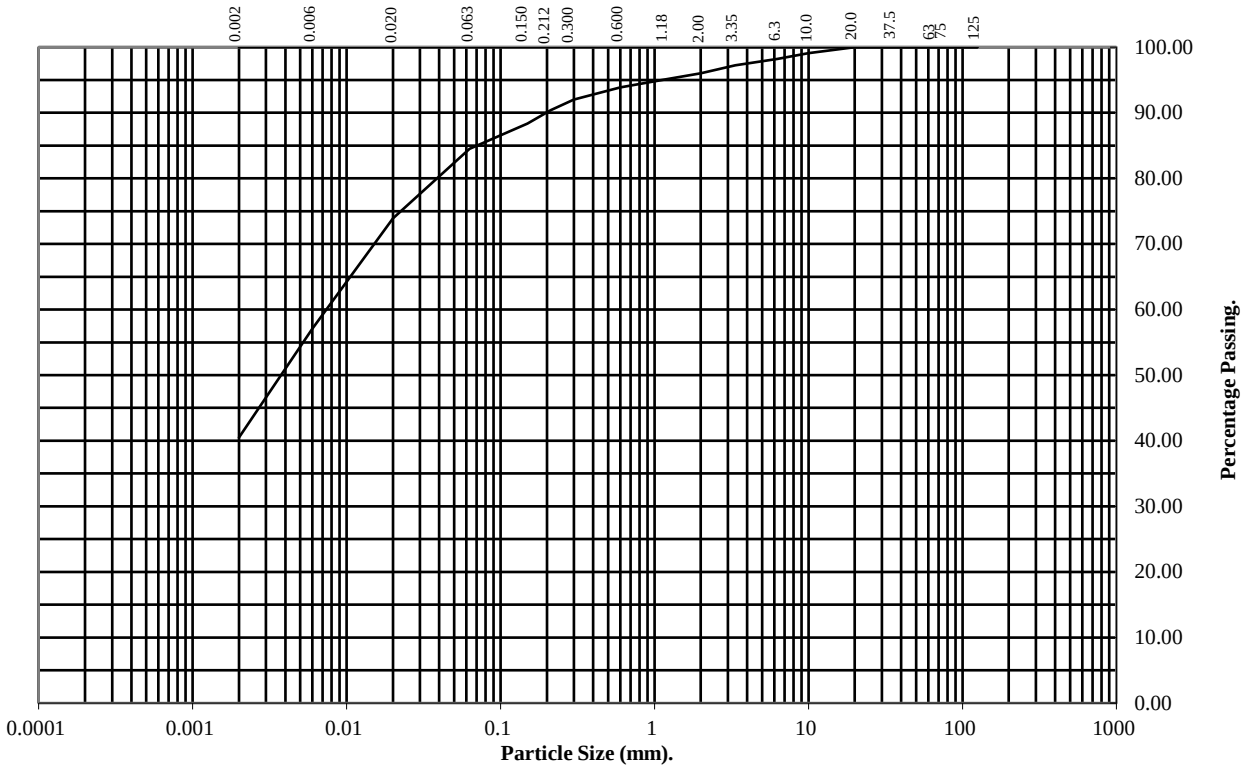
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP11**	**Top Depth (m):**	**14.50**
Sample Number:	**54**	**Base Depth(m):**	**14.95**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	98
3.35	97
2	96
1.18	95
0.6	94
0.3	92
0.212	90
0.15	88
0.063	85

Particle Diameter	Percentage Passing
0.02	74
0.006	57
0.002	40

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	11
Silt	45
Clay	40

Remarks:

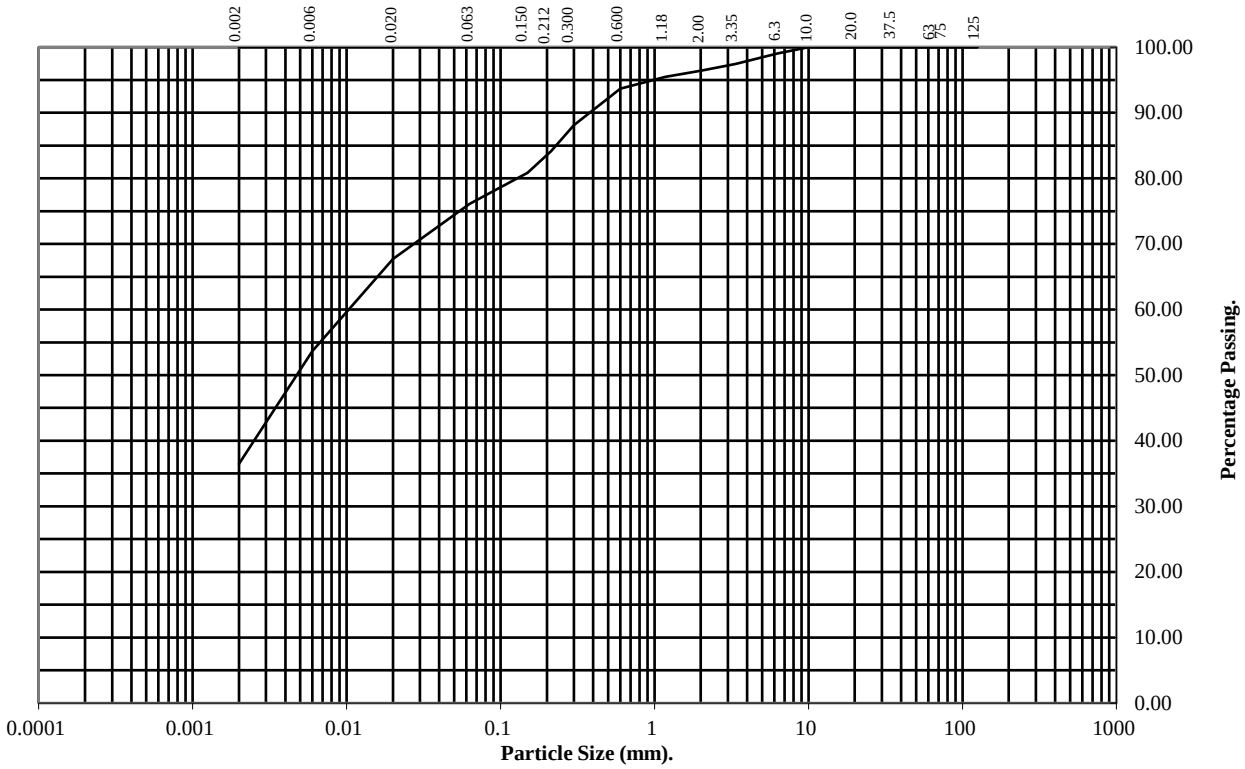
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP11**	**Top Depth (m):**	**16.50**
Sample Number:	**61**	**Base Depth(m):**	**16.95**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	97
2	96
1.18	95
0.6	94
0.3	88
0.212	84
0.15	81
0.063	76

Particle Diameter	Percentage Passing
0.02	68
0.006	54
0.002	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	4
Sand	20
Silt	40
Clay	36

Remarks:

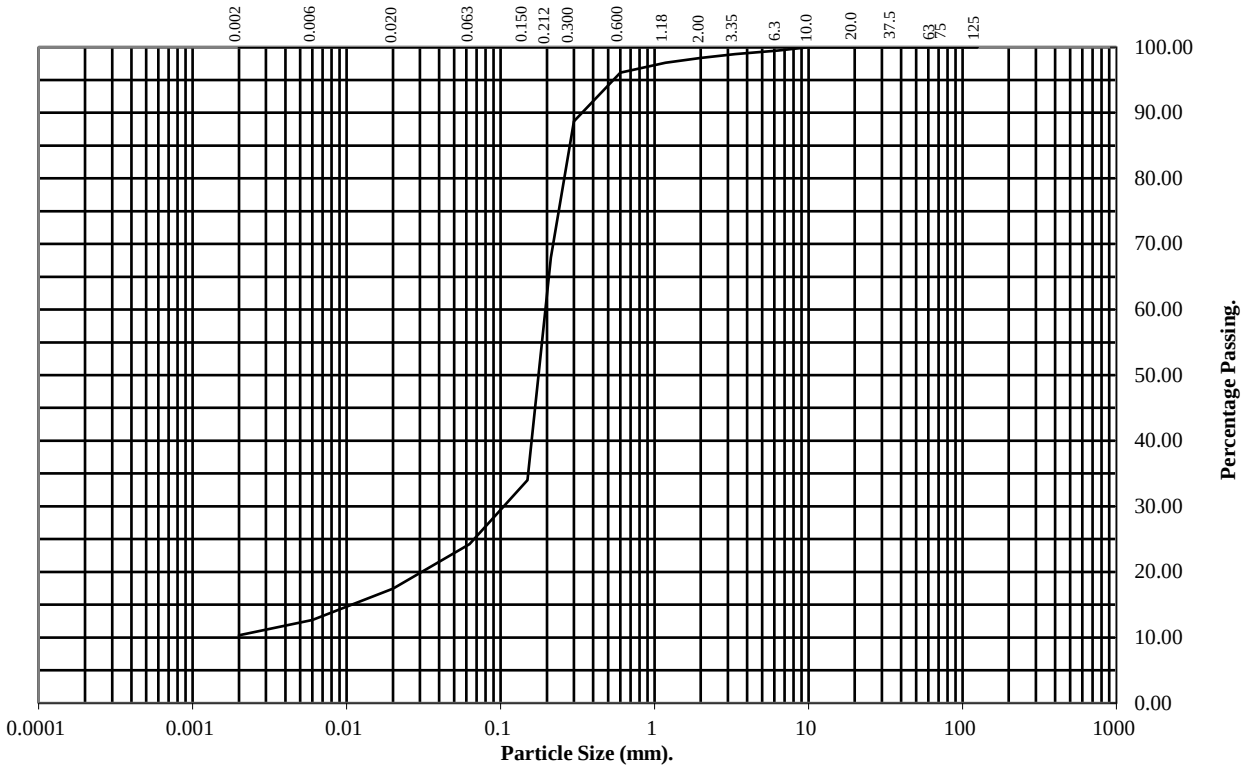
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**CP11**	**Top Depth (m):**	**19.50**
Sample Number:	**70**	**Base Depth(m):**	**19.95**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	99
2	98
1.18	98
0.6	96
0.3	89
0.212	68
0.15	34
0.063	24

Particle Diameter	Percentage Passing
0.02	17
0.006	13
0.002	10

Soil Fraction	Total Percentage
Cobbles	0
Gravel	2
Sand	74
Silt	14
Clay	10

Remarks:

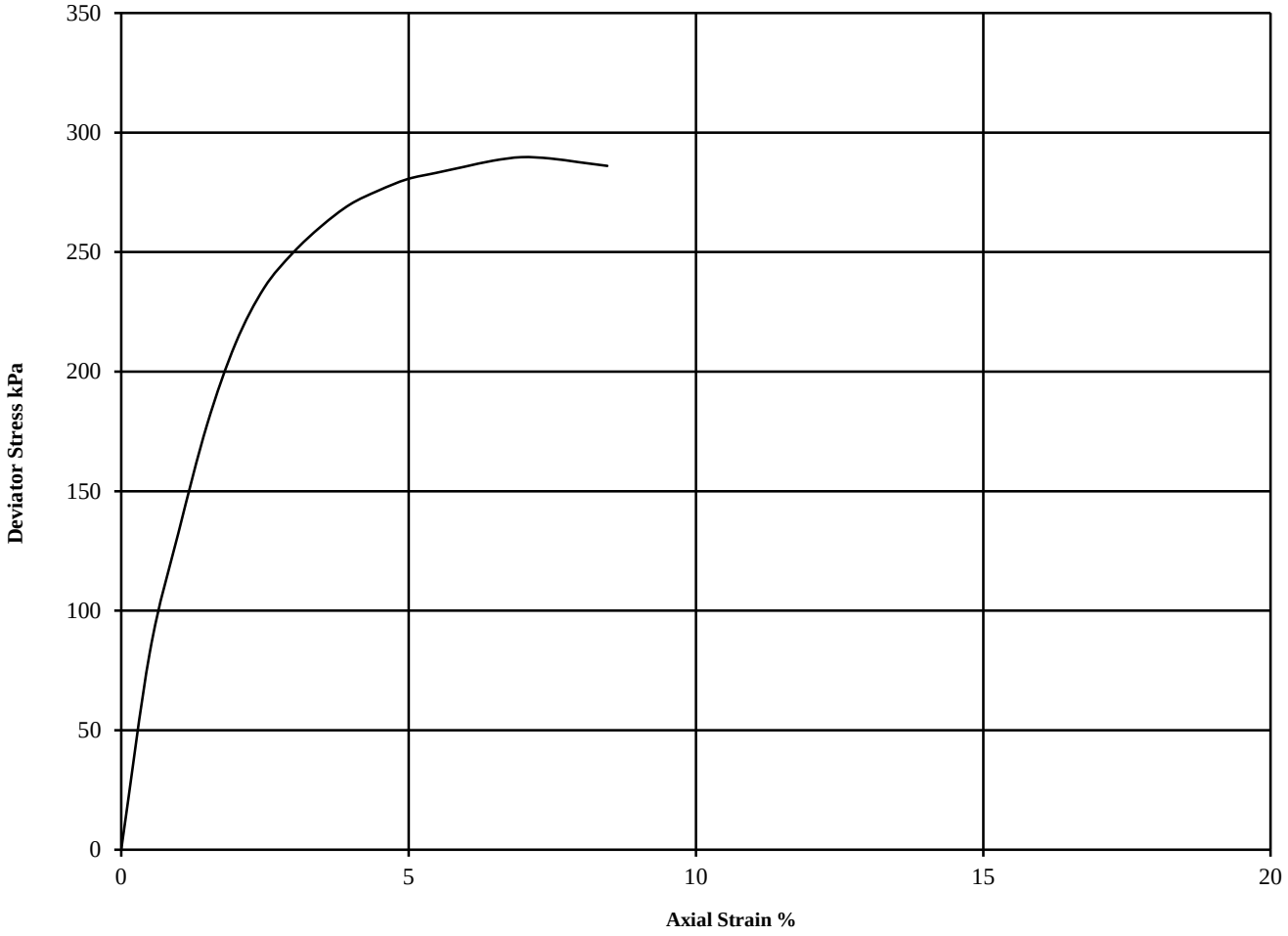
See Summary of Soil Descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP11**	**Top Depth (m):**	**8.00**
Sample Number:	**31**	**Base Depth (m):**	**8.45**
Sample Type	**UT**		



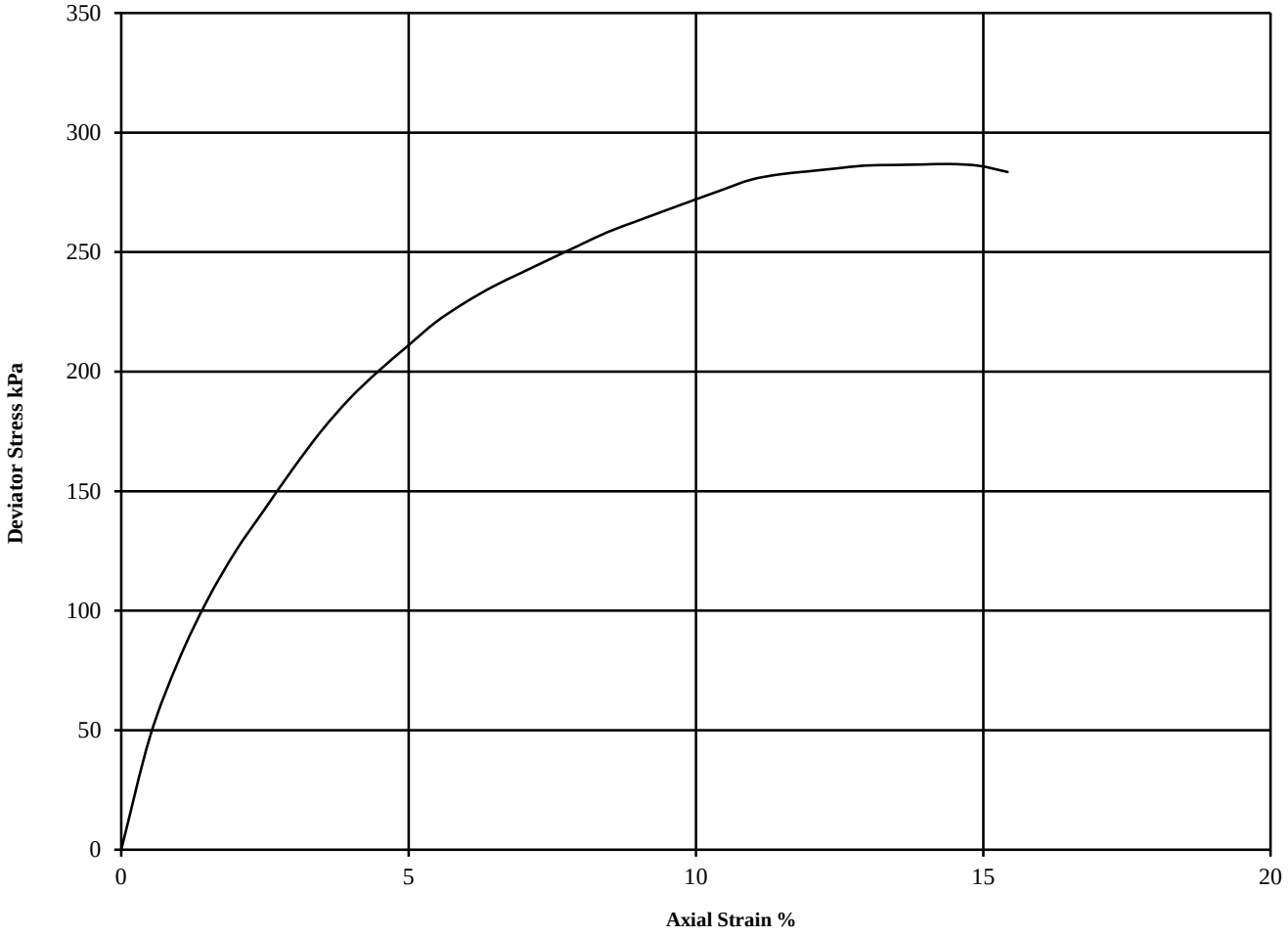
Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	18	2.11	1.80	160	290	145	7.0	Brittle	See summary of soil descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP11**	**Top Depth (m):**	**14.00**
Sample Number:	**52**	**Base Depth (m):**	**14.45**
Sample Type	**UT**		



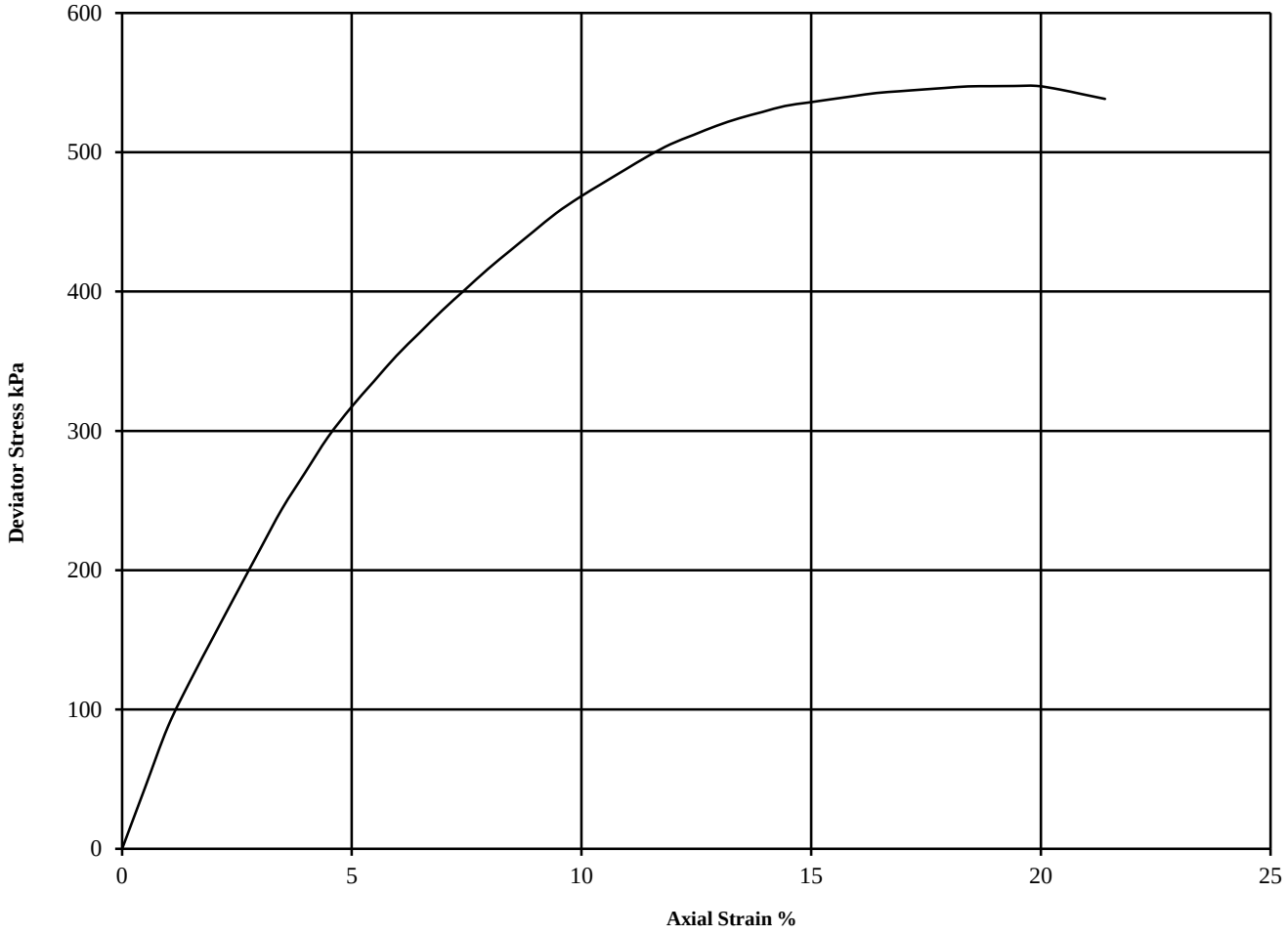
Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34
1	24	2.02	1.62	210	287	143	14.4	Brittle	See summary of soil descriptions

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**CP11**	**Top Depth (m):**	**16.00**
Sample Number:	**59**	**Base Depth (m):**	**16.45**
Sample Type	**UT**		



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33
1	17	2.11	1.80	240	548	274	19.9	Plastic	See summary of soil descriptions

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:** PSL22/5490 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

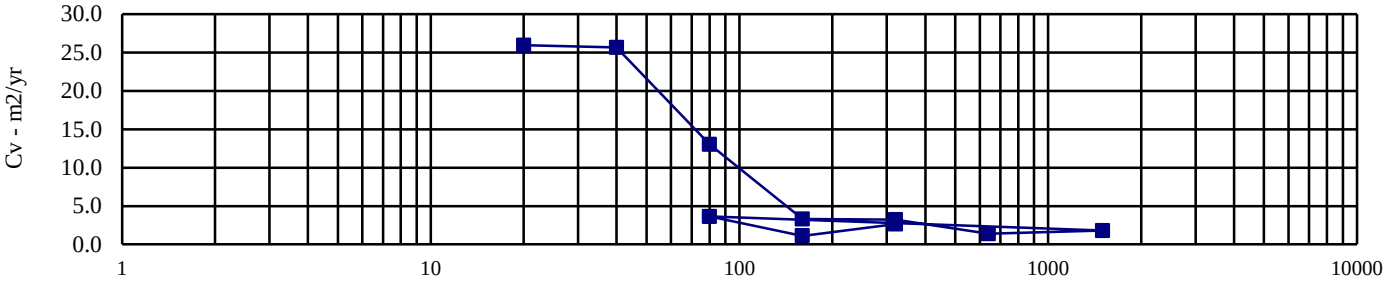
BS 1377: Part 5: 1990: Clause 3

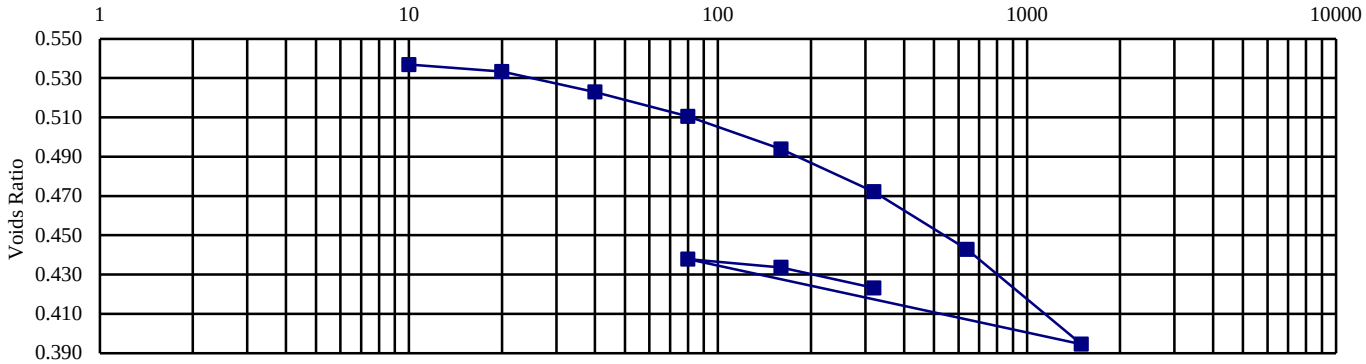
Hole Number: **CP09** **Top Depth (m):** **4.50**

Sample Number: **22** **Base Depth (m) :** **4.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	20						
Bulk Density (Mg/m3):	2.06	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.72	10	20	0.235	25.948	determine CV:	T90
Voids Ratio:	0.538	20	40	0.338	25.652	Nominal temperature	
Degree of saturation:	97.3	40	80	0.204	13.023	during test ' C:	20
Height (mm):	20.024	80	160	0.137	3.317	Remarks:	
Diameter (mm)	75.02	160	320	0.091	3.231	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.65	320	640	0.062	1.396		
		640	1500	0.039	1.796		
		1500	80	0.022	3.627		
		80	160	0.036	1.123		
		160	320	0.046	2.645		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)- Ground Investigation

Contract No: PSL22/5490

Client Ref: D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

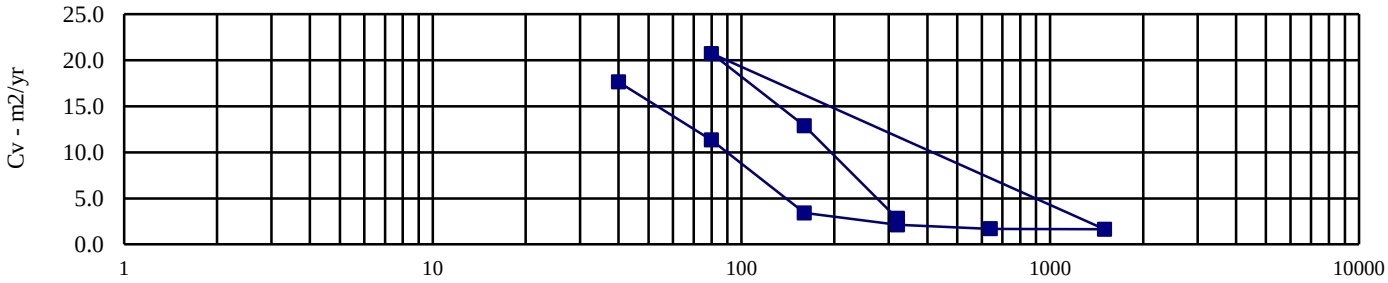
BS 1377: Part 5: 1990: Clause 3

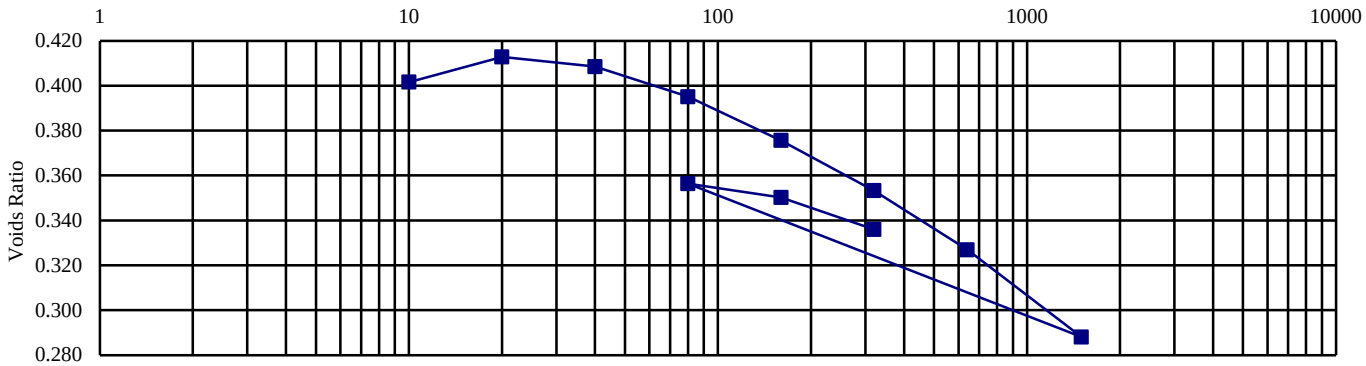
Hole Number: **CP09** **Top Depth (m):** **8.50**

Sample Number: **33** **Base Depth (m) :** **8.95**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	15						
Bulk Density (Mg/m3):	2.17	0	10	Swelling	Swelling	Method used to	
Dry Density (Mg/m3):	1.89	10	20	Swelling	Swelling	determine CV:	T90
Voids Ratio:	0.405	20	40	0.152	17.637	Nominal temperature	
Degree of saturation:	100.1	40	80	0.238	11.325	during test ' C:	20
Height (mm):	19.998	80	160	0.174	3.417	Remarks:	
Diameter (mm)	75.055	160	320	0.102	2.122	See summary of soil descriptions	
Particle Density (Mg/m3): Assumed	2.65	320	640	0.061	1.692		
		640	1500	0.034	1.638		
		1500	80	0.037	20.713		
		80	160	0.056	12.883		
		160	320	0.066	2.808		





ONE DIMENSIONAL CONSOLIDATION TEST

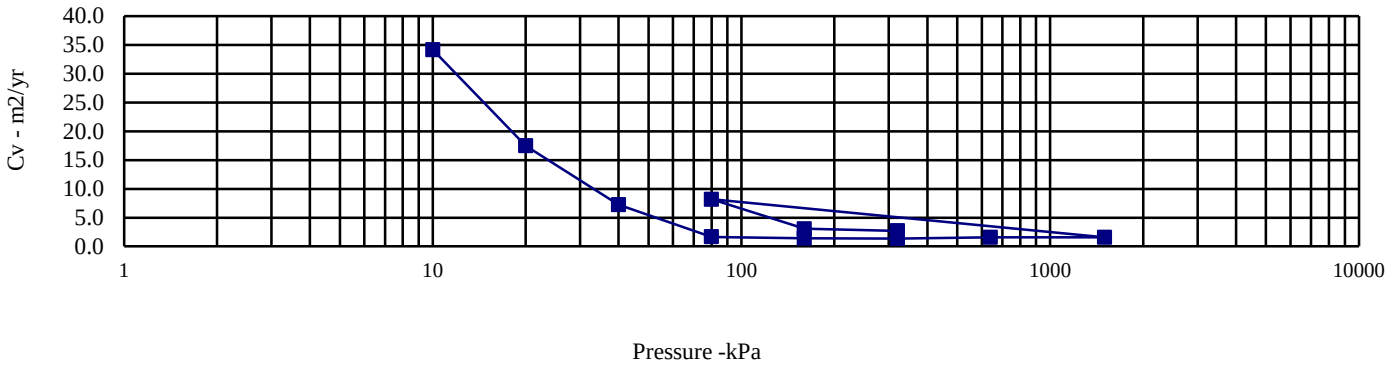
BS 1377: Part 5: 1990: Clause 3

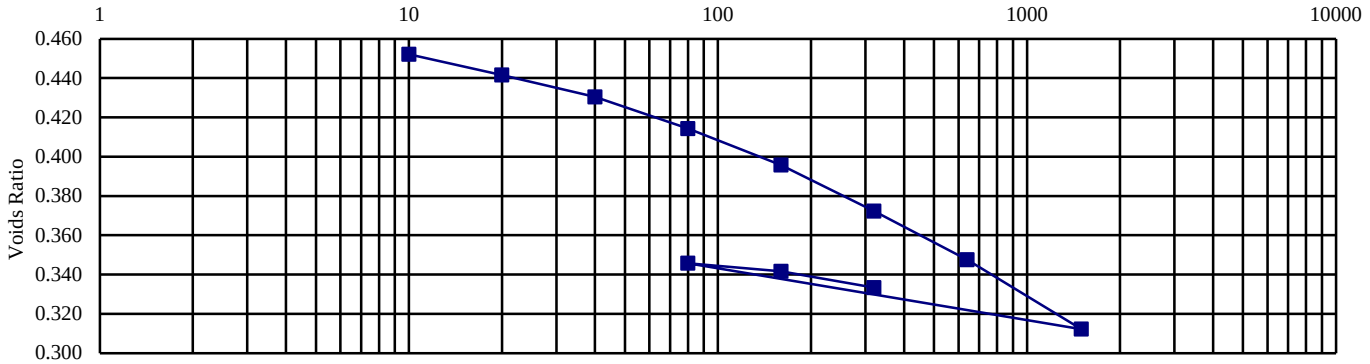
Hole Number: **CP11** **Top Depth (m):** **4.00**

Sample Number: **17** **Base Depth (m) :** **4.45**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.11	0	10	0.510	34.173	Method used to	
Dry Density (Mg/m3):	1.79	10	20	0.728	17.483	determine CV:	T90
Voids Ratio:	0.460	20	40	0.387	7.236	Nominal temperature	
Degree of saturation:	101.8	40	80	0.282	1.665	during test ' C:	20
Height (mm):	20.018	80	160	0.164	1.394	Remarks:	
Diameter (mm)	74.935	160	320	0.105	1.368	See summary of soil descriptions	
Particle Density (Mg/m3): Measured	2.61	320	640	0.056	1.587		
		640	1500	0.031	1.592		
		1500	80	0.018	8.185		
		80	160	0.038	3.059		
		160	320	0.039	2.699		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** PSL22/5490 **Client Ref:** D2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

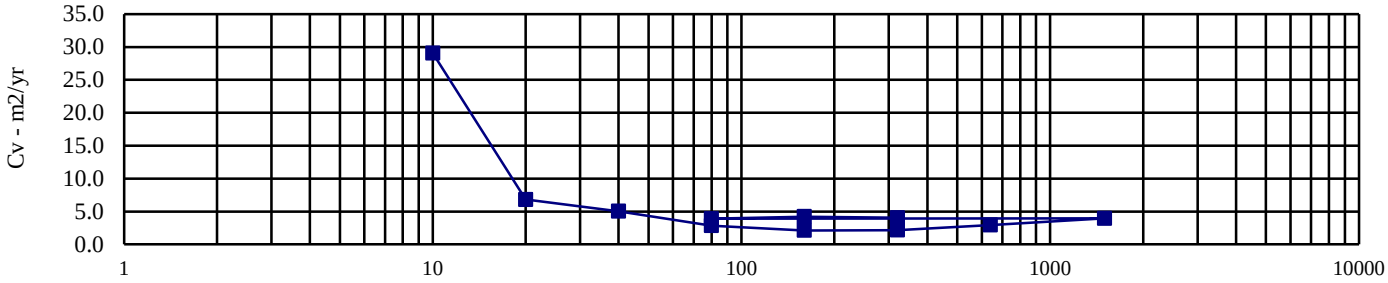
BS 1377: Part 5: 1990: Clause 3

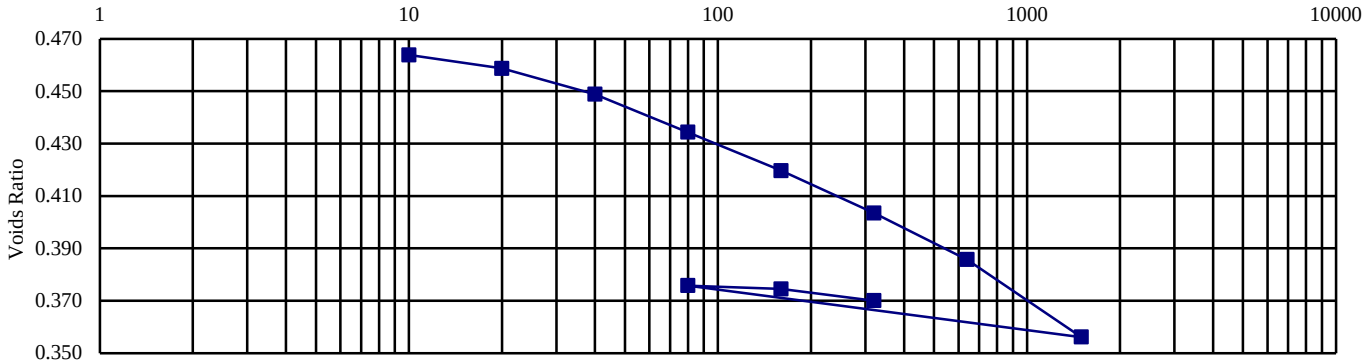
Hole Number: **CP11** **Top Depth (m):** **10.00**

Sample Number: **38** **Base Depth (m) :** **10.45**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.12	0	10	0.565	29.063	Method used to	
Dry Density (Mg/m3):	1.80	10	20	0.352	6.823	determine CV:	T90
Voids Ratio:	0.472	20	40	0.338	5.027	Nominal temperature	
Degree of saturation:	99.9	40	80	0.250	2.848	during test ' C:	20
Height (mm):	20.006	80	160	0.128	2.138	Remarks:	
Diameter (mm)	74.963	160	320	0.071	2.181	See summary of soil descriptions	
Particle Density (Mg/m3):	2.65	320	640	0.040	2.945		
Measured		640	1500	0.025	3.969		
		1500	80	0.010	3.922		
		80	160	0.011	4.219		
		160	320	0.020	4.054		





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2)- Ground Investigation**	**Contract No:** **PSL22/5490** **Client Ref:** **D2027-22**

ONE DIMENSIONAL CONSOLIDATION TEST

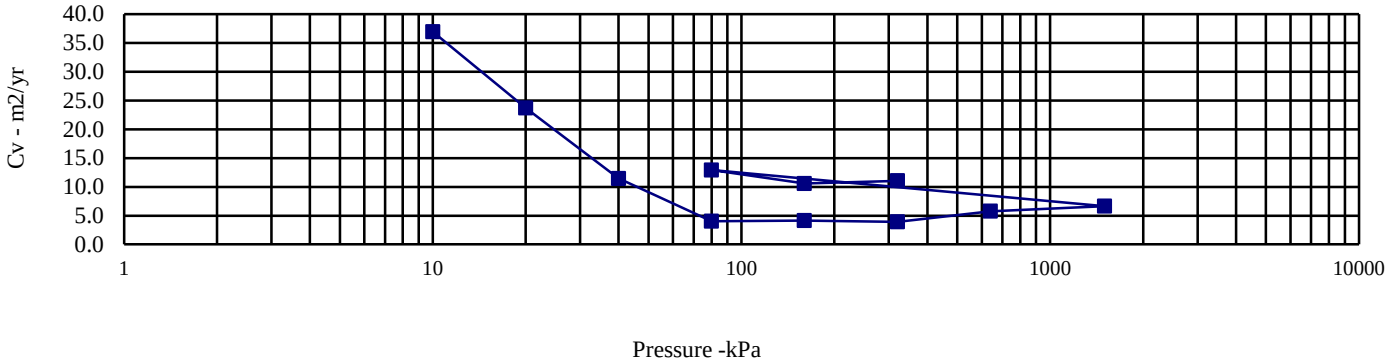
BS 1377: Part 5: 1990: Clause 3

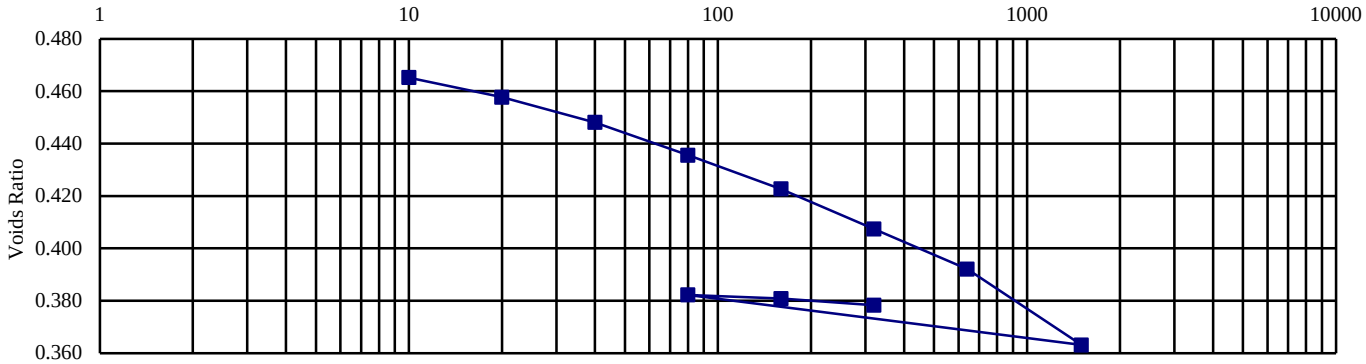
Hole Number: **CP11** **Top Depth (m):** **12.00**

Sample Number: **45** **Base Depth (m) :** **12.45**

Sample Type: **UT**

Initial Conditions		Pressure Range kPa		Mv m2/MN	Cv m2/yr	Specimen location within tube:	Middle
Moisture Content (%):	18						
Bulk Density (Mg/m3):	2.15	0	10	0.519	36.941	Method used to	
Dry Density (Mg/m3):	1.81	10	20	0.512	23.702	determine CV:	T90
Voids Ratio:	0.473	20	40	0.330	11.459	Nominal temperature	
Degree of saturation:	104.1	40	80	0.216	4.048	during test ' C:	20
Height (mm):	20.036	80	160	0.112	4.151	Remarks:	
Diameter (mm)	75.048	160	320	0.067	3.927	See summary of soil descriptions	
Particle Density (Mg/m3):	2.67	320	640	0.034	5.764		
Measured		640	1500	0.024	6.645		
		1500	80	0.010	12.905		
		80	160	0.013	10.562		
		160	320	0.011	11.044		





UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2)- Ground Investigation

Contract No:
PSL22/5490
Client Ref:
D2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			6.50-6.95m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.5
	Initial Sample Diameter	D_0	(mm)	105.4
	Initial Sample Weight	W_0	(gr)	3660.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.98
	Particle Density	ρ_s	(Mg/m3)	2.64

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	1100	1200	1400	
Initial Back Pressure	U_{bi}	(kPa)	1000	1000	1000	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 4			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	19			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.67			
Initial Voids Ratio	e_i	.	0.582			
Initial Degree of Saturation	S_i	(%)	85			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	16			
Final Dry Density	ρ_{df}	(Mg/m3)	1.79			
Final Voids Ratio	e_f	.	0.475			
Final Degree of Saturation	S_f	(%)	91.3			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	3.77	14.14	19.25	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	91.7	187.4	314.9	
Minor Stress At Failure	σ_3'	(kPa)	64.0	154.0	273.0	
Major Stress At Failure	σ_1'	(kPa)	155.7	341.4	587.9	
Principal Stress Ratio At Failure	σ_1'/σ_3'		2.432	2.217	2.154	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP09 6.50-6.95m UT28
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP09
		Sample	6.50-6.95m UT28
Client	socotec	Depth	6.50-6.95m

UKAS TESTING 4043

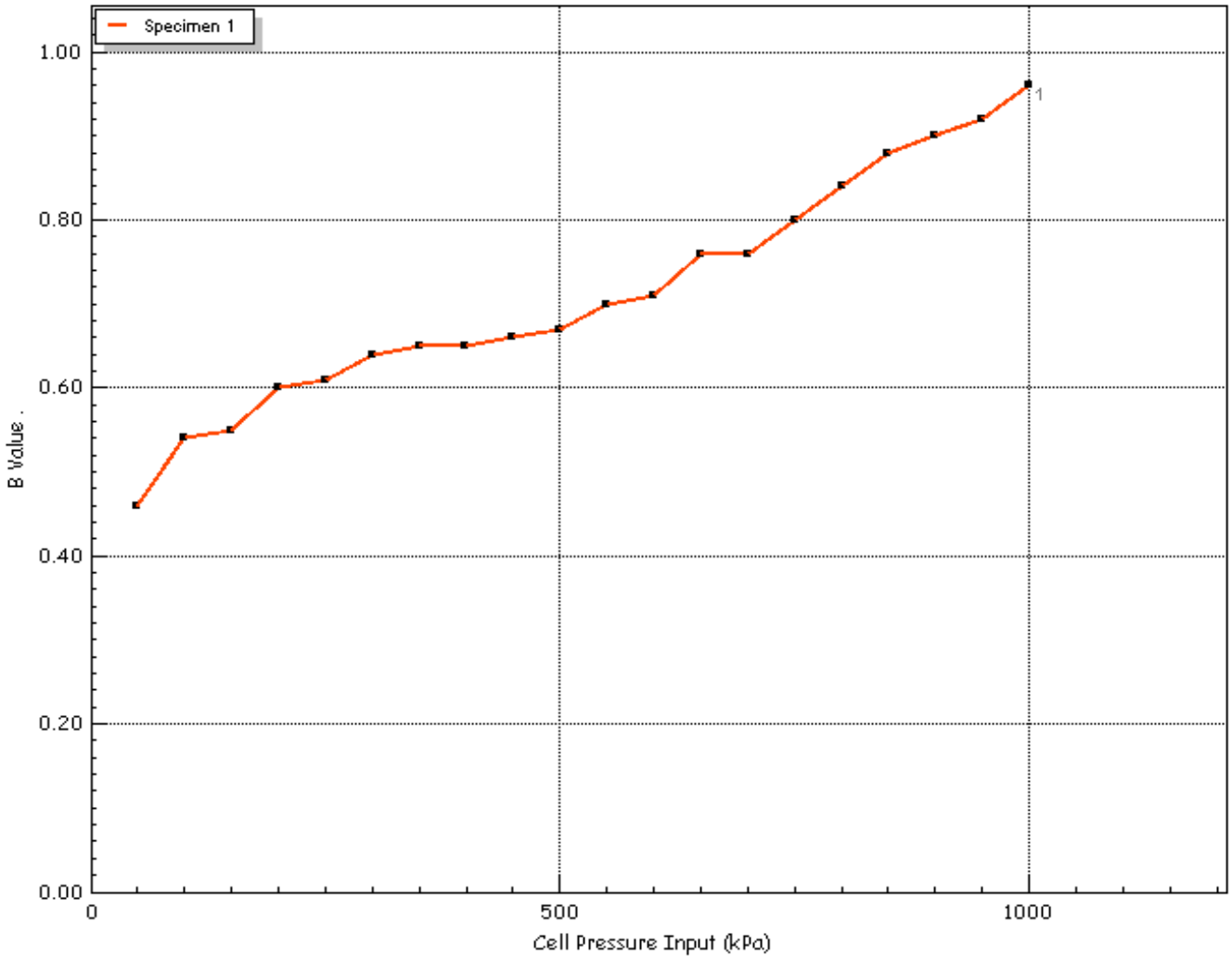
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	1000
Pore Water Pressure Input	u pwp	(kPa)	982
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP09 6.50-6.95m UT28
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP09
		Sample	6.50-6.95m UT28
Client	socotec	Depth	6.50-6.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

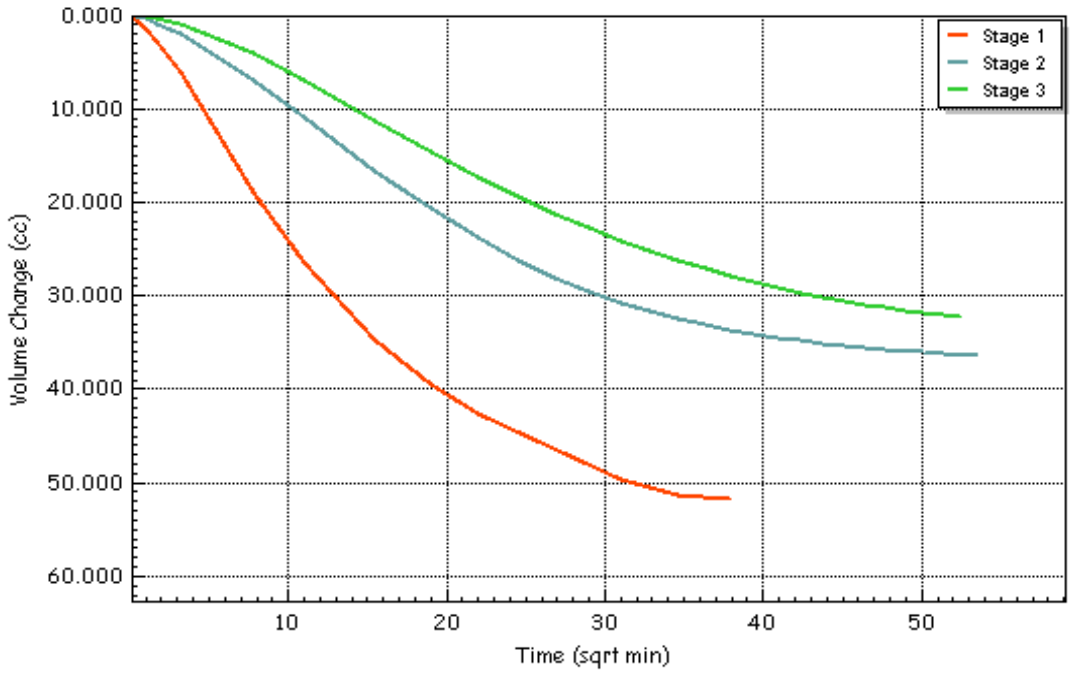
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	1100	1200	1400
Initial Back Pressure	u_{bi}	(kPa)	1000	1000	1000
Pore Water Pressure Input	u_{pwp}	(kPa)	1078	1088	1208
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	95.45	96.15
Volumetric Strain	ε_v%	(%)	2.80	1.97	1.75
Corrected Length	L_C	(mm)	209.5	200.3	177.5
Corrected Area	A_C	(cm2)	85.62	87.75	97.21
Corrected Volume	V_C	(cc)	1793.608	1757.199	1724.913
t100	t_{100}	(min)	420.61	971.40	1375.96
Consolidation	c_v	(m2/year)	0.545	0.236	0.167
Compressibility	m_v	(m2/MN)	0.360	0.235	0.087
Test Time	t_F	(h:m:s)	12:37:05	29:08:31	41:16:43
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.01384	0.01384	0.01384

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP09 6.50-6.95m UT28
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP09
		Sample	6.50-6.95m UT28
Client	socotec	Depth	6.50-6.95m

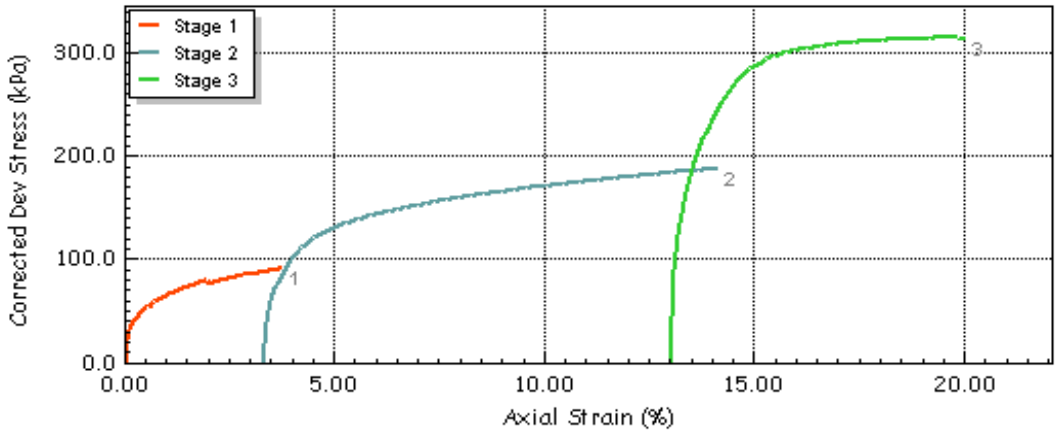
UKAS TESTING 4043

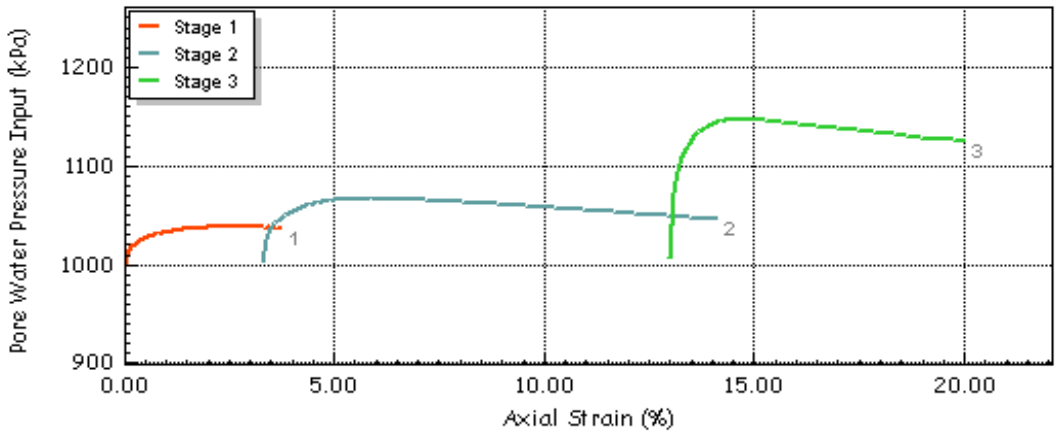
PSL PROFESSIONAL SOILS LABORATORY

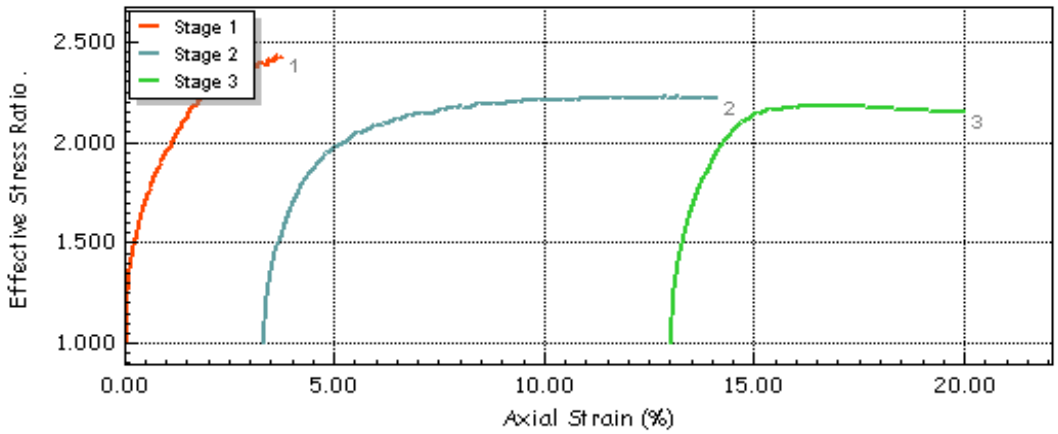
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP09 6.50-6.95m UT28
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP09
		Sample	6.50-6.95m UT28
Client	socotec	Depth	6.50-6.95m

UKAS TESTING 4043

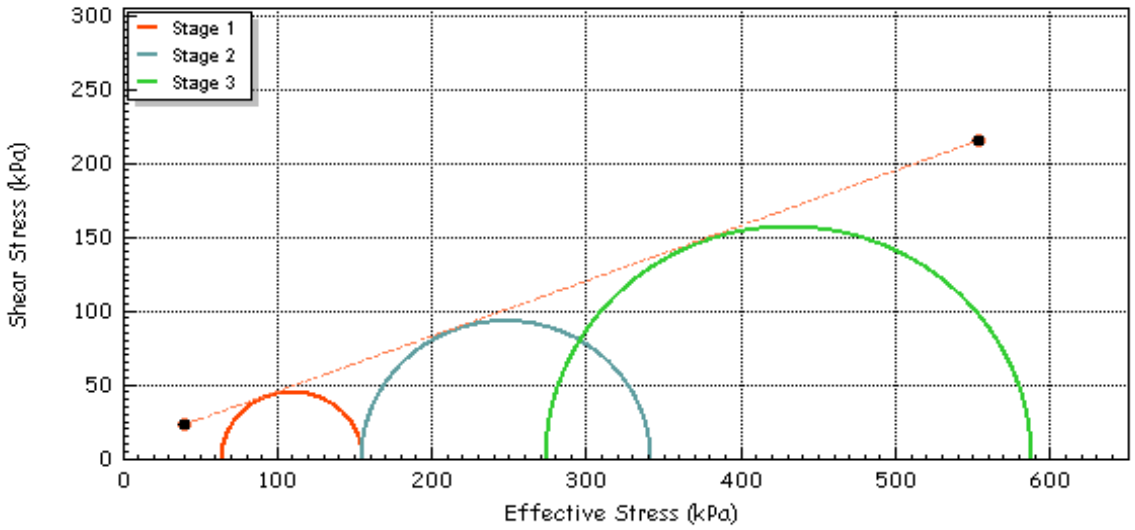
PSL PROFESSIONAL SOILS LABORATORY

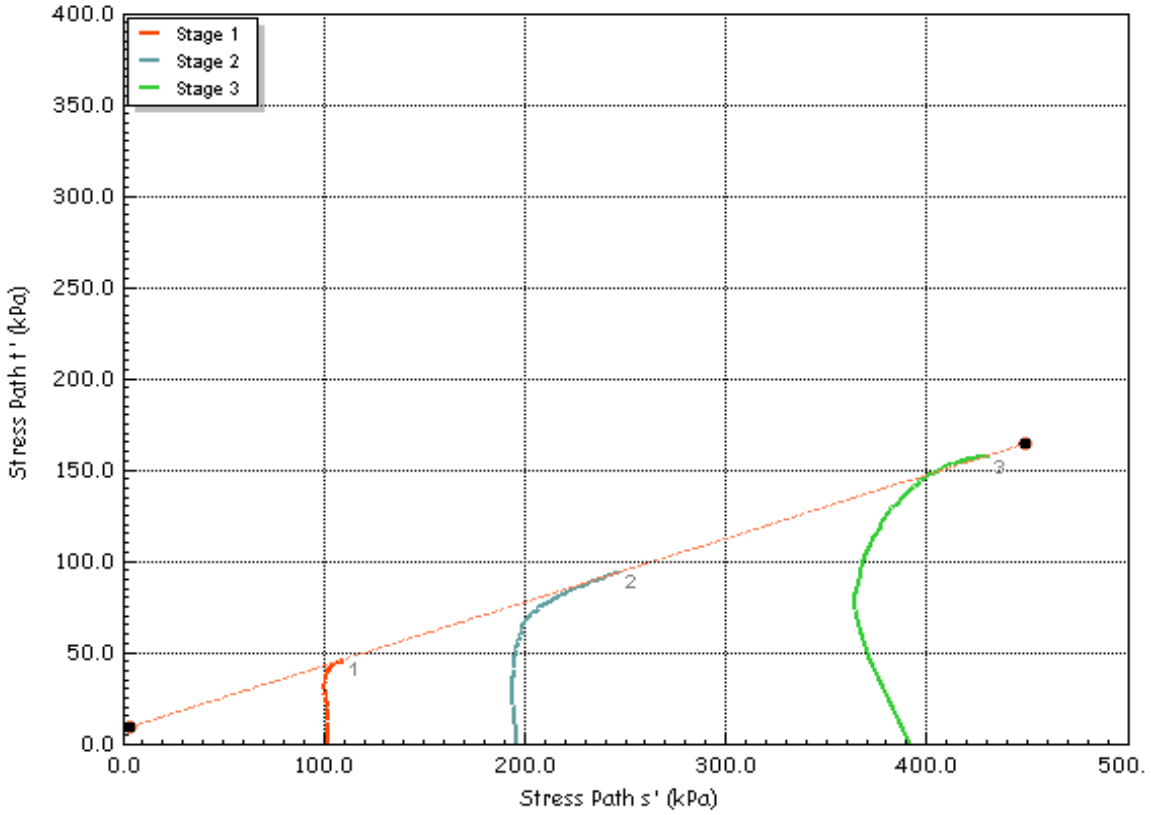
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	8.72	Effective Cohesion	c'	(kPa)	8.72
Effective Friction	ϕ'	(deg)	20.4	Effective Friction	ϕ'	(deg)	20.4





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP09 6.50-6.95m UT28
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP09
		Sample	6.50-6.95m UT28
Client	socotec	Depth	6.50-6.95m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			2.00-2.45m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.5
	Initial Sample Diameter	D_0	(mm)	106.3
	Initial Sample Weight	W_0	(gr)	3610.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.92
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	875	950	1100	
Initial Back Pressure	U_{bi}	(kPa)	800	800	800	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	30			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.47			
Initial Voids Ratio	e_i	.	0.804			
Initial Degree of Saturation	S_i	(%)	100			
B Value	B	.	0.98			

Final Conditions						
Final Moisture	ω_f	(%)	30			
Final Dry Density	ρ_{df}	(Mg/m3)	1.53			
Final Voids Ratio	e_f	.	0.739			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	3.97	5.25	17.11	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	135.9	183.8	322.5	
Minor Stress At Failure	σ_3'	(kPa)	71.0	118.0	253.0	
Major Stress At Failure	σ_1'	(kPa)	206.9	301.8	575.5	
Principal Stress Ratio At Failure	σ_1'/σ_3'		2.913	2.558	2.275	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 2-2.45m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	2-2.45m
Client	socotec	Depth	2.00-2.45m

UKAS TESTING 4043

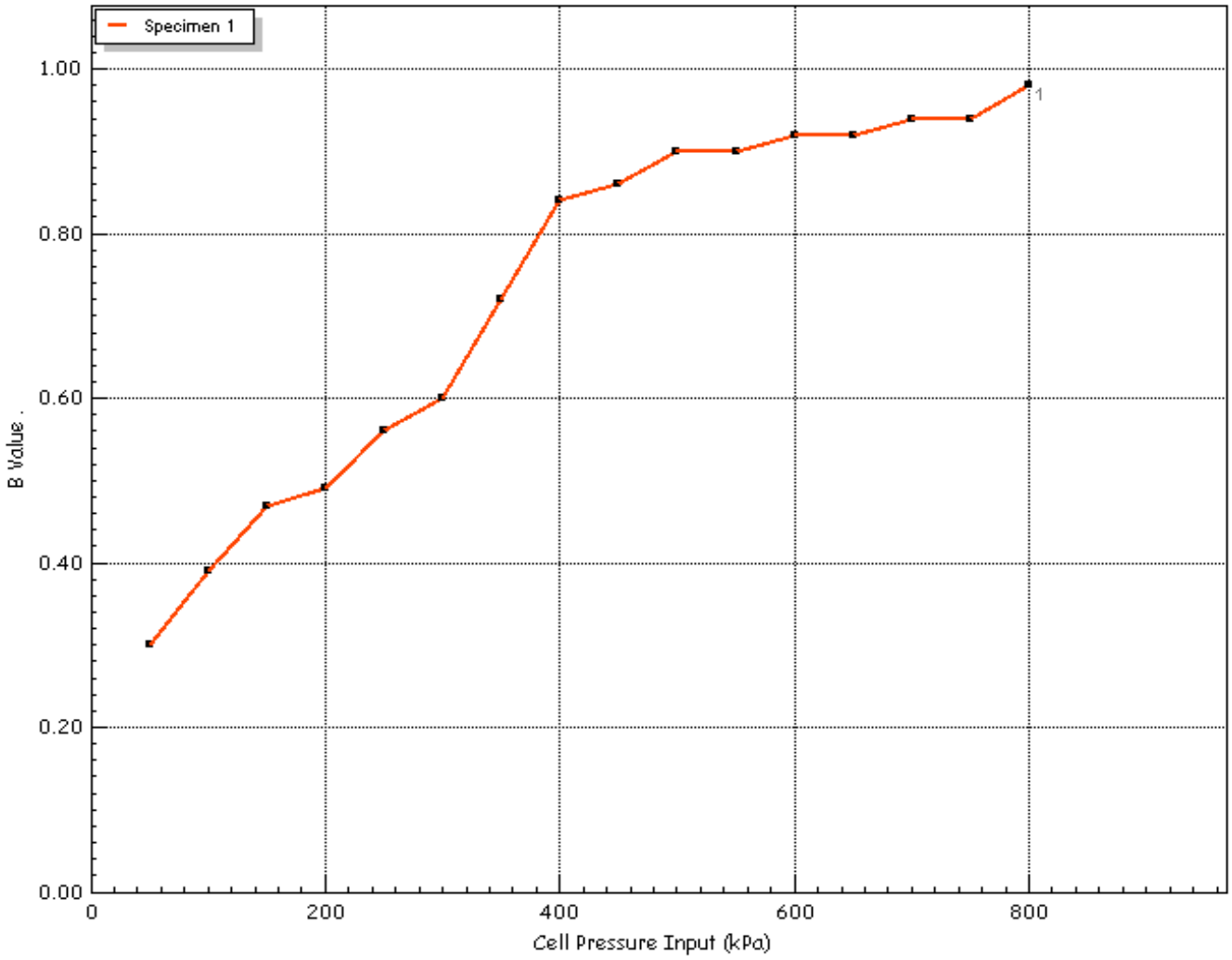
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	800
Pore Water Pressure Input	u pwp	(kPa)	780
B Value	B	.	0.98



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 2-2.45m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	2-2.45m
Client	socotec	Depth	2.00-2.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

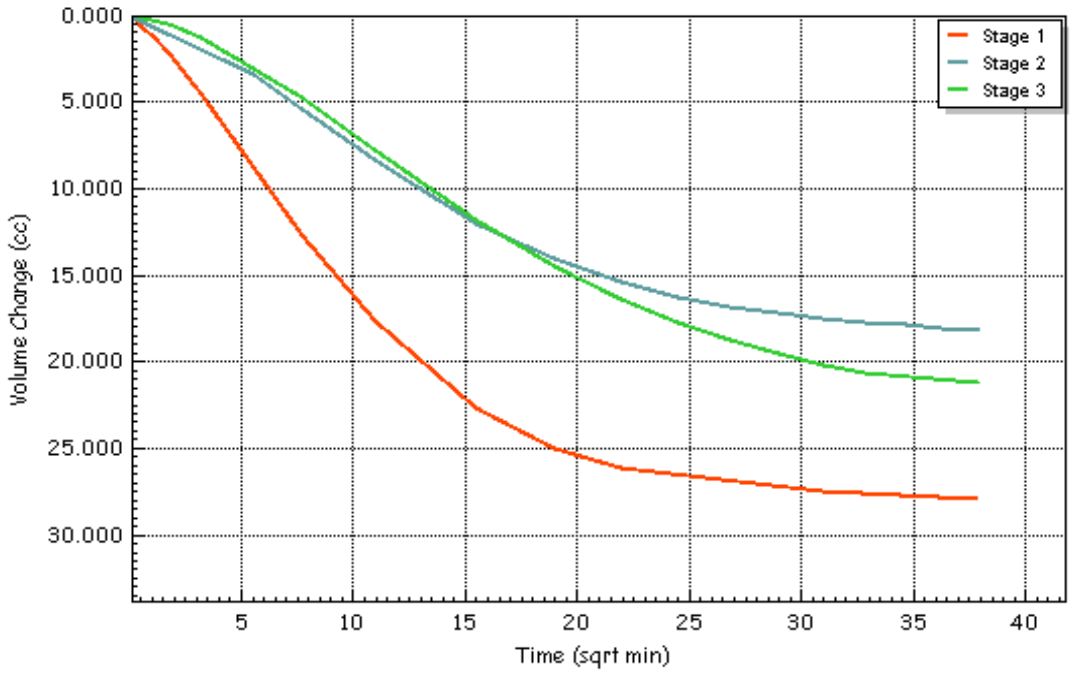
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	875	950	1100
Initial Back Pressure	u_{bi}	(kPa)	800	800	800
Pore Water Pressure Input	u_{pwp}	(kPa)	850	869	945
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.49	0.97	1.13
Corrected Length	L_C	(mm)	210.5	201.4	196.7
Corrected Area	A_C	(cm2)	87.87	90.90	92.01
Corrected Volume	V_C	(cc)	1849.078	1830.876	1809.662
t100	t_{100}	(min)	240.46	472.18	598.27
Consolidation	c_v	(m2/year)	0.978	0.498	0.393
Compressibility	m_v	(m2/MN)	0.298	0.141	0.078
Test Time	t_F	(h:m:s)	07:12:49	14:09:55	17:56:53
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.02431	0.02431	0.02431

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 2-2.45m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	2-2.45m
Client	socotec	Depth	2.00-2.45m

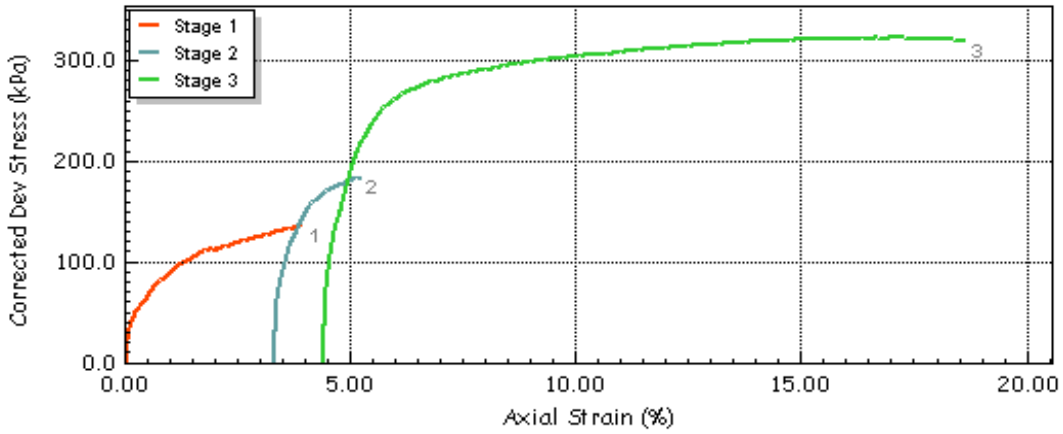
UKAS TESTING 4043

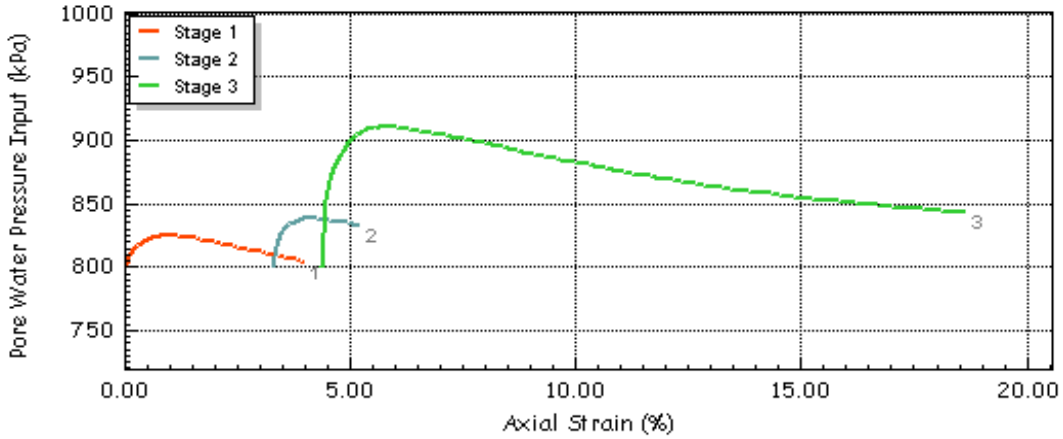
PSL PROFESSIONAL SOILS LABORATORY

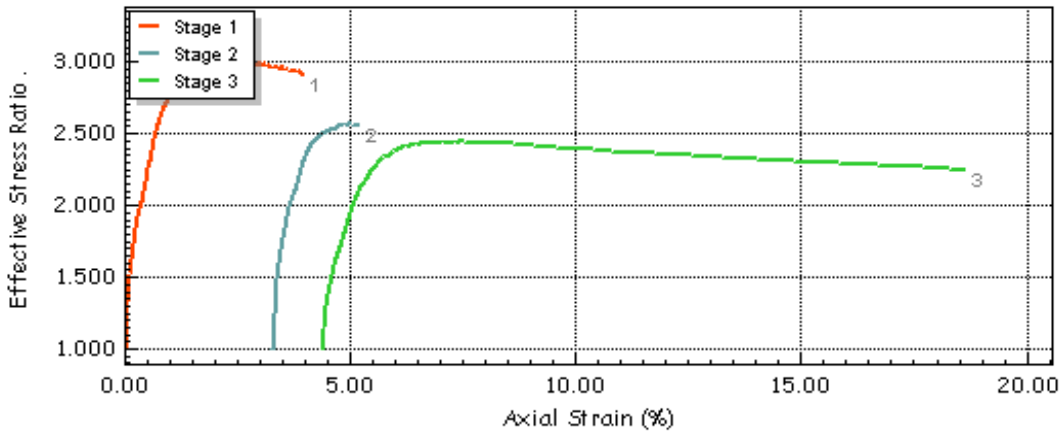
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 2-2.45m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	2-2.45m
Client	socotec	Depth	2.00-2.45m

UKAS TESTING 4043

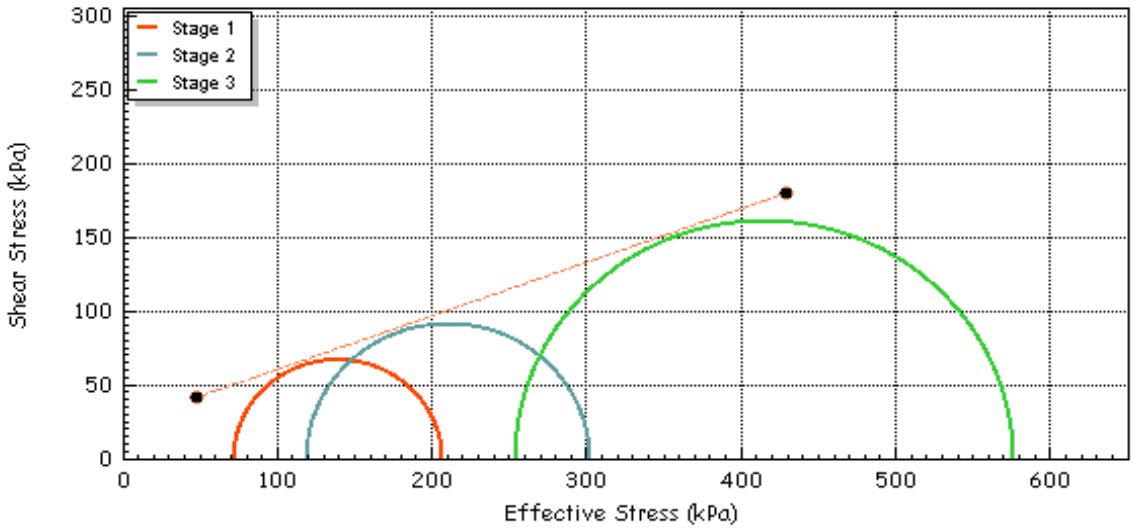
PSL PROFESSIONAL SOILS LABORATORY

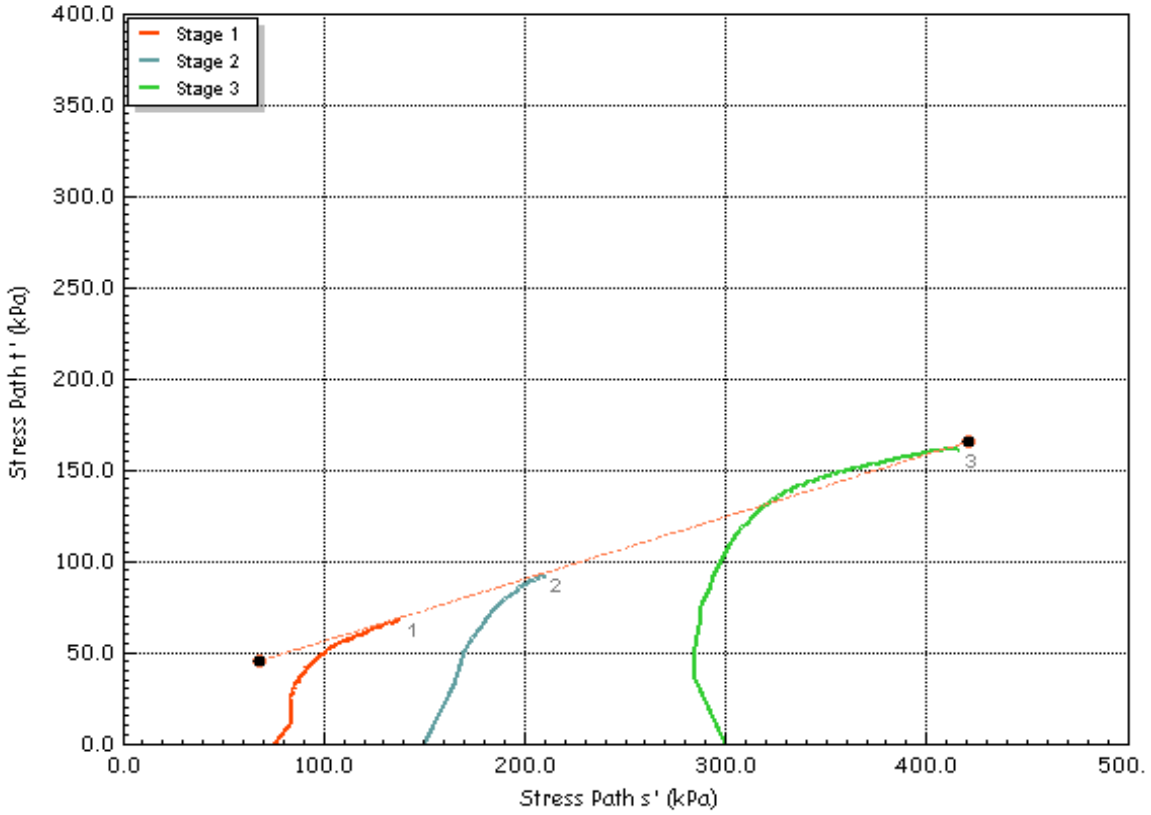
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	24.18	Effective Cohesion	c'	(kPa)	24.18
Effective Friction	ϕ'	(deg)	19.9	Effective Friction	ϕ'	(deg)	19.9





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 2-2.45m
		Test Date	12/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	2-2.45m
Client	socotec	Depth	2.00-2.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			6.00-6.45m
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.5
	Initial Sample Diameter	D_0	(mm)	105.4
	Initial Sample Weight	W_0	(gr)	3756.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.04
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	1249	1350	1549	
Initial Back Pressure	U_{bi}	(kPa)	1150	1150	1150	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	17			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.74			
Initial Voids Ratio	e_i	.	0.533			
Initial Degree of Saturation	S_i	(%)	86			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	17			
Final Dry Density	ρ_{df}	(Mg/m3)	1.79			
Final Voids Ratio	e_f	.	0.485			
Final Degree of Saturation	S_f	(%)	90.5			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev. Stress	Max. Dev. Stress	Max. Dev. Stress	
Strain At Failure	ε_f	(%)	2.27	4.51	17.15	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	163.4	295.4	587.1	
Minor Stress At Failure	σ_3'	(kPa)	67.0	157.0	352.0	
Major Stress At Failure	σ_1'	(kPa)	230.4	452.4	939.1	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.440	2.881	2.668	

Notes

Plastic

Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 6.00-6.45m 24UT
		Test Date	13/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	6.00-6.45m 24UT
Client	Socotec	Depth	6.00-6.45m

UKAS TESTING 4043

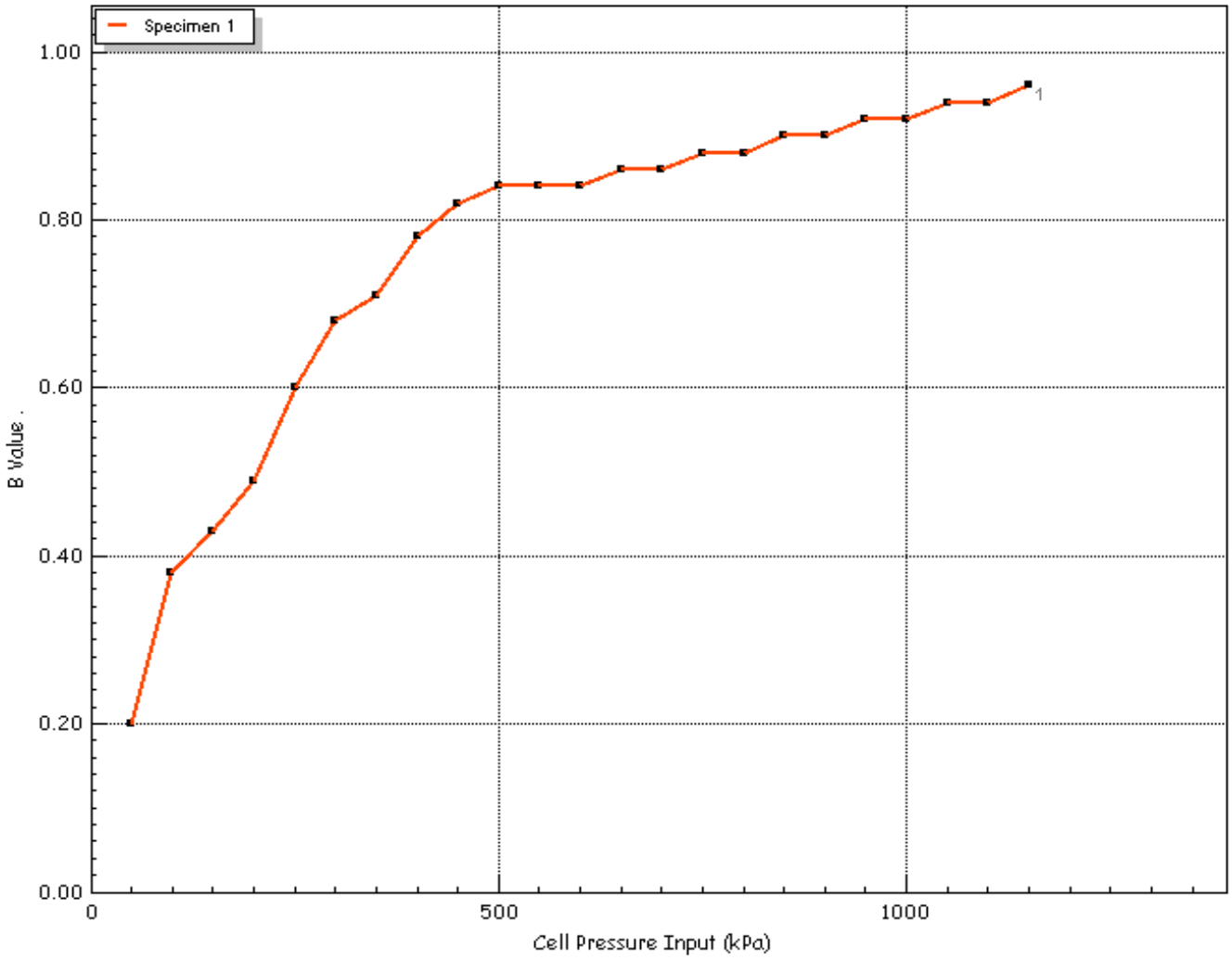
PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	1150
Pore Water Pressure Input	u pwp	(kPa)	1133
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 6.00-6.45m 24UT
		Test Date	13/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	6.00-6.45m 24UT
Client	Socotec	Depth	6.00-6.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

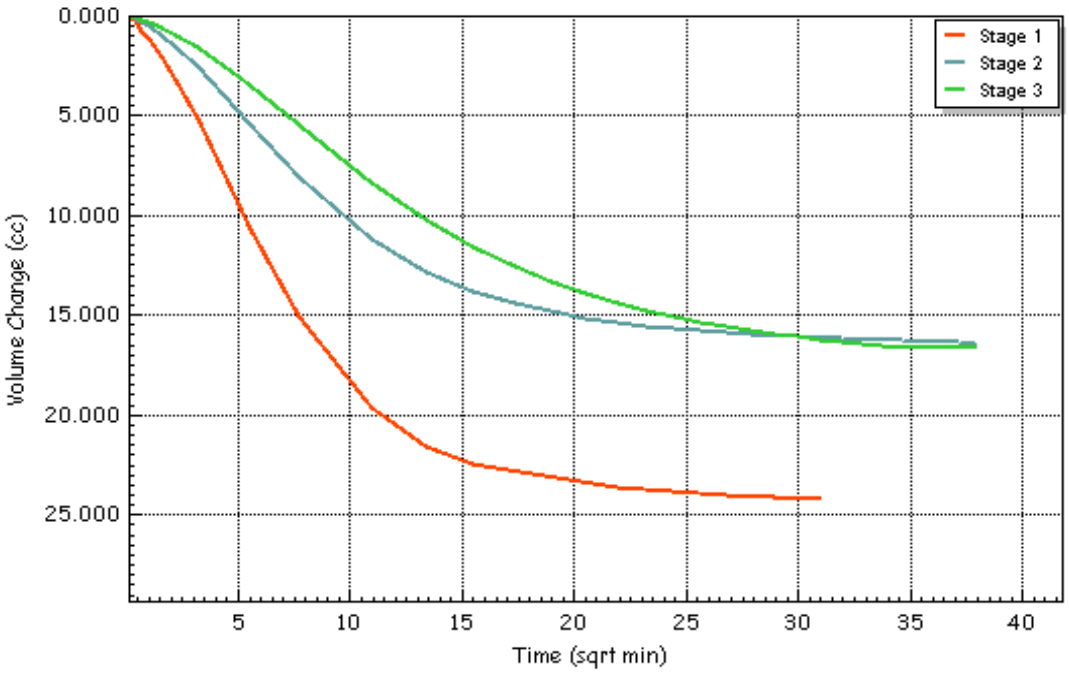
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	1250	1350	1550
Initial Back Pressure	u_{bi}	(kPa)	1150	1150	1150
Pore Water Pressure Input	u_{pwp}	(kPa)	1229	1254	1387
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	1.31	0.89	0.90
Corrected Length	L_C	(mm)	210.6	205.2	199.3
Corrected Area	A_C	(cm2)	86.49	87.96	89.73
Corrected Volume	V_C	(cc)	1821.158	1804.759	1788.106
t100	t_{100}	(min)	123.97	213.74	391.73
Consolidation	c_v	(m2/year)	1.850	1.073	0.586
Compressibility	m_v	(m2/MN)	0.166	0.085	0.038
Test Time	t_F	(h:m:s)	03:43:08	06:24:43	11:45:06
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.04718	0.04718	0.04718

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 6.00-6.45m 24UT
		Test Date	13/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	6.00-6.45m 24UT
Client	Socotec	Depth	6.00-6.45m

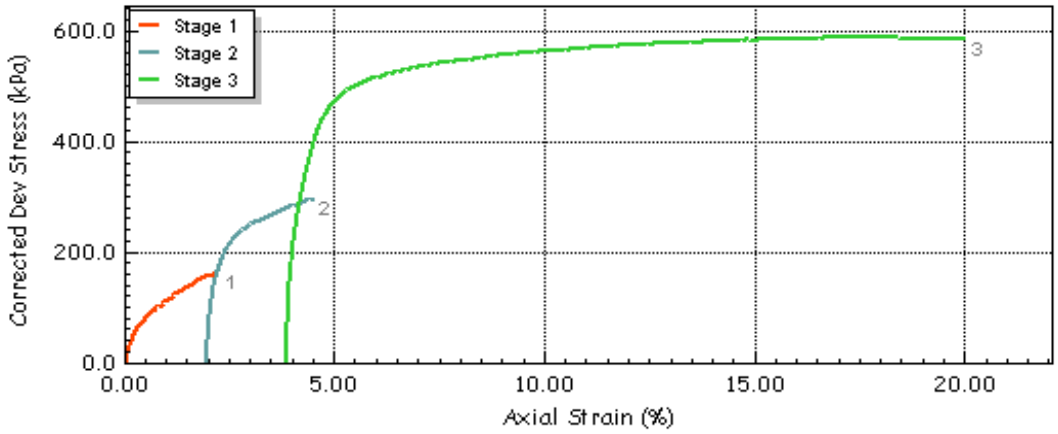
UKAS TESTING 4043

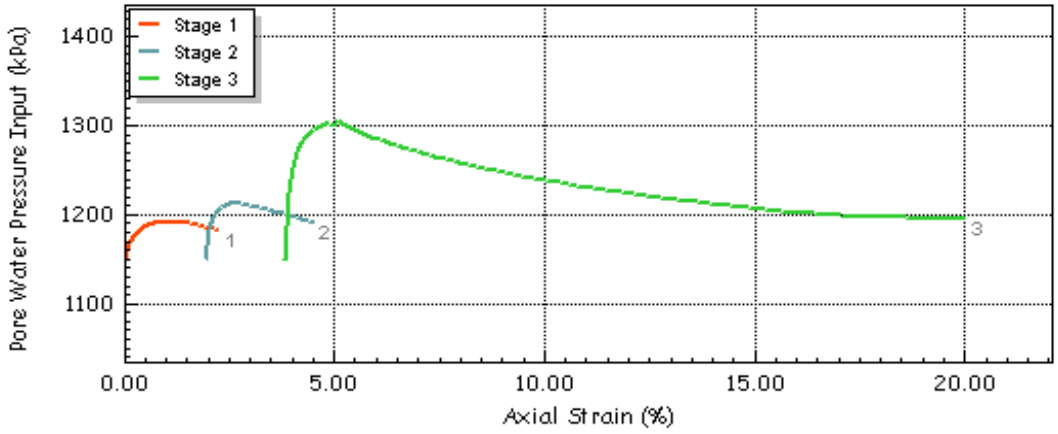
PSL PROFESSIONAL SOILS LABORATORY

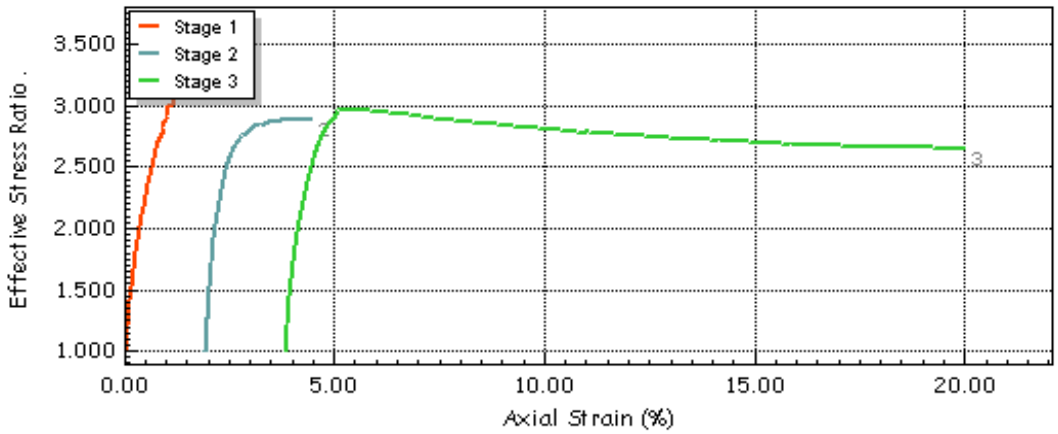
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 6.00-6.45m 24UT
		Test Date	13/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	6.00-6.45m 24UT
Client	Socotec	Depth	6.00-6.45m

UKAS TESTING 4043

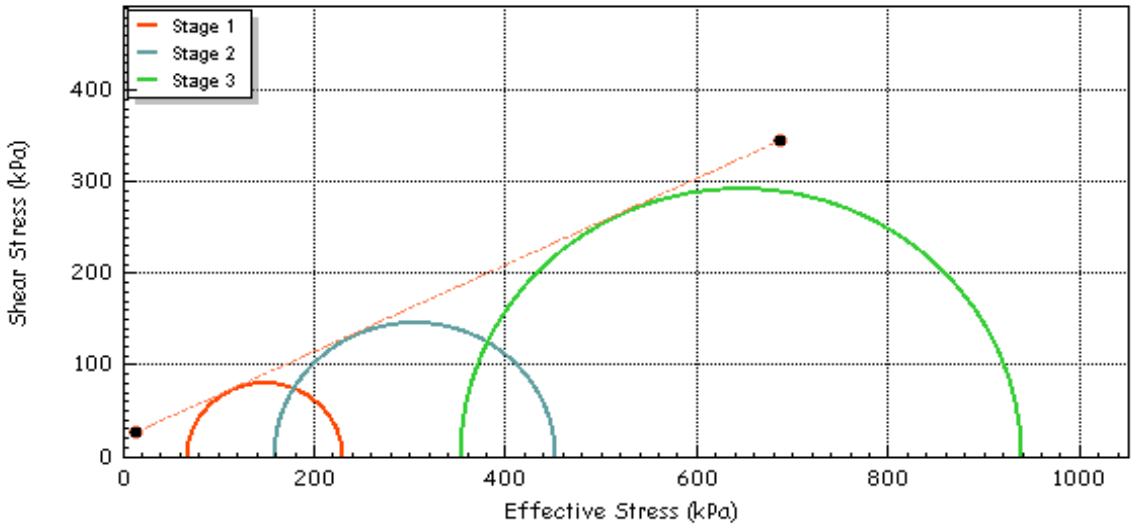
PSL PROFESSIONAL SOILS LABORATORY

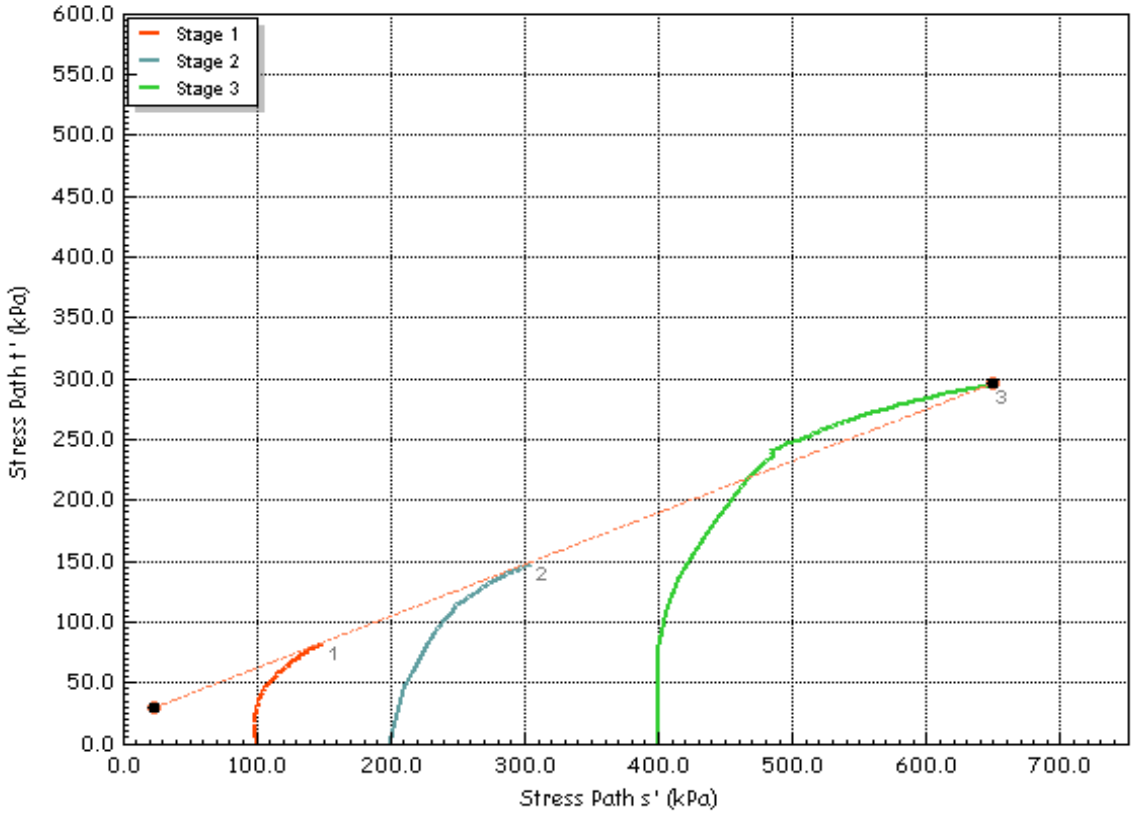
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	21.61	Effective Cohesion	c'	(kPa)	21.61
Effective Friction	ϕ'	(deg)	25.3	Effective Friction	ϕ'	(deg)	25.3





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	CP11 6.00-6.45m 24UT
		Test Date	13/09/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	CP11
		Sample	6.00-6.45m 24UT
Client	Socotec	Depth	6.00-6.45m

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY

Certificate of Analysis

Certificate Number 22-17194 *Issued:* 07-Sep-22

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 22-17194

Client Reference PSL22/5490

Order No (not supplied)

Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

Description 2 Soil samples.

Date Received 01-Sep-22

Date Started 01-Sep-22

Date Completed 07-Sep-22

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By [redacted]

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 22-17194
Client Ref PSL22/5490
Contract Title Stansted Terminal 2 (ST2) - Ground Investigation

Lab No	2052586	2052587
.Sample ID	CP09	CP11
Depth	5.00	4.45-4.55
Other ID	23	18
Sample Type	D	D
Sampling Date	n/s	n/s
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Magnesium Aqueous Extract	DETSC 2076*	10	mg/l	99	45
Inorganics					
pH	DETSC 2008#		pH	7.4	7.8
Chloride Aqueous Extract	DETSC 2055	1	mg/l	15	17
Nitrate Aqueous Extract as NO3	DETSC 2055	1	mg/l	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	2300	760
Sulphur as S, Total	DETSC 2320	0.01	%	0.79	0.42
Sulphate as SO4, Total	DETSC 2321#	0.01	%	2.5	0.21

Key: * -not accredited. # -MCERTS (accreditation only applies if report carries the MCERTS logo). n/s -not supplied.

Information in Support of the Analytical Results

Our Ref 22-17194
Client Ref PSL22/5490
Contract Stansted Terminal 2 (ST2) - Ground Investigation

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2052586	CP09 5.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2052587	CP11 4.45-4.55 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

LABORATORY REPORT

4043

Contract Number: PSL22/6392

Report Date: 11 October 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 4/10/2022
Date Commenced: 4/10/2022
Date Completed: 10/10/2022

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)

[redacted]

L Knight (Assistant Laboratory Manager)
S Eyre (Senior Technician)
M Fennell (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS17	18	D	1.80		Brown gravelly sandy CLAY.
DS17	21	D	2.80		Brown mottled grey gravelly sandy CLAY.
DS17	24	D	3.80		Brown mottled grey gravelly sandy CLAY.
TP13	9	D	1.30		Brown mottled grey gravelly sandy CLAY.
TP13	16	D	3.20		Brown gravelly sandy CLAY.
TP14	6	D	0.80		Brown gravelly sandy CLAY.
TP14	12	D	2.00		Brown gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS17	18	D	1.80					38	16	22	83	Intermediate Plasticity CI
DS17	24	D	3.80					45	22	23	86	Intermediate Plasticity CI
TP13	9	D	1.30					42	21	21	80	Intermediate Plasticity CI
TP14	6	D	0.80					44	22	22	89	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation

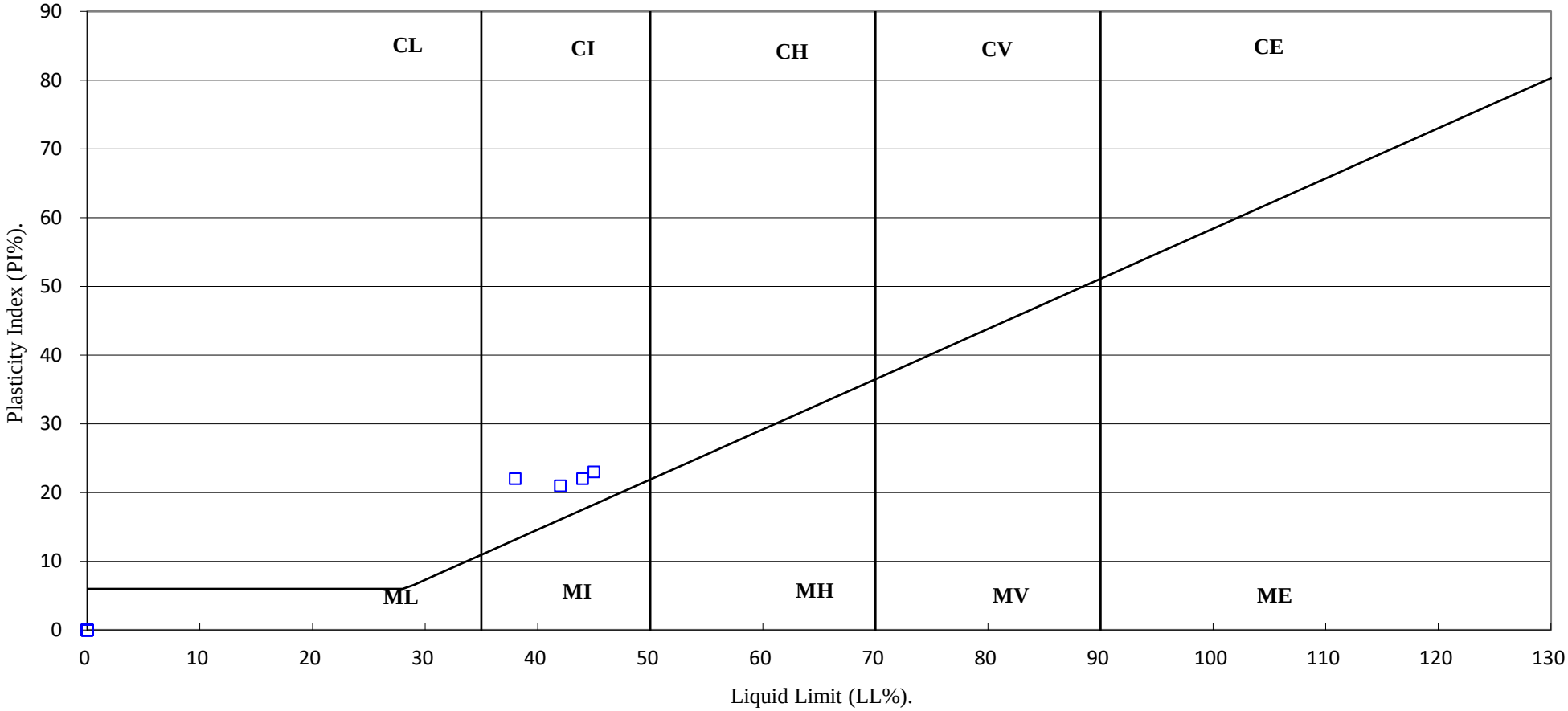
Contract No:

PSL22/6392

Client Ref:

D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal (ST2) - Ground Investigation	**Contract No:** PSL22/6392 **Client Ref:** D2027-22

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
DS17	18	D	1.80		20					
DS17	21	D	2.80		21					
DS17	24	D	3.80		17					
TP13	9	D	1.30		17					
TP13	16	D	3.20		15					
TP14	6	D	0.80		12					
TP14	12	D	2.00		14					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation

Contract No:

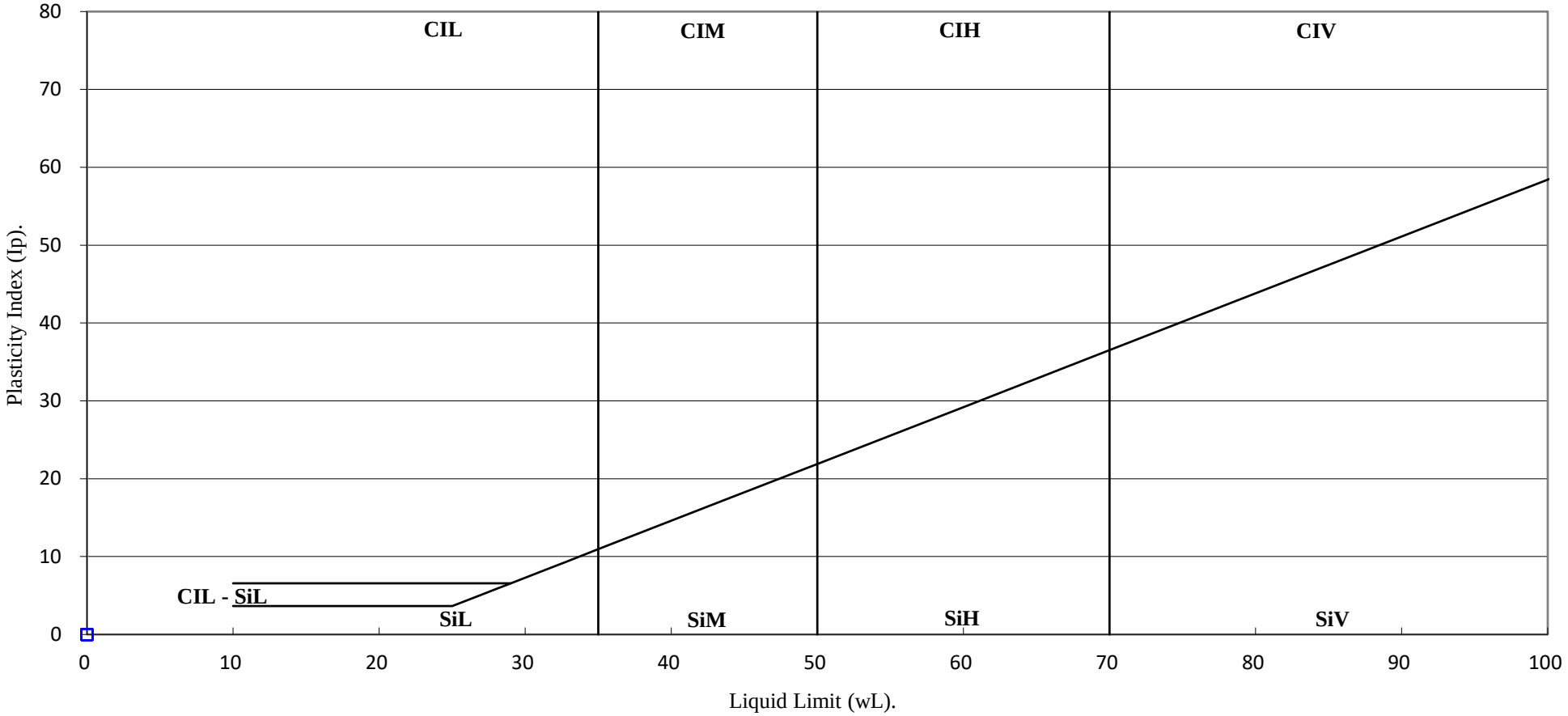
PSL22/6392

Client Ref:

D2027-22

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:**
			PSL22/6392
			Client Ref:
			D2027-22

2531

ANALYTICAL TEST REPORT

Contract no:	114361
Contract name:	Stansted Terminal 2 (ST2) - Ground Investigation
Client reference:	PSL22/6392
Clients name:	Professional Soils Laboratory
Clients address:	5/7 Hexthorpe Road Doncaster DN4 0AR
Samples received:	06 October 2022
Analysis started:	06 October 2022
Analysis completed:	14 October 2022
Report issued:	14 October 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing
	NAD	No Asbestos Detected

Approved by: [redacted]

Abbie Neasham-Bourn

Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			114361-1	114361-2	114361-3
Sample id			DS17	TP13	TP14
Depth (m)			2.50-2.95	0.70	0.80
Sample Type			D	D	D
Date sampled			-	-	-
Test	Method	Units			
pH	CE004 U	units	8.0	8.3	8.6
Magnesium (2:1 water soluble)	CE061	mg/l Mg	4.0	1.3	2.1
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	9.4	7.2	2.7
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	59	8.2	<1
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	217	61	27
Sulphate (total)	CE062 U	mg/kg SO_4	957	388	255
Sulphur (total)	CE062	mg/kg S	319	129	85
Sulphur (total)	CE062	% w/w S	0.03	0.01	<0.003

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (total)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO_4
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		33	mg/kg S
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		0.003	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
114361-1	DS17	2.50-2.95	Y	All (NSD)
114361-2	TP13	0.70	Y	All (NSD)
114361-3	TP14	0.80	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.

LABORATORY REPORT

4043

Contract Number: PSL22/6393

Report Date: 11 October 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 4/10/2022
Date Commenced: 4/10/2022
Date Completed: 10/10/2022

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)
R Berriman (Quality Manager)
S Royle (Laboratory Manager)

[redacted]

L Knight (Assistant Laboratory Manager)
S Eyre (Senior Technician)
M Fennell (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS06	6	D	0.60		Brown gravelly sandy CLAY.
DS06	16	D	1.80		Brown gravelly sandy CLAY.
DS06	21	D	3.60		Brown mottled grey gravelly sandy CLAY.
DS14	9	D	1.50		Brown mottled grey gravelly sandy CLAY.
DS15	4	D	0.60		Brown mottled grey gravelly sandy CLAY.
DS15	19	D	2.60		Brown gravelly sandy CLAY.
DS15	21	D	2.95		Brown mottled grey gravelly sandy CLAY.
DS15	24	D	3.60		Brown mottled grey gravelly sandy CLAY.
DS15	26	D	4.40		Brown mottled grey slightly gravelly sandy CLAY.
DS16	6	D	0.60		Brown mottled grey gravelly sandy CLAY.
DS16	18	D	1.80		Brown mottled grey slightly gravelly sandy CLAY.
DS16	24	D	3.80		Brown mottled grey gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS06	6	D	0.60					40	20	20	86	Intermediate Plasticity CI
DS06	16	D	1.80					44	22	22	88	Intermediate Plasticity CI
DS06	21	D	3.60					47	23	24	81	Intermediate Plasticity CI
DS14	9	D	1.50					43	21	22	86	Intermediate Plasticity CI
DS15	4	D	0.60					46	22	24	84	Intermediate Plasticity CI
DS15	21	D	2.95					42	21	21	89	Intermediate Plasticity CI
DS15	26	D	4.40					49	24	25	94	Intermediate Plasticity CI
DS16	18	D	1.80					45	22	23	84	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

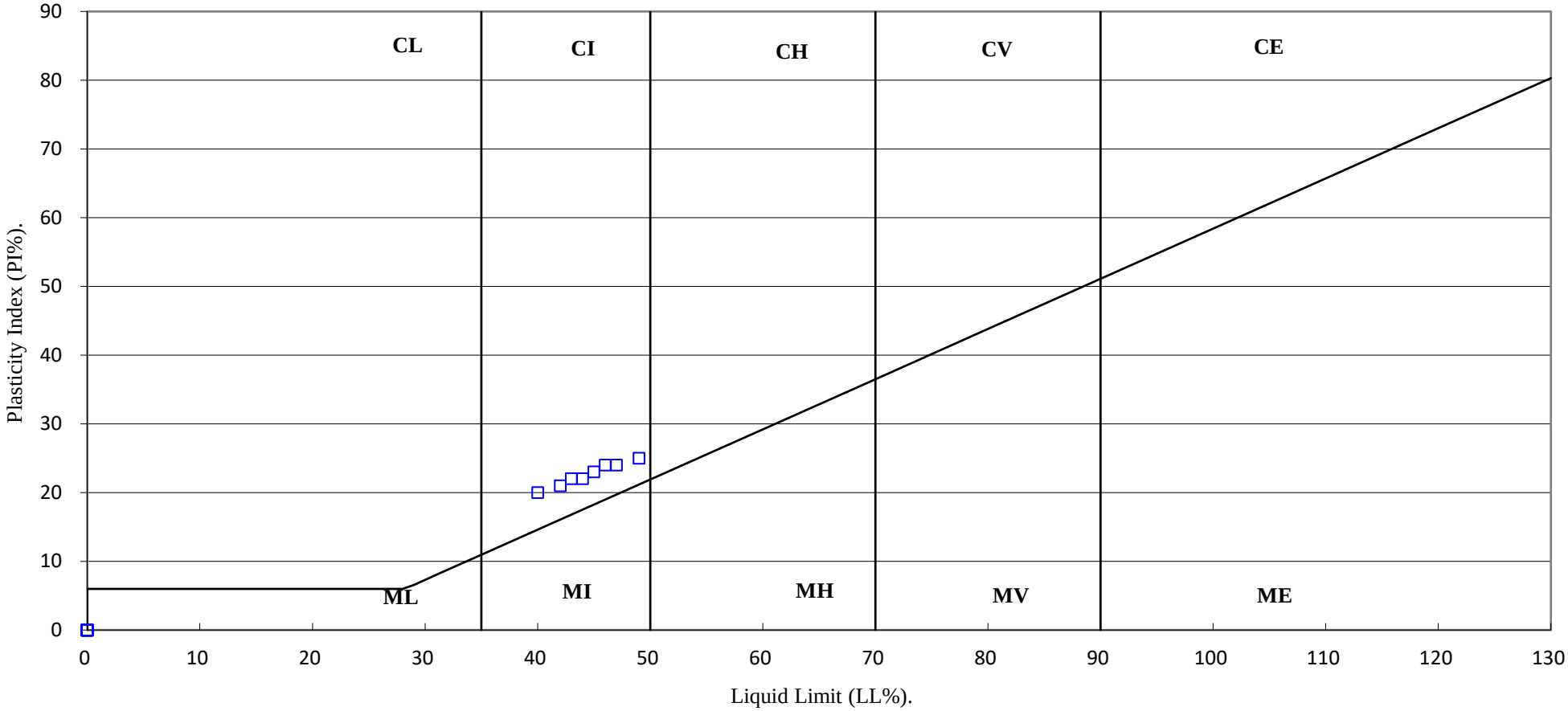
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL22/6393
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	Contract No: PSL22/6393 Client Ref: D2027-22

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
DS06	6	D	0.60		9.1					
DS06	16	D	1.80		16					
DS06	21	D	3.60		20					
DS14	9	D	1.50		18					
DS15	4	D	0.60		23					
DS15	19	D	2.60		17					
DS15	21	D	2.95		23					
DS15	24	D	3.60		17					
DS15	26	D	4.40		14					
DS16	6	D	0.60		18					
DS16	18	D	1.80		17					
DS16	24	D	3.80		17					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:

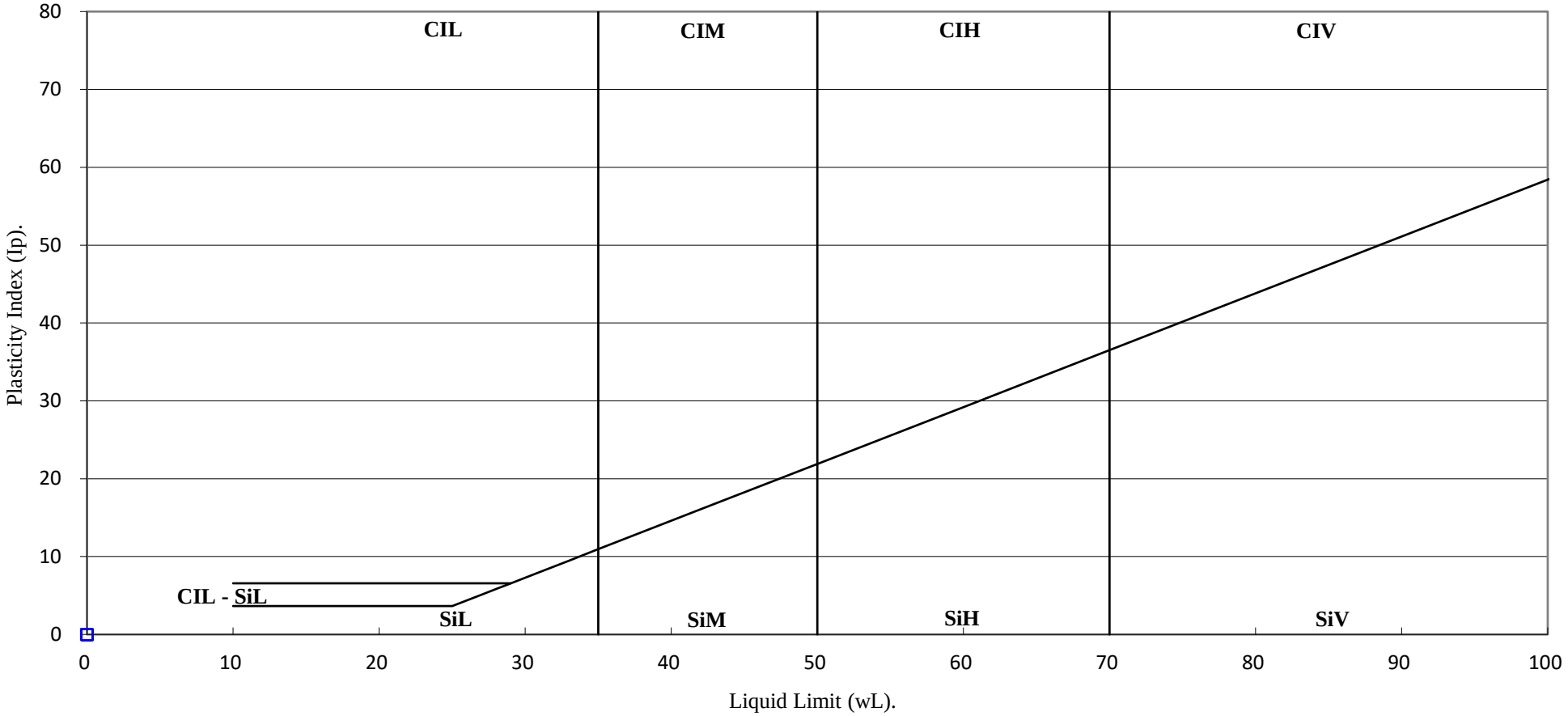
PSL22/6393

Client Ref:

D2027-22

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:**
			PSL22/6393
			Client Ref:
			D2027-22

2531

ANALYTICAL TEST REPORT

Contract no:	114358
Contract name:	Stansted Terminal 2 (ST2) - Ground Investigation
Client reference:	PSL22/6393
Clients name:	Professional Soils Laboratory
Clients address:	5/7 Hexthorpe Road Doncaster DN4 0AR
Samples received:	06 October 2022
Analysis started:	06 October 2022
Analysis completed:	14 October 2022
Report issued:	14 October 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: [redacted]

Abbie Neasham-Bourn

Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			114358-1	114358-2
Sample id			DS15	DS16
Depth (m)			1.20	4.80
Sample Type			D	D
Date sampled			23/06/2022	24/06/2022
Test	Method	Units		
pH	CE004 U	units	8.6	7.0
Magnesium (2:1 water soluble)	CE061	mg/l Mg	2.0	70
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	5.3	34
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	1.2	<1
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	65	1866
Sulphate (total)	CE062 U	mg/kg SO_4	1140	35147
Sulphur (total)	CE062	mg/kg S	380	11716
Sulphur (total)	CE062	% w/w S	0.04	1.17

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (total)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO_4
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		33	mg/kg S
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		0.003	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
114358-1	DS15	1.20	Y	All (EHT)
114358-2	DS16	4.80	Y	All (EHT)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.

LABORATORY REPORT

4043

Contract Number: PSL22/6394

Report Date: 12 October 2022

Client's Reference: D2027-22

Client Name: Socotec
The Oasts, Newnham Court
Bearstead Road
Maidstone
Kent
ME14 5LH

For the attention of: Samantha Rawlins

Contract Title: Stansted Terminal 2 (ST2) - Ground Investigation

Date Received: 4/10/2022
Date Commenced: 4/10/2022
Date Completed: 12/10/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Senior Technician)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail:

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS03	17	D	1.80		Brown gravelly sandy CLAY.
DS03	21	D	2.80		Brown mottled grey gravelly sandy CLAY.
DS03	14	D	4.50	4.95	Brown gravelly sandy CLAY.
DS05	20	D	2.80		Brown mottled grey gravelly sandy CLAY.
DS05	24	D	3.80		Brown mottled grey gravelly sandy CLAY.
DS07	9	D	1.20		Brown slightly gravelly sandy CLAY.
DS07	18	D	1.80		Brown gravelly sandy CLAY.
DS07	25	D	3.80		Brown mottled grey gravelly sandy CLAY.
DS13	17	D	1.80		Brown gravelly sandy CLAY.
DS13	23	D	3.80		Brown gravelly sandy CLAY.
DS13	26	D	4.60		Brown gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS03	17	D	1.80		18			38	19	19	83	Intermediate Plasticity CI
DS03	21	D	2.80		16			39	19	20	80	Intermediate Plasticity CI
DS03	14	D	4.50	4.95	17			35	17	18	82	Intermediate Plasticity CI
DS05	20	D	2.80		14			40	19	21	84	Intermediate Plasticity CI
DS05	24	D	3.80		17			38	18	20	85	Intermediate Plasticity CI
DS07	9	D	1.20		20			40	20	20	93	Intermediate Plasticity CI
DS07	18	D	1.80		25			47	22	25	83	Intermediate Plasticity CI
DS07	25	D	3.80		16			43	21	22	81	Intermediate Plasticity CI
DS13	17	D	1.80		22			42	21	21	82	Intermediate Plasticity CI
DS13	23	D	3.80		18							
DS13	26	D	4.60		20			41	20	21	80	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

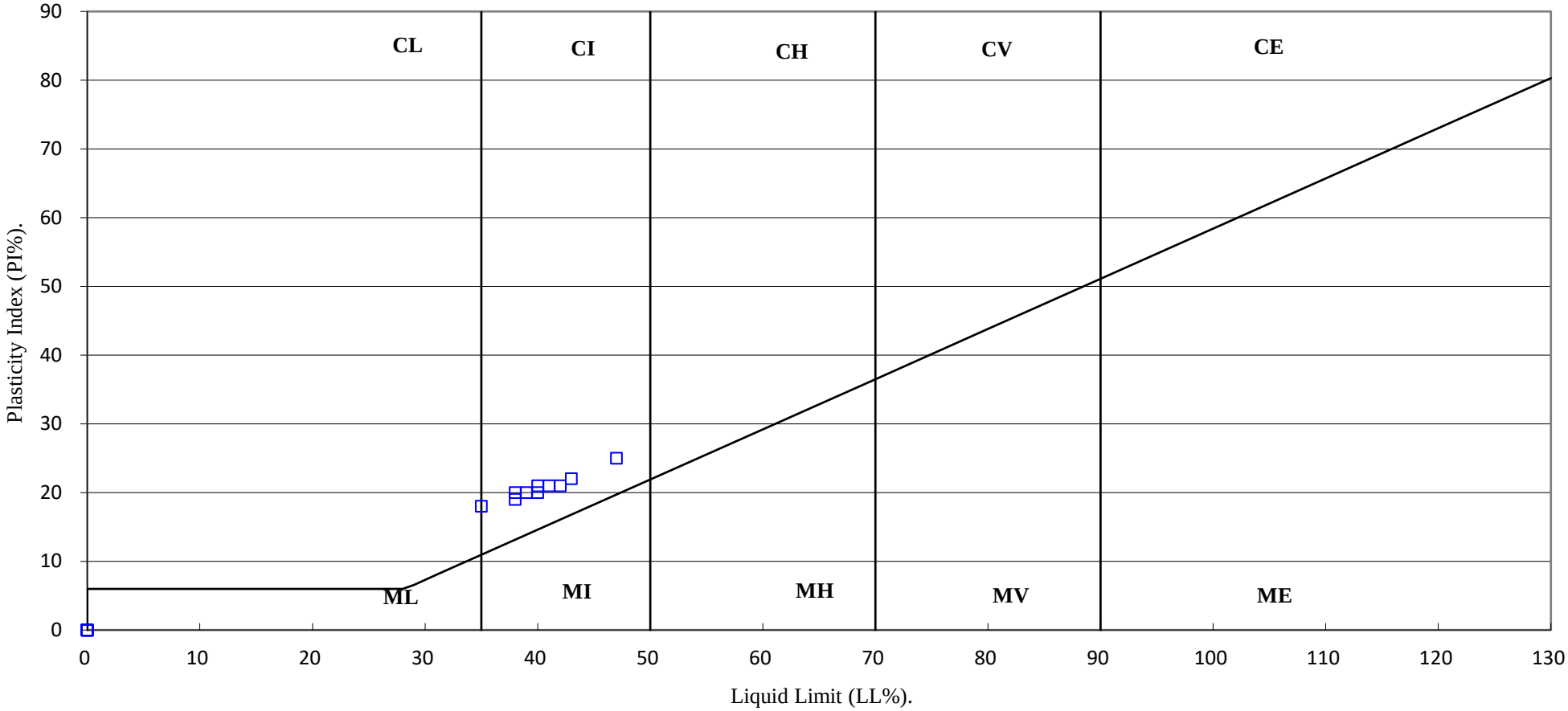
PSL Professional Soils Laboratory

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL22/6394

Client Ref: D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal 2 (ST2) - Ground Investigation	Contract No: PSL22/6394 Client Ref: D2027-22

2531

ANALYTICAL TEST REPORT

Contract no:	114371
Contract name:	Stansted Terminal 2 (ST2) - Ground Investigation
Client reference:	PSL22/6394
Clients name:	Professional Soils Laboratory
Clients address:	5/7 Hexthorpe Road Doncaster DN4 0AR
Samples received:	06 October 2022
Analysis started:	06 October 2022
Analysis completed:	13 October 2022
Report issued:	13 October 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: [redacted]

Abbie Neasham-Bourn

Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			114371-1	114371-2	114371-3	114371-4
Sample id			DS03	DS05	DS07	DS13
Depth (m)			1.20	1.40	1.20	2.80
Sample Type			D	D	D	D
Date sampled			-	-	-	-
Test	Method	Units				
pH	CE004 U	units	8.6	9.2	8.2	8.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	11	0.2	0.2	0.2
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	7.7	5.7	5.8	4.1
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	2.1	<1	<1	1.7
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	413	290	777	448
Sulphate (total)	CE062 U	mg/kg SO_4	418	1305	2809	2809
Sulphur (total)	CE062	mg/kg S	139	435	936	936
Sulphur (total)	CE062	% w/w S	0.01	0.04	0.09	0.09

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (total)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO_4
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		33	mg/kg S
CE062	Sulphur (total)	HCl extract, analysed by ICP-OES	Dry		0.003	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
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Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
114371-1	DS03	1.20	Y	All (NSD)
114371-2	DS05	1.40	Y	All (NSD)
114371-3	DS07	1.20	Y	All (NSD)
114371-4	DS13	2.80	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

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Methods, procedures and performance data are available on request.

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Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.

LABORATORY REPORT

4043

Contract Number: PSL22/6633

Report Date:	31 October 2022
Client's Reference:	D2027-22
Client Name:	Socotec The Oasts, Newnham Court Bearstead Road Maidstone Kent ME14 5LH
For the attention of:	**Samatha Rawlins**
Contract Title:	Stansted Terminal 2 (ST2) - Ground Investigation
Date Received:	14/10/2022
Date Commenced:	14/10/2022
Date Completed:	25/10/2022
Notes:	**Opinions and Interpretations are outside the UKAS Accreditation**

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	T Watkins (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rgunson@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC01	5	B	0.50	0.80	Brown gravelly sandy CLAY.
RC01	6	D	1.00		Brown gravelly sandy CLAY.
RC01	107	D	7.10		Grey gravelly very sandy CLAY.
RC01	108	C	7.50		Grey gravelly very sandy CLAY.
RC01	111	C	8.50		Brown very gravelly sandy CLAY.
RC01	112	D	8.80		Grey gravelly very sandy CLAY.
RC01	114	C	9.50	9.80	Grey gravelly very sandy CLAY.
RC01	117	C	10.50	10.80	Very stiff brown mottled grey gravelly very sandy CLAY.
RC01	120	D	11.30		Grey gravelly very sandy CLAY.
RC01	125	D	14.30		Grey very sandy very clayey GRAVEL.
RC01	126	D	16.60		White CHALK.
RC01	128	C	17.55	17.85	Grey gravelly sandy CLAY.
RC01	129	D	17.90		Grey very gravelly very sandy CLAY.
RC01	131	C	19.10	19.40	Very stiff brown mottled grey gravelly sandy CLAY.
RC01	133	D	20.00		Grey gravelly very sandy CLAY.
RC01	136	D	21.10		Grey gravelly very sandy CLAY.
RC01	140	D	22.60		Grey gravelly very sandy CLAY.
RC01	141	C	23.01	23.28	Stiff brown mottled grey gravelly very sandy CLAY.
RC01	144	C	24.00	24.31	Brown slightly gravelly sandy CLAY.

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
RC01	145	D	24.40		Brown slightly gravelly sandy CLAY.
RC01	146	C	25.10	25.40	Stiff brown sandy CLAY.
RC01	149	D	26.50		Brown slightly sandy CLAY.
RC01A	101	D	1.60		Brown slightly gravelly sandy CLAY.
RC01A	102	D	2.10		Brown mottled grey gravelly sandy CLAY.
RC01A	108	D	4.40		Brown gravelly sandy CLAY.
RC01A	112	D	6.00		Brown gravelly sandy CLAY.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
RC01	6	D	1.00		16			40	22	18	85	Intermediate Plasticity CI
RC01	107	D	7.10		15			31	15	16	81	Low Plasticity CL
RC01	108	C	7.50	7.80	16		2.64					
RC01	112	D	8.80		15							
RC01	120	D	11.30		17			33	16	17	83	Low Plasticity CL
RC01	125	D	14.30		12			30	16	14	42	Low Plasticity CL
RC01	129	D	17.90		16			34	17	17	69	Low Plasticity CL
RC01	133	D	20.00		18			32	16	16	80	Low Plasticity CL
RC01	136	D	21.10		16			35	17	18	82	Intermediate Plasticity CI
RC01	140	D	22.60		14			34	16	18	77	Low Plasticity CL
RC01	145	D	24.40		21			48	23	25	98	Intermediate Plasticity CI
RC01	149	D	26.50		26			59	25	34	100	High Plasticity CH
RC01A	101	D	1.60		25							
RC01A	102	D	2.10		17			37	18	19	82	Intermediate Plasticity CI
RC01A	108	D	4.40		16			40	19	21	85	Intermediate Plasticity CI
RC01A	112	D	6.00		17							

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

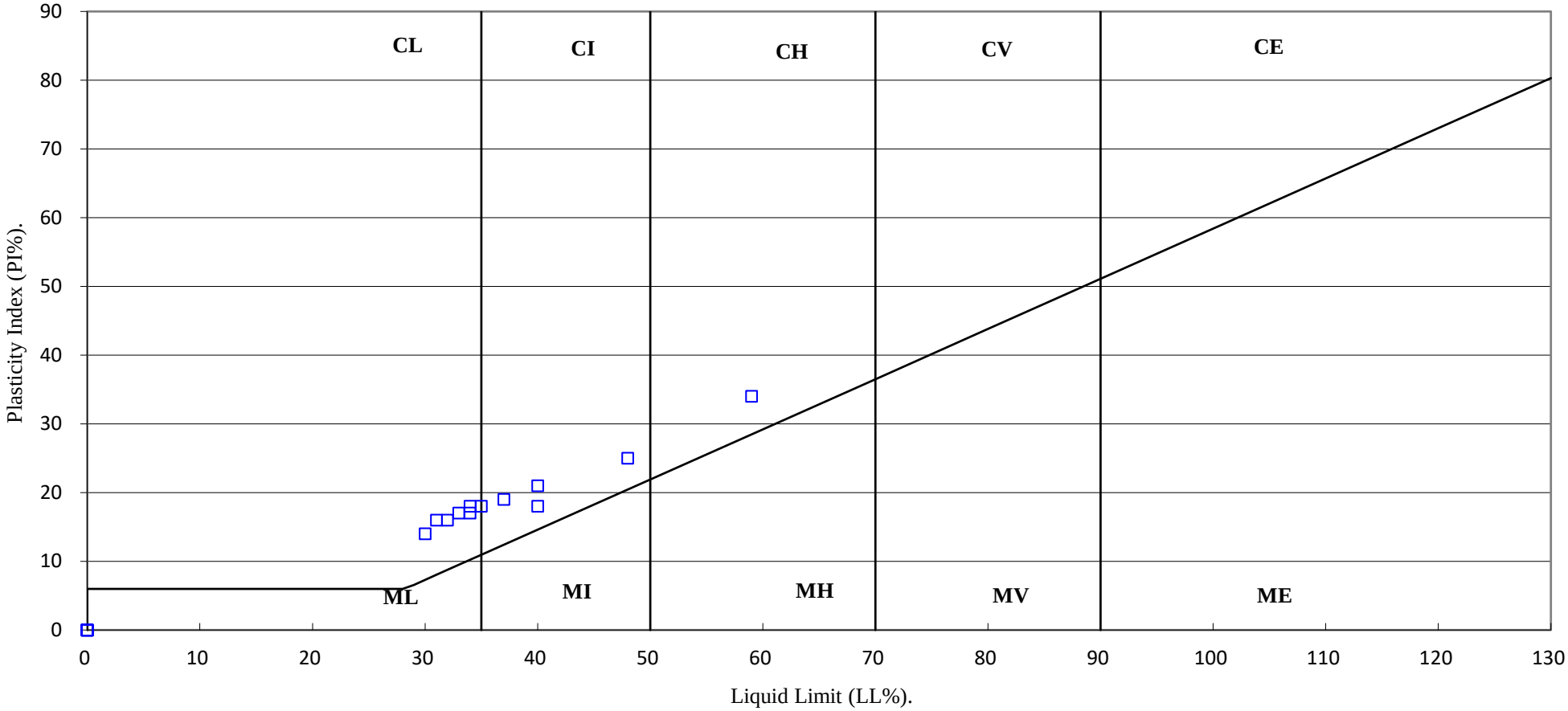
UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation

Contract No:
PSL22/6633
Client Ref:
D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



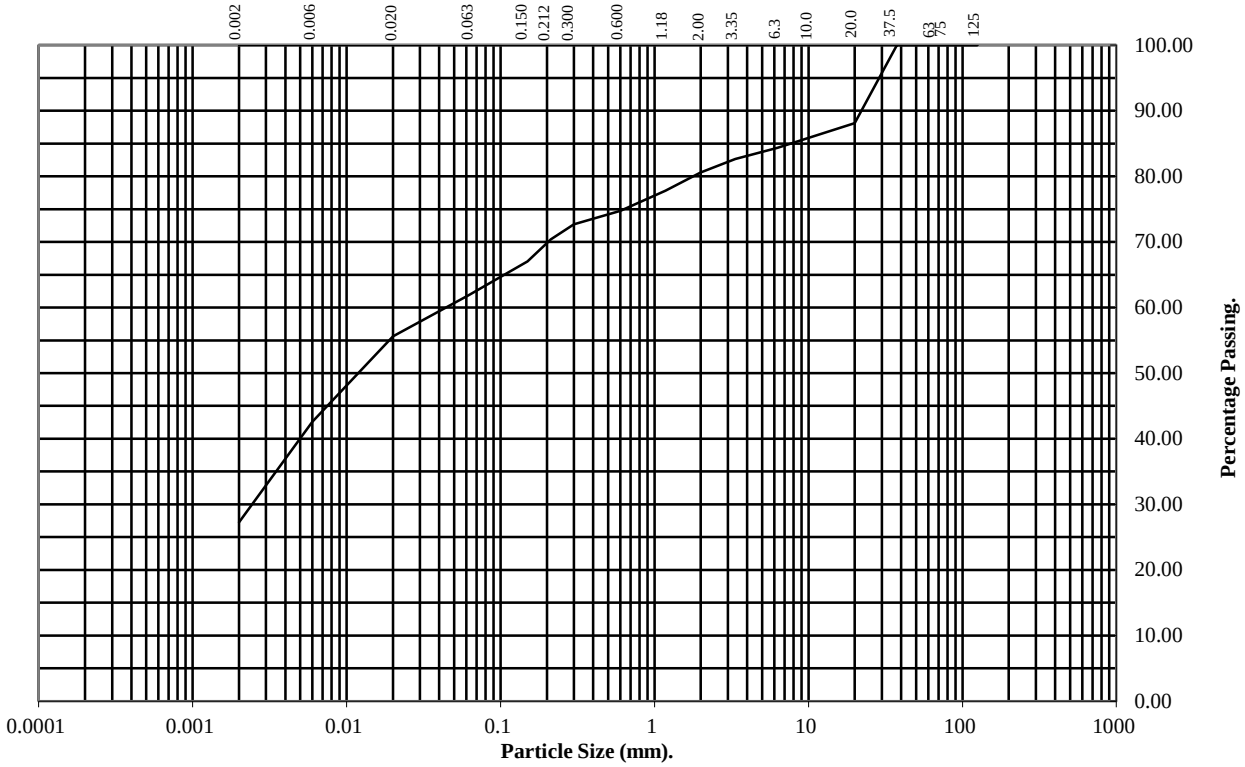
UKAS TESTING 4043	PSL Professional Soils Laboratory	Stansted Terminal (ST2) - Ground Investigation	**Contract No:** PSL22/6633 **Client Ref:** D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**RC01**	**Top Depth (m):**	**0.50**
Sample Number:	**5**	**Base Depth(m):**	**0.80**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	88
10	86
6.3	84
3.35	83
2	81
1.18	78
0.6	75
0.3	73
0.212	70
0.15	67
0.063	62

Particle Diameter	Percentage Passing
0.02	56
0.006	43
0.002	27

Soil Fraction	Total Percentage
Cobbles	0
Gravel	19
Sand	19
Silt	35
Clay	27

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

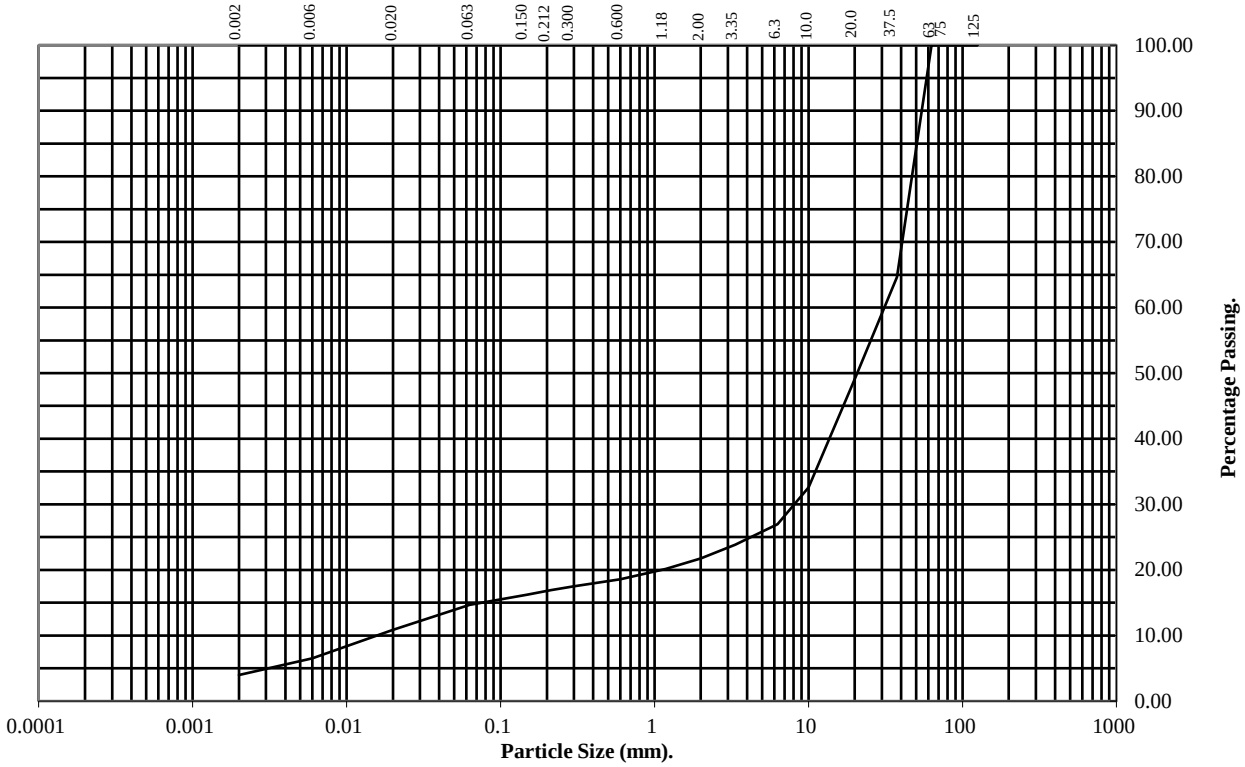
BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number: **RC01** **Top Depth (m):** **16.60**

Sample Number: **126** **Base Depth(m):**

Sample Type: **D**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	65
20	49
10	33
6.3	27
3.35	24
2	22
1.18	20
0.6	19
0.3	17
0.212	17
0.15	16
0.063	15

Particle Diameter	Percentage Passing
0.02	11
0.006	7
0.002	4

Soil Fraction	Total Percentage
Cobbles	0
Gravel	78
Sand	7
Silt	11
Clay	4

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL Professional Soils Laboratory

Stansted Terminal (ST2) - Ground Investigation

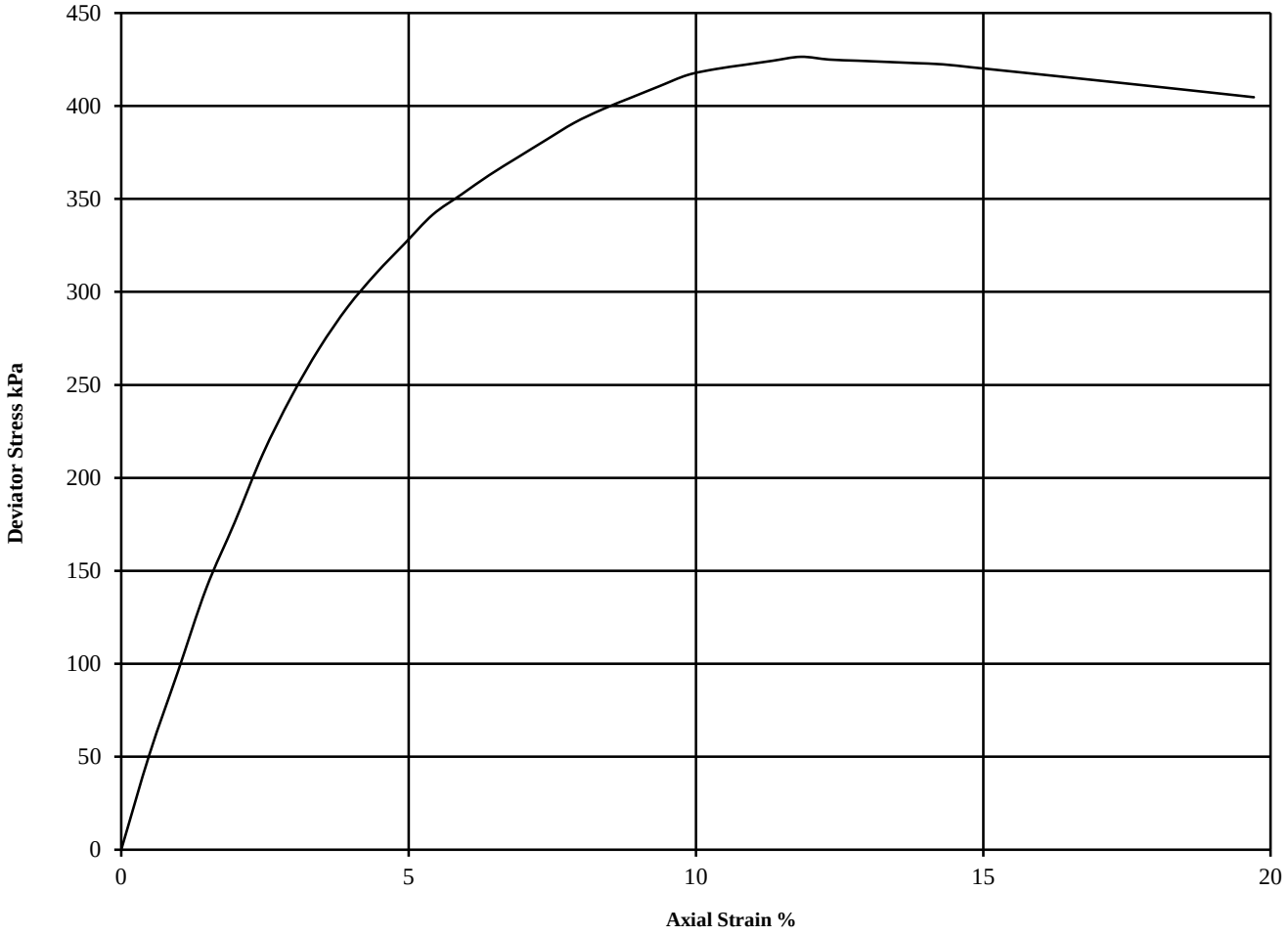
Contract No:
PSL22/6633
Client Ref:
D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC01**	**Top Depth (m):**	**10.50**
Sample Number:	**117**	**Base Depth (m):**	**10.80**
Sample Type	**C**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	15	2.11	1.84	185	426	213	11.8	Plastic	See summary of soil descriptions

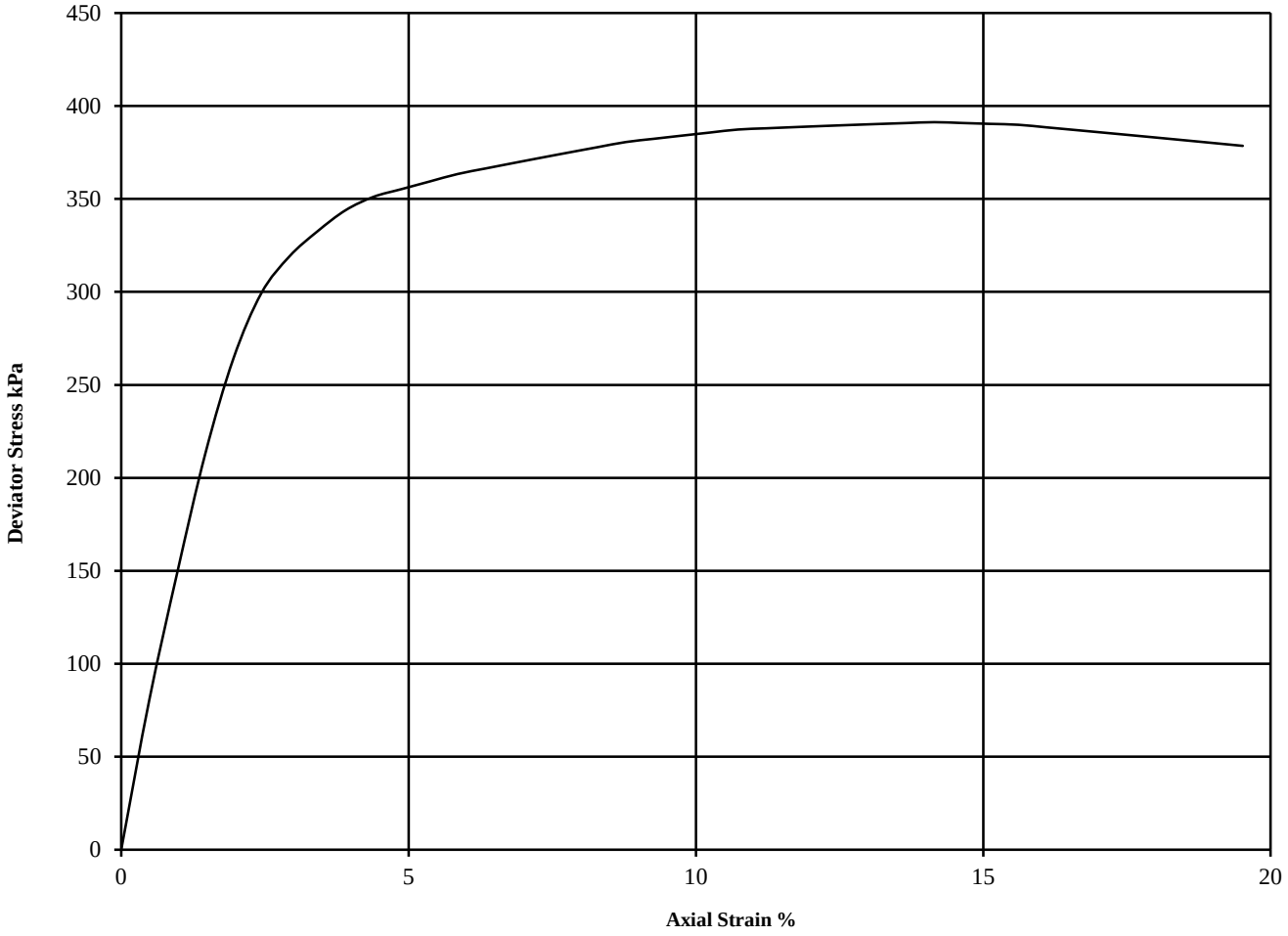
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC01**	**Top Depth (m):**	**19.10**
Sample Number:	**131**	**Base Depth (m):**	**19.40**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	15	2.11	1.84	270	391	196	14.1	Plastic	See summary of soil descriptions

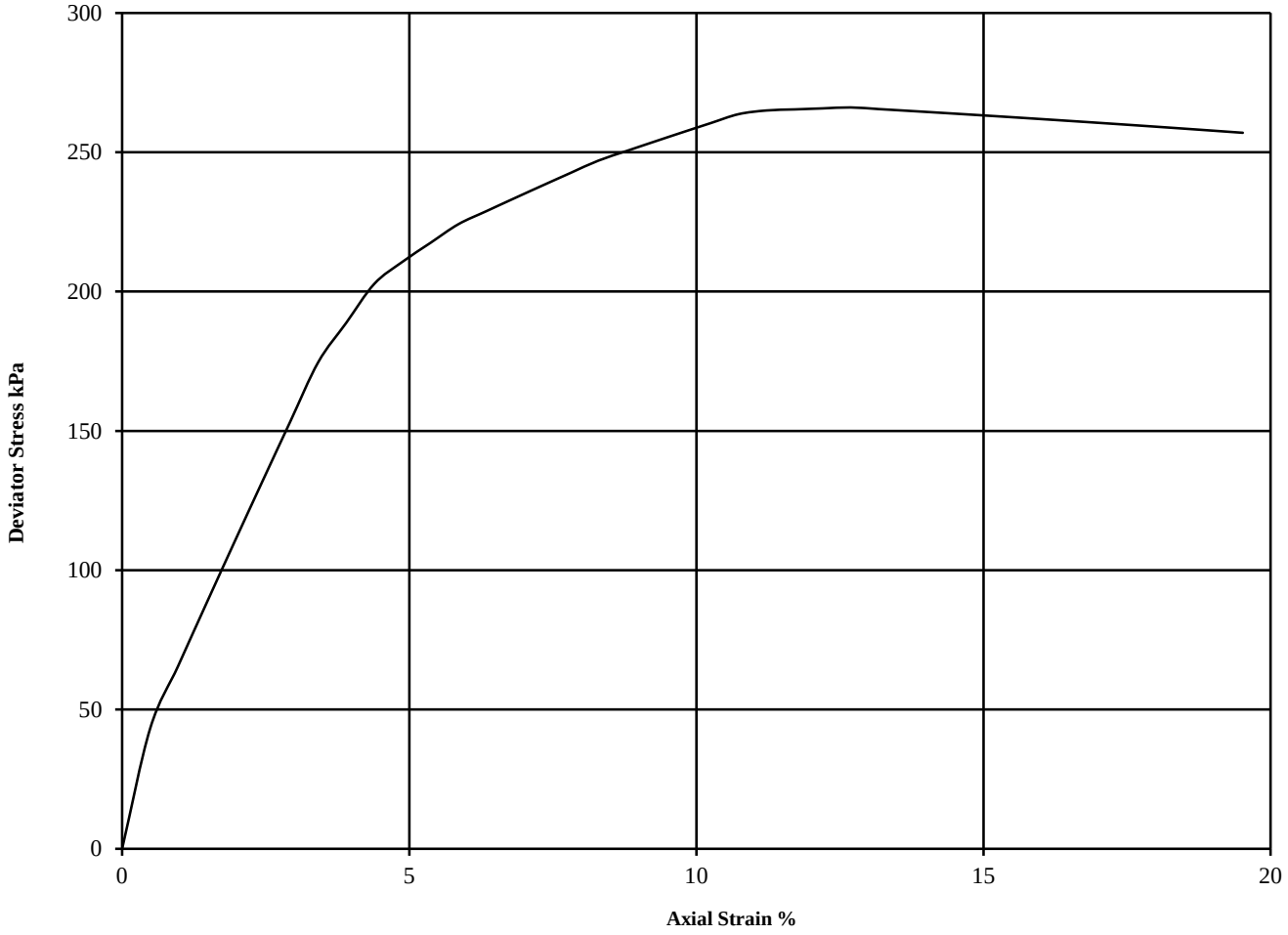
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC01**	**Top Depth (m):**	**23.01**
Sample Number:	**141**	**Base Depth (m):**	**23.28**
Sample Type	**C**		



Diameter (mm):		101	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.35
1	14	2.15	1.89	310	266	133	12.7	Plastic	See summary of soil descriptions

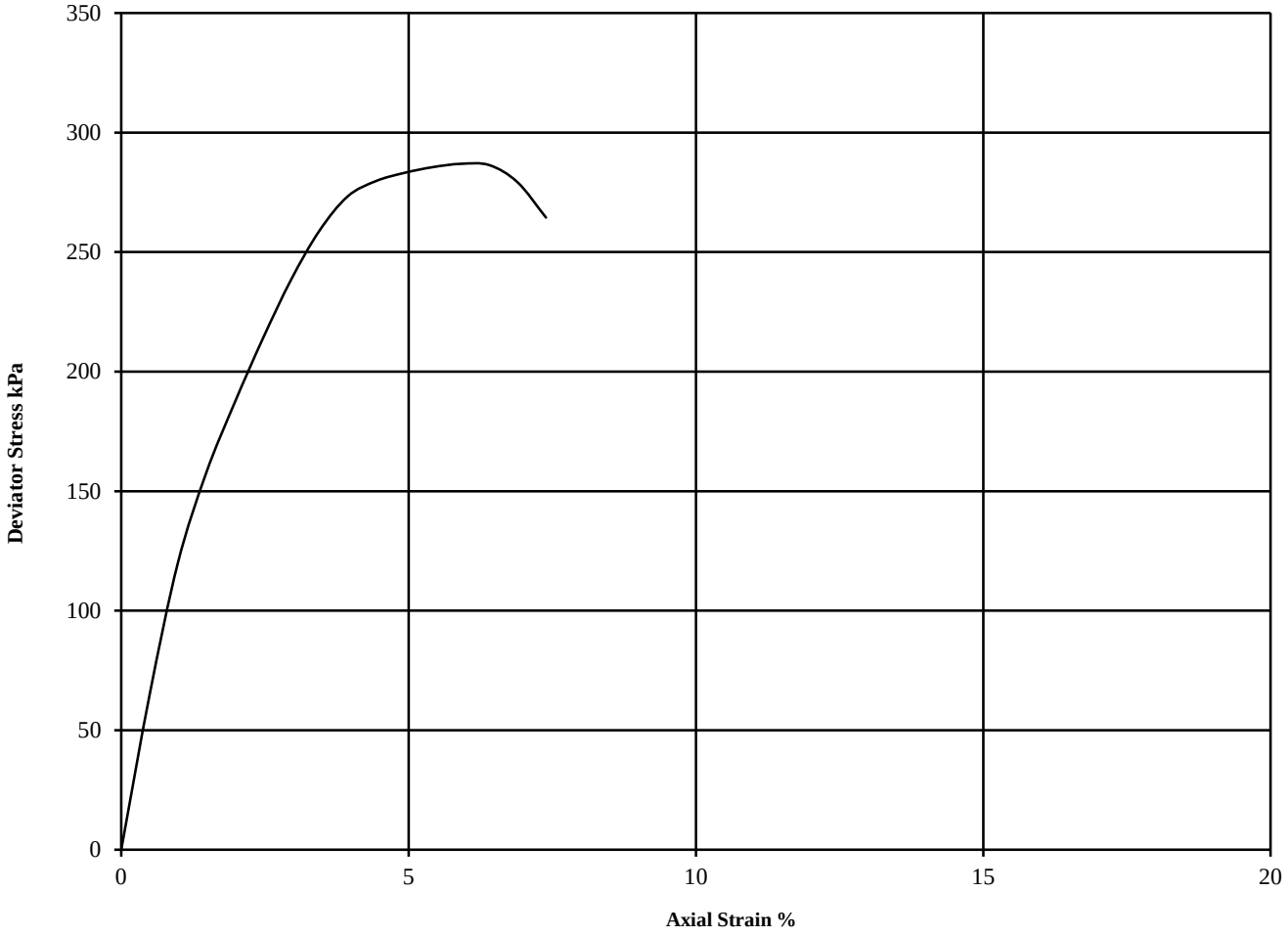
UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** D2027-22

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number:	**RC01**	**Top Depth (m):**	**25.10**
Sample Number:	**146**	**Base Depth (m):**	**25.40**
Sample Type	**C**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.36
1	19	1.99	1.67	340	287	143	5.9	Brittle	See summary of soil descriptions

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC01** **Top Depth (m):** **7.50**

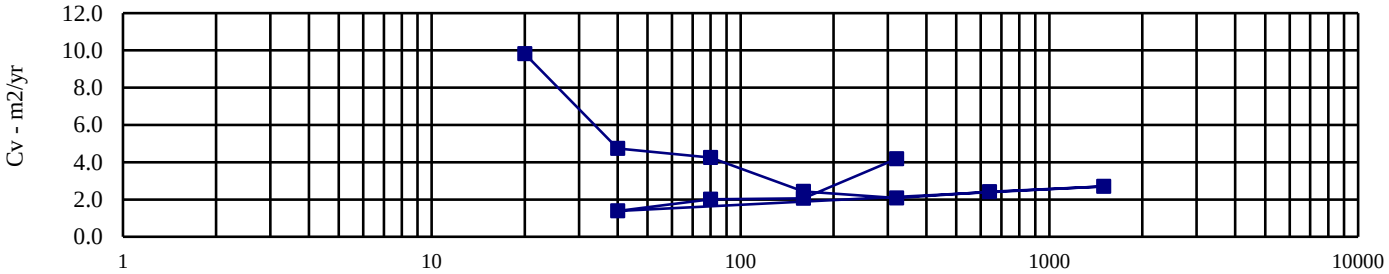
Sample Number: **108** **Base Depth (m) :** **7.80**

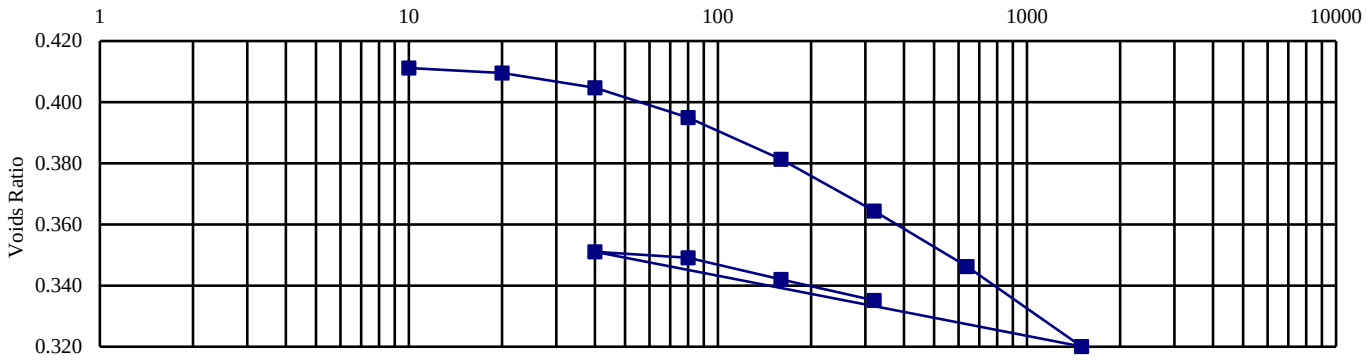
Sample Type: **C**

Initial Conditions	
Moisture Content (%):	16
Bulk Density (Mg/m3):	2.18
Dry Density (Mg/m3):	1.87
Voids Ratio:	0.412
Degree of saturation:	104.8
Height (mm):	20.028
Diameter (mm)	75.008
Particle Density (Mg/m3): Measured	2.64

Pressure Range kPa		Mv m2/MN	Cv m2/yr
0	10	Swelling	Swelling
10	20	0.115	9.821
20	40	0.170	4.739
40	80	0.173	4.244
80	160	0.123	2.439
160	320	0.077	2.073
320	640	0.042	2.418
640	1500	0.023	2.702
1500	40	0.016	1.384
40	80	0.037	2.008
80	160	0.066	2.065
160	320	0.032	4.183

Specimen location within tube:	Middle
Method used to determine CV:	T90
Nominal temperature during test ' C:	20
Remarks: See summary of soil descriptions	





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** SD2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC01** **Top Depth (m):** **9.50**

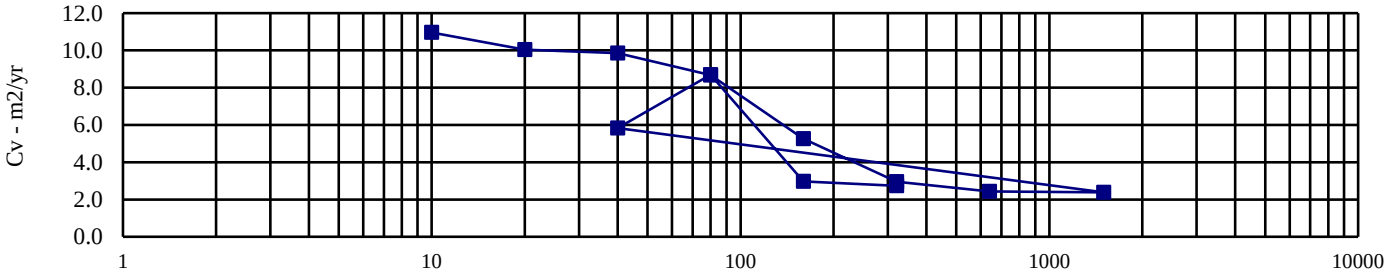
Sample Number: **114** **Base Depth (m) :** **9.80**

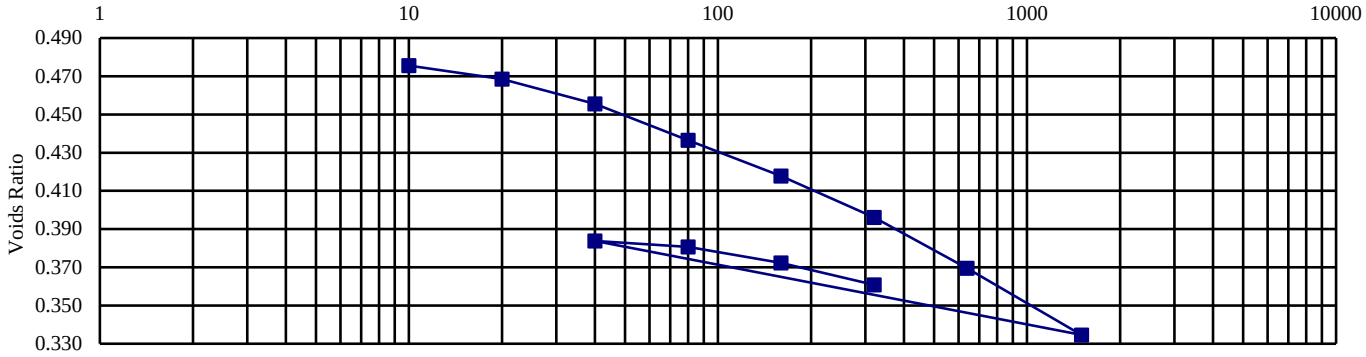
Sample Type: **C**

Initial Conditions	
Moisture Content (%):	19
Bulk Density (Mg/m3):	2.13
Dry Density (Mg/m3):	1.79
Voids Ratio:	0.478
Degree of saturation:	103.1
Height (mm):	20.004
Diameter (mm)	75.028
Particle Density (Mg/m3): Assumed	2.65

Pressure Range kPa		Mv m2/MN	Cv m2/yr
0	10	0.145	10.960
10	20	0.481	10.036
20	40	0.440	9.859
40	80	0.329	8.685
80	160	0.163	5.253
160	320	0.095	2.960
320	640	0.060	2.434
640	1500	0.030	2.385
1500	40	0.025	5.831
40	80	0.056	8.688
80	160	0.076	2.965
160	320	0.052	2.735

Specimen location within tube:	Base
Method used to determine CV:	T90
Nominal temperature during test ' C:	20
Remarks: See summary of soil descriptions	





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** SD2027-22

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: **RC01** **Top Depth (m):** **17.55**

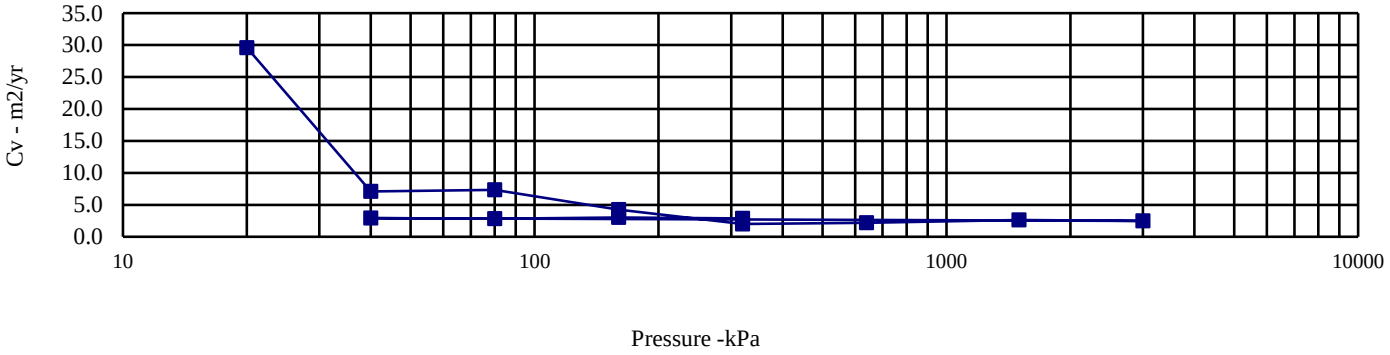
Sample Number: **128** **Base Depth (m) :** **17.85**

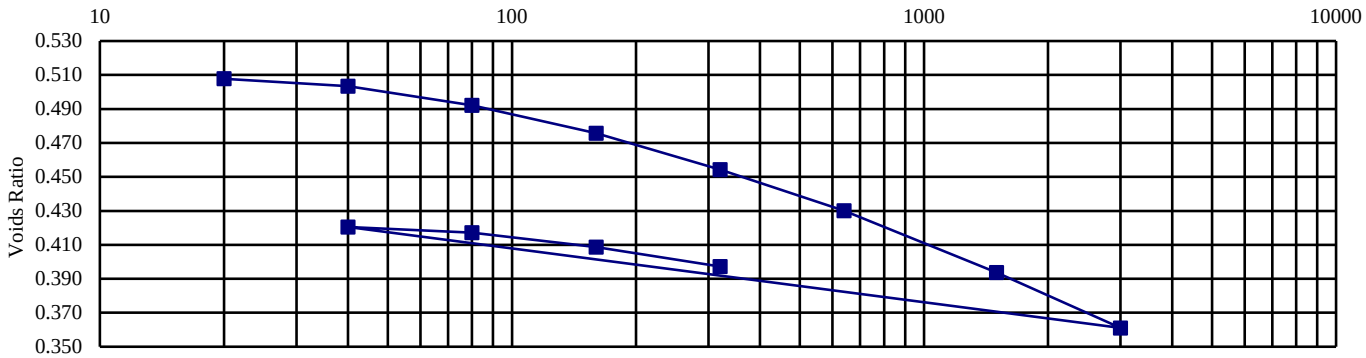
Sample Type: **C**

Initial Conditions	
Moisture Content (%):	20
Bulk Density (Mg/m3):	2.09
Dry Density (Mg/m3):	1.75
Voids Ratio:	0.513
Degree of saturation:	101.1
Height (mm):	20.026
Diameter (mm)	75.008
Particle Density (Mg/m3): Assumed	2.65

Pressure Range kPa		Mv m2/MN	Cv m2/yr
0	20	0.160	29.602
20	40	0.143	7.115
40	80	0.187	7.318
80	160	0.139	4.224
160	320	0.090	2.003
320	640	0.052	2.167
640	1500	0.030	2.634
1500	3000	0.016	2.475
3000	40	0.015	2.909
40	80	0.058	2.842
80	160	0.075	3.003
160	320	0.051	2.855

Specimen location within tube:	Base
Method used to determine CV:	T90
Nominal temperature during test ' C:	20
Remarks: See summary of soil descriptions	





UKAS TESTING 4043	PSL Professional Soils Laboratory	**Stansted Terminal (ST2) - Ground Investigation**	**Contract No:** PSL22/6633 **Client Ref:** SD2027-22

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth			8.50-8.80m C111
	Description			See summary of soil descriptions.
	Type			Undisturbed, vertical orientation.
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.0
	Initial Sample Weight	W_0	(gr)	3689.0
	Initial Bulk Density	ρ_0	(Mg/m3)	2.06
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	733	815	980	
Initial Back Pressure	U_{bi}	(kPa)	650	650	650	
Membrane Thickness	m_b	(mm)	0.400			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	15			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.79			
Initial Voids Ratio	e_i	.	0.487			
Initial Degree of Saturation	S_i	(%)	82			
B Value	B	.	0.95			

Final Conditions						
Final Moisture	ω_f	(%)	13			
Final Dry Density	ρ_{df}	(Mg/m3)	1.85			
Final Voids Ratio	e_f	.	0.438			
Final Degree of Saturation	S_f	(%)	81.4			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev.	Max. Dev.	Max. Dev.	
Strain At Failure	ε_f	(%)	2.36	3.06	3.98	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	193.1	283.6	498.9	
Minor Stress At Failure	σ_3'	(kPa)	55.8	104.7	217.0	
Major Stress At Failure	σ_1'	(kPa)	248.9	388.3	715.9	
Principal Stress Ratio At Failure	σ_1'/σ_3'		4.460	3.708	3.299	
PwP At Failure Criteria	u_f		677.2	710.2	763.0	

Notes

Plastic

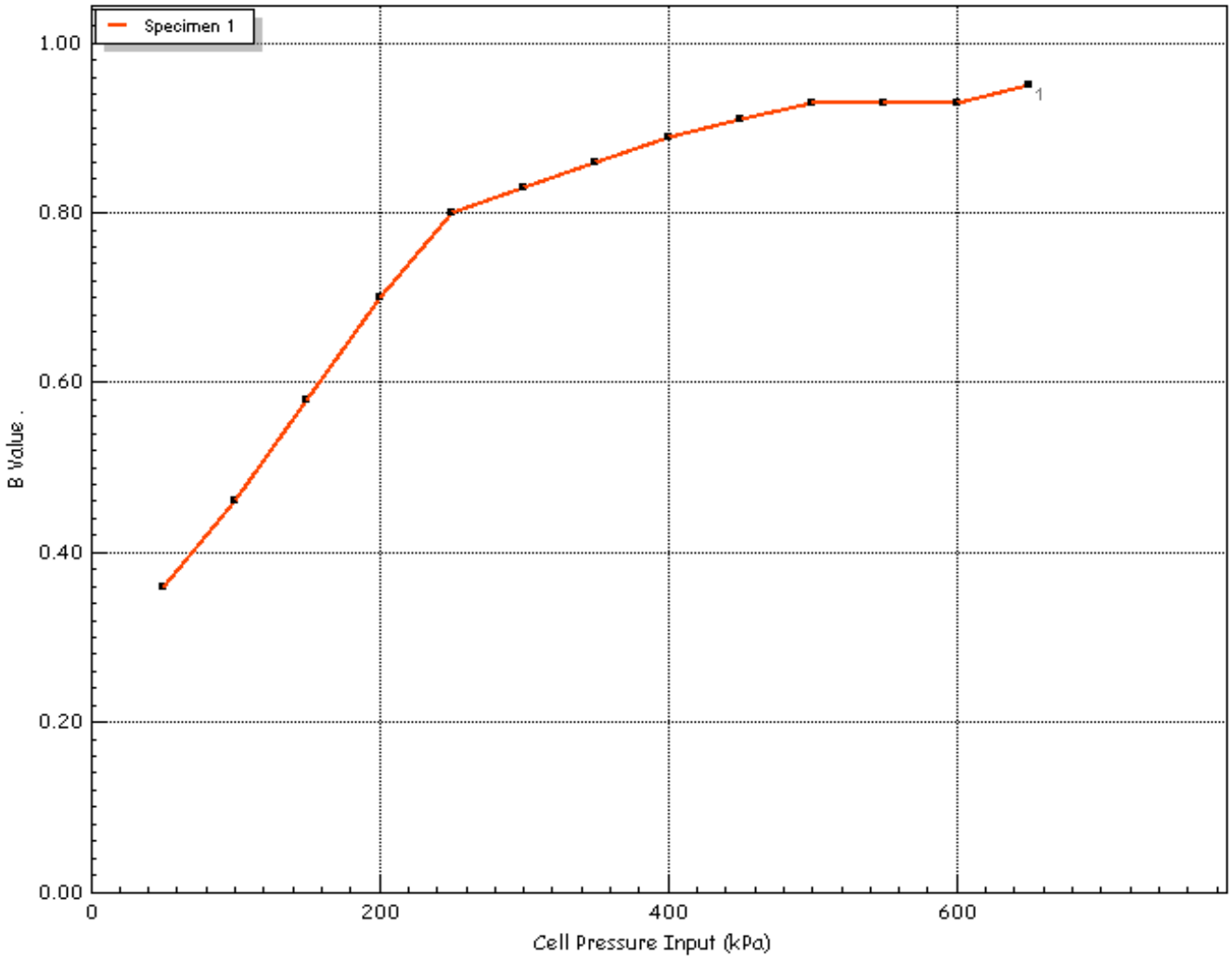
Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 8.50-8.80m U_Copy
		Test Date	21/10/2022
		Borehole	RC01
Jobfile	Stansted Terminal 2	Sample	8.50-8.80m U
Client	Socotec	Depth	8.50-8.80m C111

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	650
Pore Water Pressure Input	u pwp	(kPa)	635
B Value	B	.	0.95



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 8.50-8.80m U_Copy
		Test Date	21/10/2022
		Borehole	RC01
Jobfile	Stansted Terminal 2	Sample	8.50-8.80m U
Client	Socotec	Depth	8.50-8.80m C111

Effective Stress Triaxial Compression

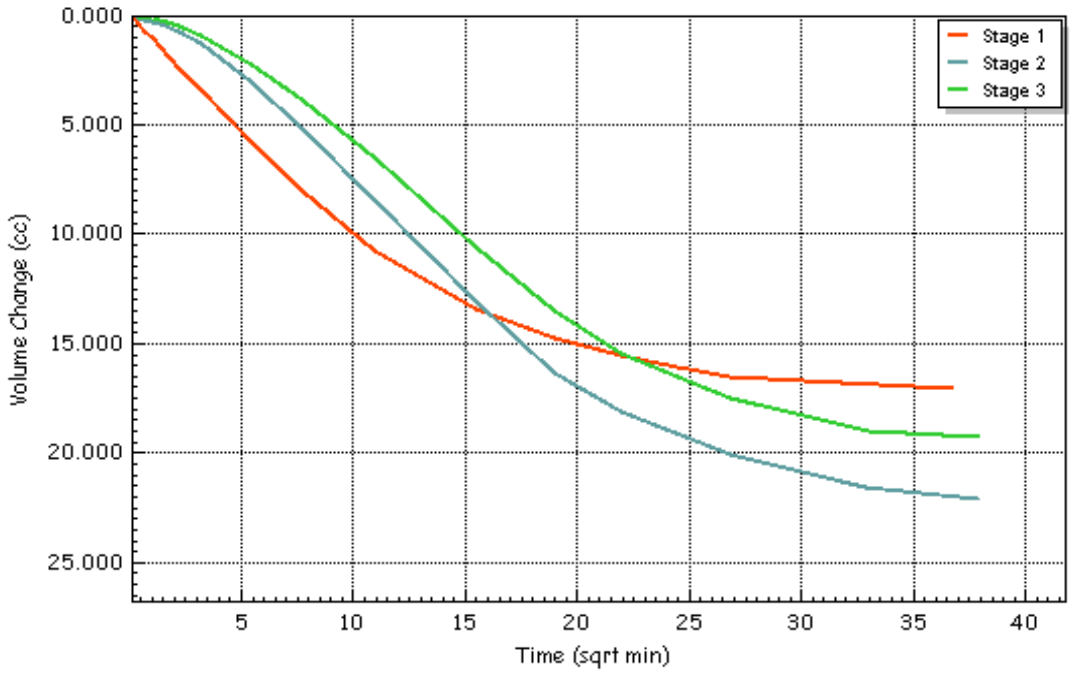
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	733	815	980
Initial Back Pressure	u_{bi}	(kPa)	650	650	650
Pore Water Pressure Input	u_{pwp}	(kPa)	711	751	856
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	0.95	1.23	1.08
Corrected Length	L_C	(mm)	210.3	204.5	200.5
Corrected Area	A_C	(cm2)	84.41	85.73	86.47
Corrected Volume	V_C	(cc)	1775.334	1753.235	1733.943
t100	t_{100}	(min)	217.89	518.29	614.78
Consolidation	c_v	(m2/year)	0.010	0.004	0.004
Compressibility	m_v	(m2/MN)	0.156	0.122	0.052
Test Time	t_F	(h:m:s)	06:32:12	15:32:55	18:26:36
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.02681	0.02681	0.02681

Notes



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 8.50-8.80m U_Copy
		Test Date	21/10/2022
		Borehole	RC01
Jobfile	Stansted Terminal 2	Sample	8.50-8.80m U
Client	Socotec	Depth	8.50-8.80m C111

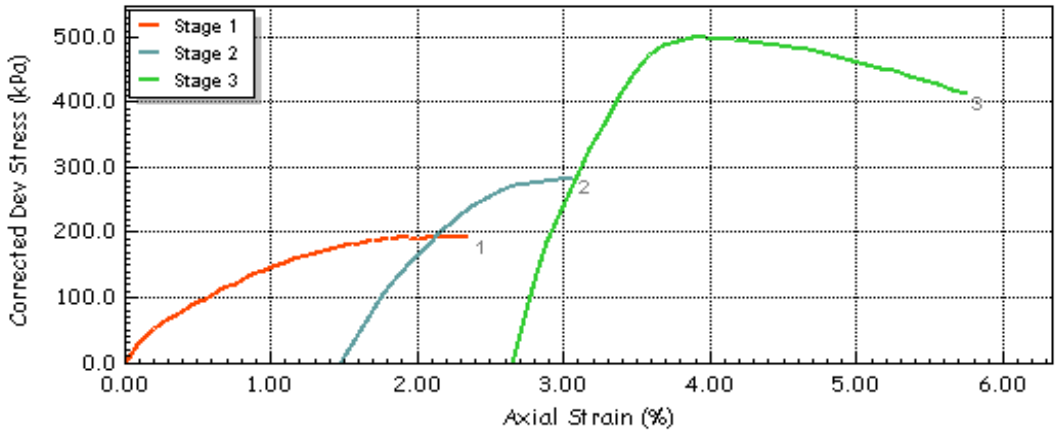
UKAS TESTING

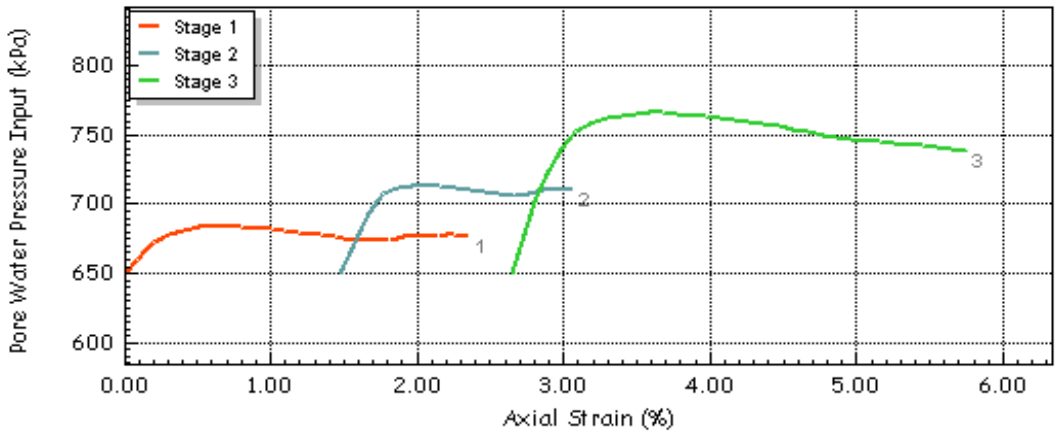
PSL PROFESSIONAL SOILS LABORATORY

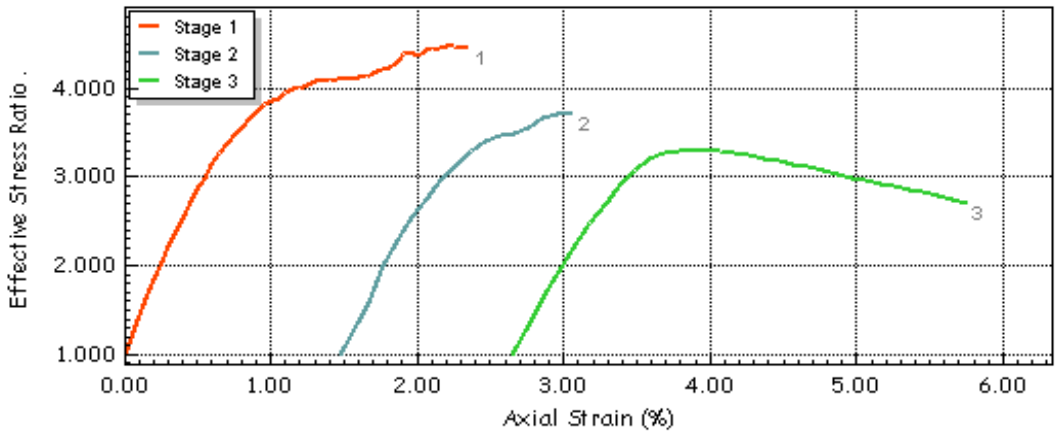
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







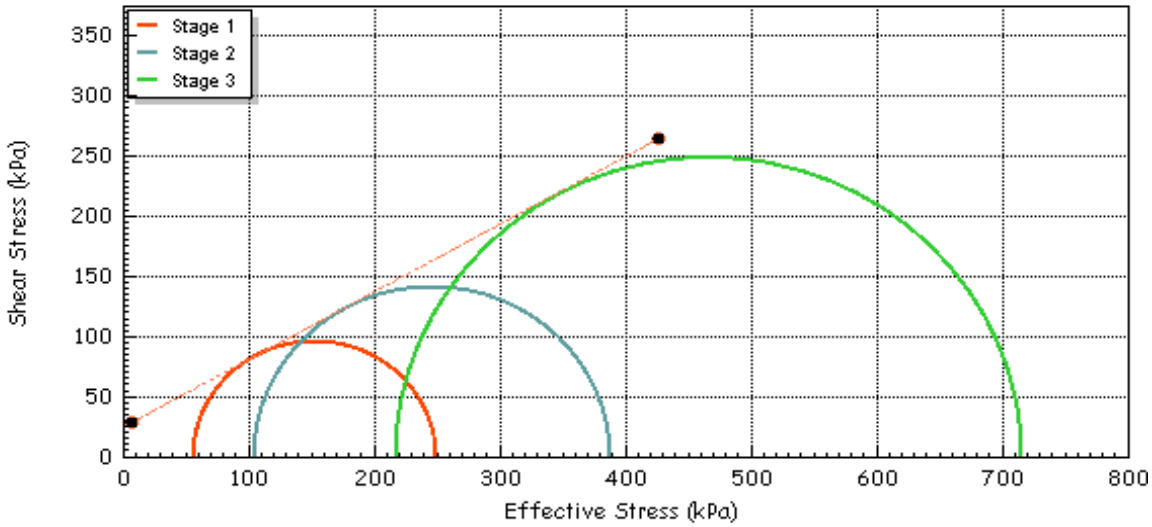
Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 8.50-8.80m U_Copy
		Test Date	21/10/2022
Jobfile	Stansted Terminal 2	Borehole	RC01
Client	Socotec	Sample	8.50-8.80m U
		Depth	8.50-8.80m C111

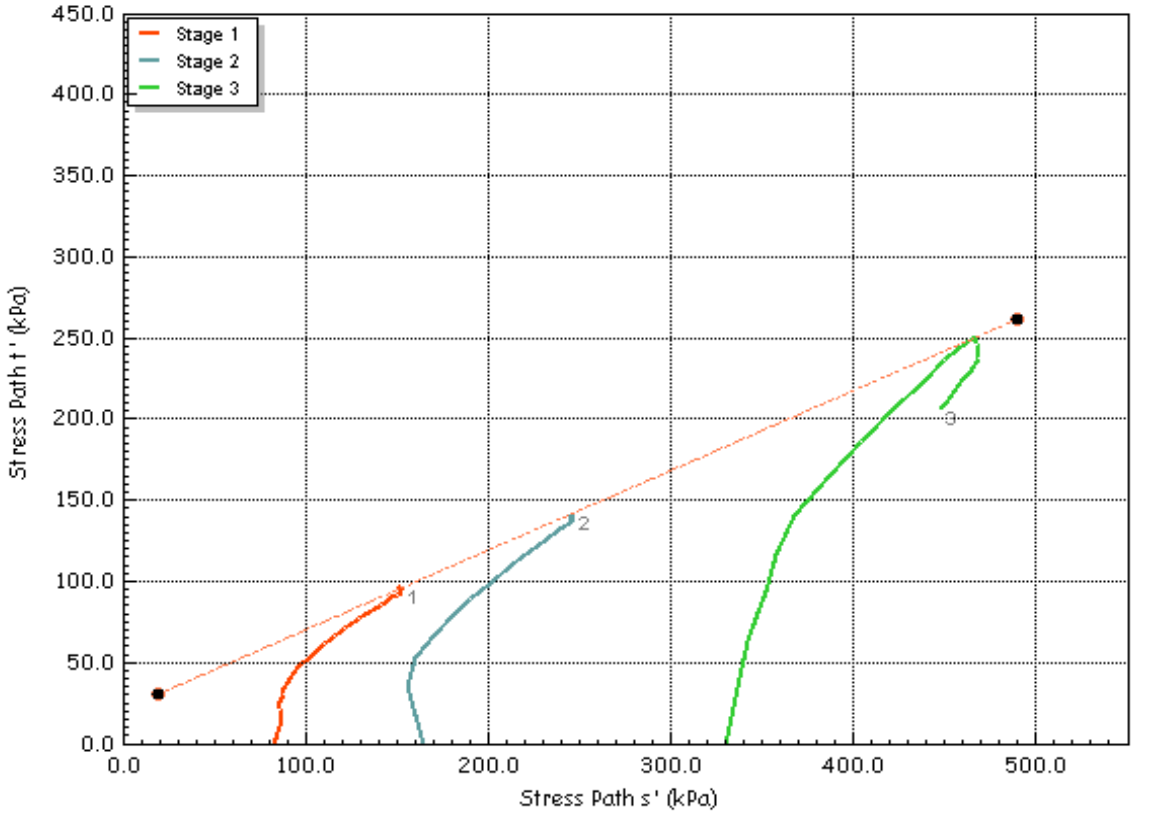
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	24.99	Effective Cohesion	c'	(kPa)	24.99
Effective Friction	ϕ'	(deg)	29.4	Effective Friction	ϕ'	(deg)	29.4





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 8.50-8.80m U_Copy
		Test Date	21/10/2022
Jobfile	Stansted Terminal 2	Borehole	RC01
Client	Socotec	Sample	8.50-8.80m U
		Depth	8.50-8.80m C111

UKAS TESTING

PSL PROFESSIONAL SOILS LABORATORY

Effective Stress Triaxial Compression

Consolidated Undrained

Summary Report

Sample Details				
 *sketch showing specimen location in original sample*	Depth		24.00-24.31m C144	
	Description		See summary of soil descriptions.	
	Type		Undisturbed, vertical orientation.	
	Initial Sample Length	L_0	(mm)	211.0
	Initial Sample Diameter	D_0	(mm)	104.0
	Initial Sample Weight	W_0	(gr)	3512.0
	Initial Bulk Density	ρ_0	(Mg/m3)	1.96
	Particle Density	ρ_s	(Mg/m3)	2.66

Initial Conditions			Stage 1	2	3	4
Initial Cell Pressure	σ_{3i}	(kPa)	860	1020	1340	
Initial Back Pressure	U_{bi}	(kPa)	700	700	700	
Membrane Thickness	m_b	(mm)	0.600			
Displacement Input	L_{IP}	(mm)	CH 2			
Load Input	N_{IP}	(N)	CH 1			
Pore Water Pressure Input	u_{pwp}	(kPa)	CH 3			
Sample Volume	V	(cc)	CH 2			
Initial Moisture	ω_i	(%)	21			
Initial Dry Density	ρ_{di}	(Mg/m3)	1.62			
Initial Voids Ratio	e_i	.	0.642			
Initial Degree of Saturation	S_i	(%)	87			
B Value	B	.	0.96			

Final Conditions						
Final Moisture	ω_f	(%)	21			
Final Dry Density	ρ_{df}	(Mg/m3)	1.72			
Final Voids Ratio	e_f	.	0.548			
Final Degree of Saturation	S_f	(%)	100.0			
			Stage 1	2	3	4
Failure Criteria		.	Max. Dev.	Max. Dev.	Max. Dev.	
Strain At Failure	ε_f	(%)	2.54	4.32	5.13	
Stress At Failure	$(\sigma_1-\sigma_3)$	(kPa)	265.4	435.1	632.7	
Minor Stress At Failure	σ_3'	(kPa)	103.0	211.0	338.0	
Major Stress At Failure	σ_1'	(kPa)	368.4	646.1	970.7	
Principal Stress Ratio At Failure	σ_1'/σ_3'		3.577	3.062	2.872	
PwP At Failure Criteria	u_f		757.0	809.0	1002.0	

Notes

Plastic

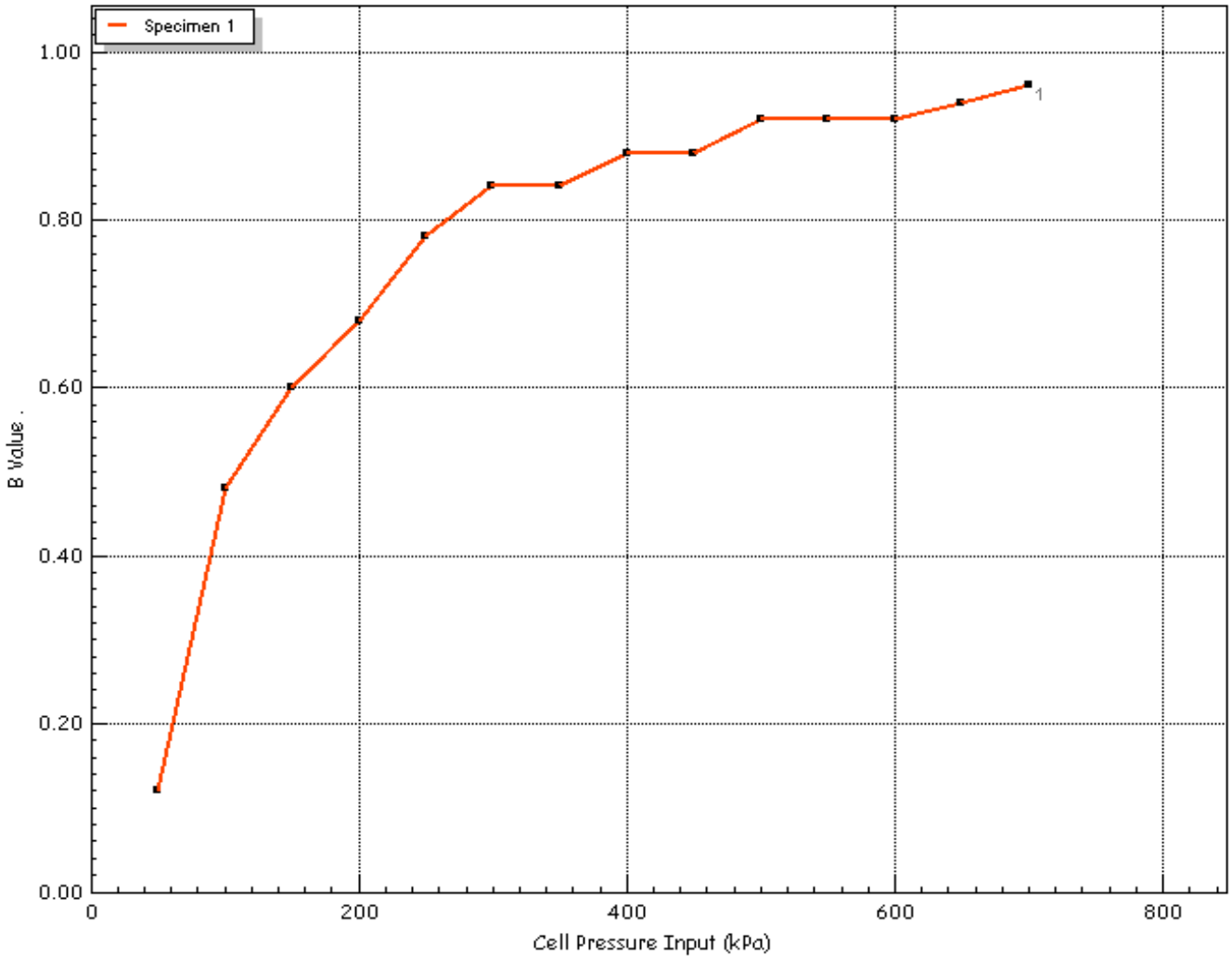
Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 24-24.31m
		Test Date	21/10/2022
		Borehole	RC01
Jobfile	Stanstead Terminal 2 ST2 Ground	Sample	24-24.31m
Client	socotec	Depth	24.00-24.31m C144

Effective Stress Triaxial Compression

Consolidated Undrained

Saturation Plots

Saturation Method			Stepped
Cell Pressure Input	σ	(kPa)	700
Pore Water Pressure Input	u pwp	(kPa)	679
B Value	B	.	0.96



Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 24-24.31m
		Test Date	21/10/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC01
		Sample	24-24.31m
Client	socotec	Depth	24.00-24.31m C144

Effective Stress Triaxial Compression

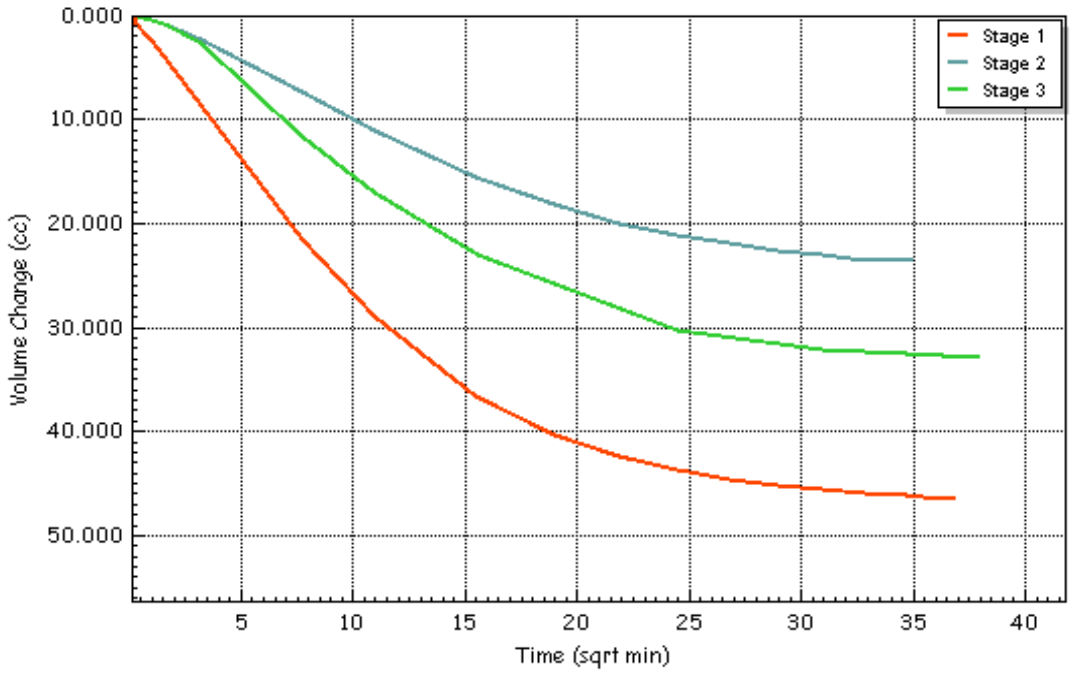
Consolidated Undrained

Consolidation Plots

Initial Conditions			Stage 1	2	3
Initial Cell Pressure	σ_3	(kPa)	860	1020	1340
Initial Back Pressure	u_{bi}	(kPa)	700	700	700
Pore Water Pressure Input	u_{pwp}	(kPa)	829	848	1034
Drainage Method			Radial+One End		

Final Conditions			Stage 1	2	3
PWP Dissipation %	U%	(%)	100.00	100.00	100.00
Volumetric Strain	ε_v%	(%)	2.59	1.32	1.84
Corrected Length	L_C	(mm)	209.2	202.9	195.9
Corrected Area	A_C	(cm2)	83.48	84.87	86.23
Corrected Volume	V_C	(cc)	1745.916	1722.307	1689.413
t100	t_{100}	(min)	255.46	490.68	455.42
Consolidation	c_v	(m2/year)	0.009	0.005	0.005
Compressibility	m_v	(m2/MN)	0.201	0.089	0.055
Test Time	t_F	(h:m:s)	07:39:49	14:43:13	13:39:45
Estimated Strain to Failure	ε%	(%)	5.0	5.0	5.0
Shear Machine Speed	d_r	(mm/min)	0.02274	0.02274	0.02274

Notes

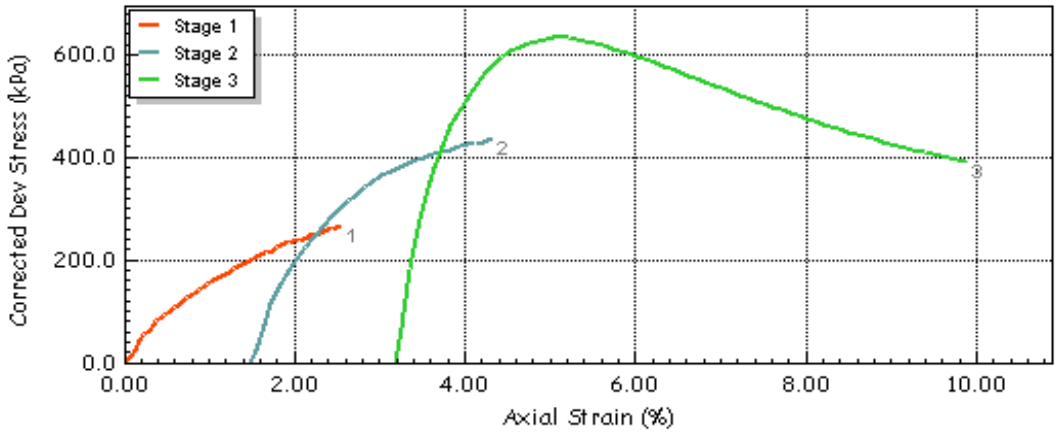


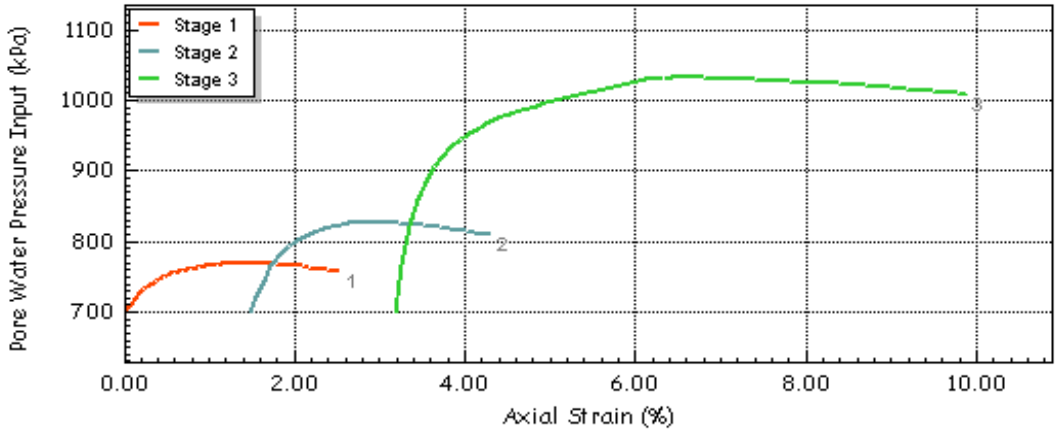
Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 24-24.31m
		Test Date	21/10/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC01
		Sample	24-24.31m
Client	socotec	Depth	24.00-24.31m C144

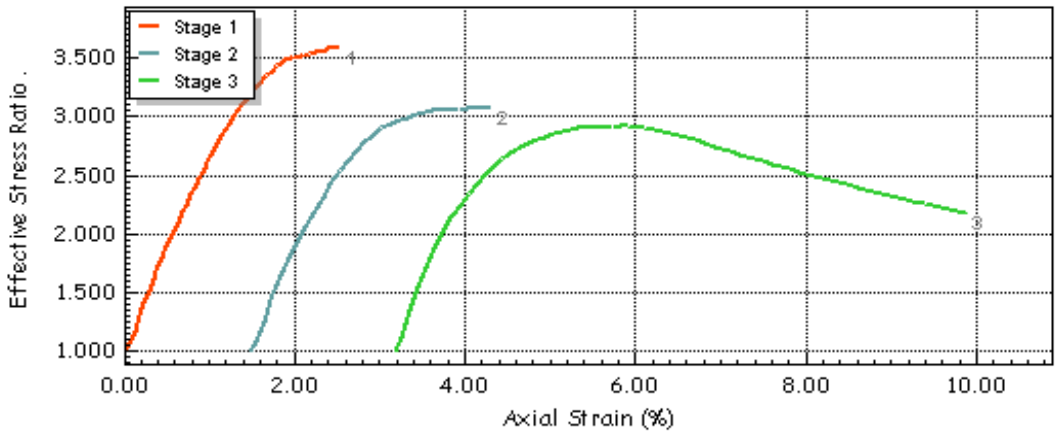
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots







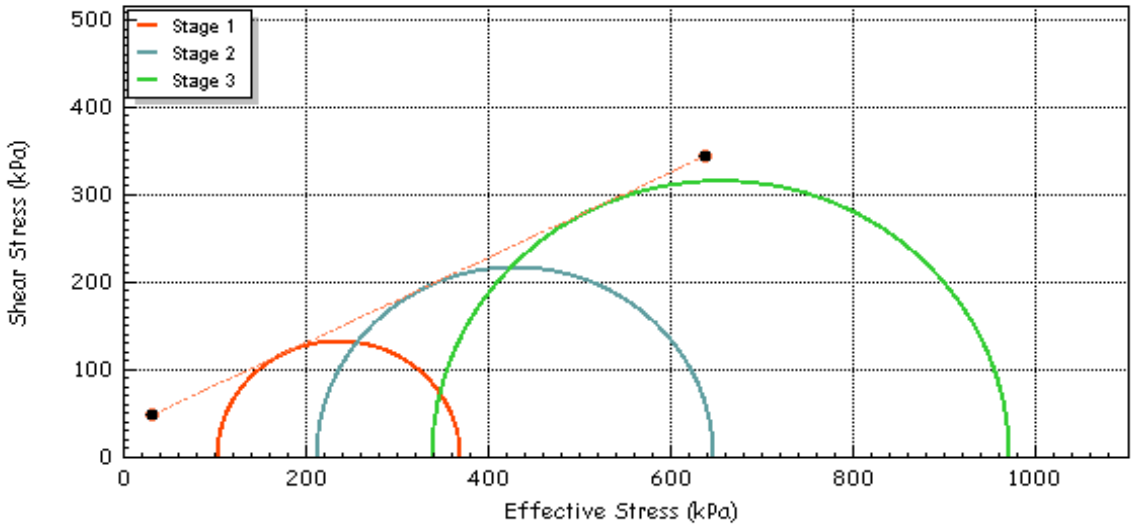
Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 24-24.31m
		Test Date	21/10/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC01
		Sample	24-24.31m
Client	socotec	Depth	24.00-24.31m C144

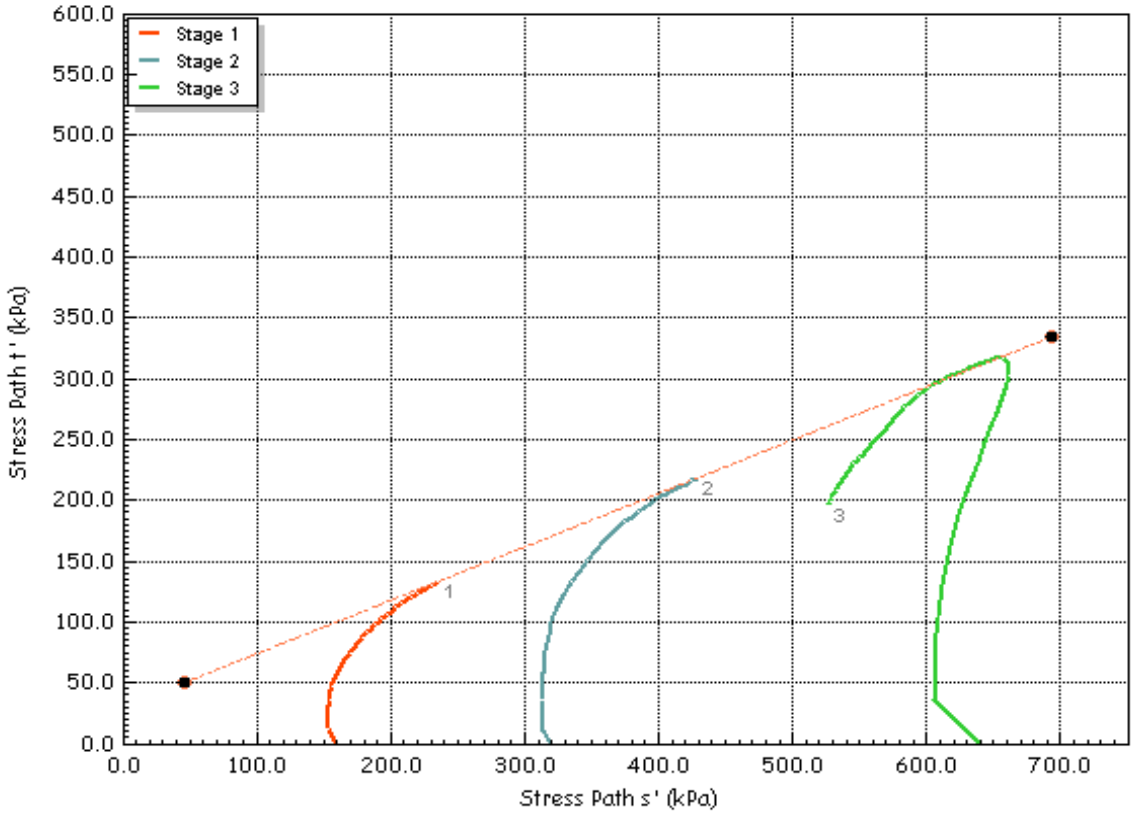
Effective Stress Triaxial Compression

Consolidated Undrained

Shear Stage Plots

Effective	c'	(kPa)	32.97	Effective Cohesion	c'	(kPa)	32.97
Effective Friction	ϕ'	(deg)	26.1	Effective Friction	ϕ'	(deg)	26.1





Test Method	BS1377-8 : 1990 : Clause 7	Test Name	RC01 24-24.31m
		Test Date	21/10/2022
Jobfile	Stanstead Terminal 2 ST2 Ground Investigation	Borehole	RC01
		Sample	24-24.31m
Client	socotec	Depth	24.00-24.31m C144

2531

ANALYTICAL TEST REPORT

Contract no:	114980
Contract name:	Stansted Terminal 2 (ST2) - Ground Investigation
Client reference:	PSL22/6633
Clients name:	Professional Soils Laboratory
Clients address:	5/7 Hexthorpe Road Doncaster DN4 0AR
Samples received:	24 October 2022
Analysis started:	24 October 2022
Analysis completed:	31 October 2022
Report issued:	31 October 2022

Key		
	U	UKAS accredited test
	M	MCERTS & UKAS accredited test
	$	Test carried out by an approved subcontractor
	I/S	Insufficient sample to carry out test
	N/S	Sample not suitable for testing

Approved by: [redacted]

Rachael Burton

Reporting Manager

Chemtech Environmental Limited

SOILS

Lab number			114980-1	114980-2	114980-3	114980-4
Sample id			RC01	RC01	RC01	RC01
Depth (m)			7.80	19.50	23.80	25.50
Sample Type			D	D	D	D
Date sampled			-	-	-	-
Test	Method	Units				
pH	CE004 U	units	7.4	7.7	7.3	5.3
Magnesium (2:1 water soluble)	CE061	mg/l Mg	19	19	60	153
Chloride (2:1 water soluble)	CE049 U	mg/l Cl	3.2	7.9	7.0	6.2
Nitrate (2:1 water soluble)	CE049 U	mg/l NO_3	<1	<1	<1	<1
Sulphate (2:1 water soluble)	CE061 U	mg/l SO_4	837	552	1004	2196
Sulphate (acid extractable)	CE062 U	mg/kg SO_4	2045	1543	2389	5001
Sulphate (acid extractable)	CE062 U	% w/w SO_4	0.20	0.15	0.24	0.50
Sulphur (total)	CE119	mg/kg S	3633	5536	4620	1667
Sulphur (total)	CE119	% w/w S	0.36	0.55	0.46	0.17

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Magnesium (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry		1	mg/l Mg
CE049	Chloride (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l Cl
CE049	Nitrate (2:1 water soluble)	Aqueous extraction, IC-COND	Dry	U	1	mg/l NO_3
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO_4
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO4
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	0.01	% w/w SO4
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		100	mg/kg S
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		0.01	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.
For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.
Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
114980-1	RC01	7.80	Y	All (NSD)
114980-2	RC01	19.50	Y	All (NSD)
114980-3	RC01	23.80	Y	All (NSD)
114980-4	RC01	25.50	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.

LABORATORY REPORT

Contract Number: PSL23/0664

Report Date:	13 February 2023
Client's Reference:	D2027-22
Client Name:	Socotec The Oasts, Newnham Court Bearstead Road Maidstone Kent ME14 5LH
For the attention of:	**Samantha Rawlins**
Contract Title:	Stansted Terminal 2 (ST2) - Ground Investigation
Date Received:	2/2/2023
Date Commenced:	2/2/2023
Date Completed:	13/02/2023
Notes:	**Opinions and Interpretations are outside the UKAS Accreditation**

Checked and Approved Signatories:

A Watkins (Director)	R Berriman (Quality Manager)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	[redacted] M Fennel (Senior Technician)

5 – 7 Hexthorpe Road,
Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098
Email: [redacted]

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS08	3	D	1.00		Brown gravelly sandy CLAY.
DS08	6	D	2.00		Brown slightly gravelly sandy CLAY.
DS08	7	D	2.50		Brown slightly gravelly slightly sandy CLAY.
DS08	12	D	3.50		Brown gravelly sandy CLAY.
DS08	18	B	4.00	4.50	Brown mottled grey gravelly sandy CLAY.
DS08	21	D	5.00		Brown mottled grey gravelly sandy CLAY.

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL23/0664
Client Ref:
D2027-22

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS08	3	D	1.00		19			38	18	20	86	Intermediate Plasticity CI
DS08	6	D	2.00		25							
DS08	7	D	2.50		24			59	25	34	96	High Plasticity CH
DS08	12	D	3.50		17							
DS08	21	D	5.00		16			36	17	19	84	Intermediate Plasticity CI

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

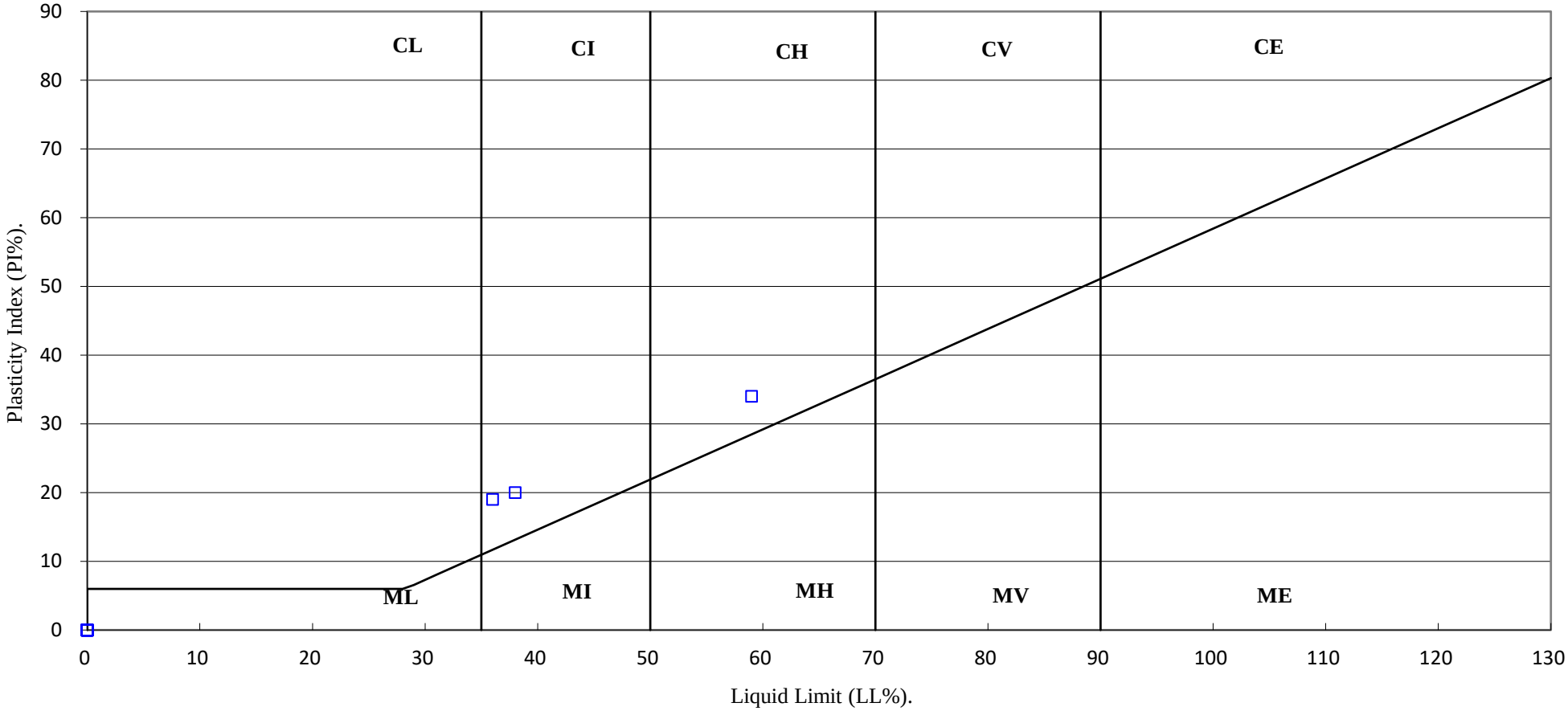
PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No: PSL23/0664

Client Ref: D2027-22

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:**
			PSL23/0664
			Client Ref:
			D2027-22

SUMMARY LIQUID AND PLASTIC LIMITS

(BS EN ISO 17892-12:2018)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content % Part 1 Clause 5	Liquid Limit % Part 12 Clause 5.3	Plastic Limit % Part 12 Clause 5.5	Plasticity Index % Part 12 Clause 6.5	Passing .425mm % Part 12 Clause 5.2	Remarks
DS08	3	D	1.00		19					
DS08	6	D	2.00		25					
DS08	7	D	2.50		24					
DS08	12	D	3.50		17					
DS08	21	D	5.00		16					

SYMBOLS : NP = Non Plastic **NB: All liquid limits are 4 point, wet sieved and are carried out using an 80g/30^{o} fall cone with increasing water content**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:

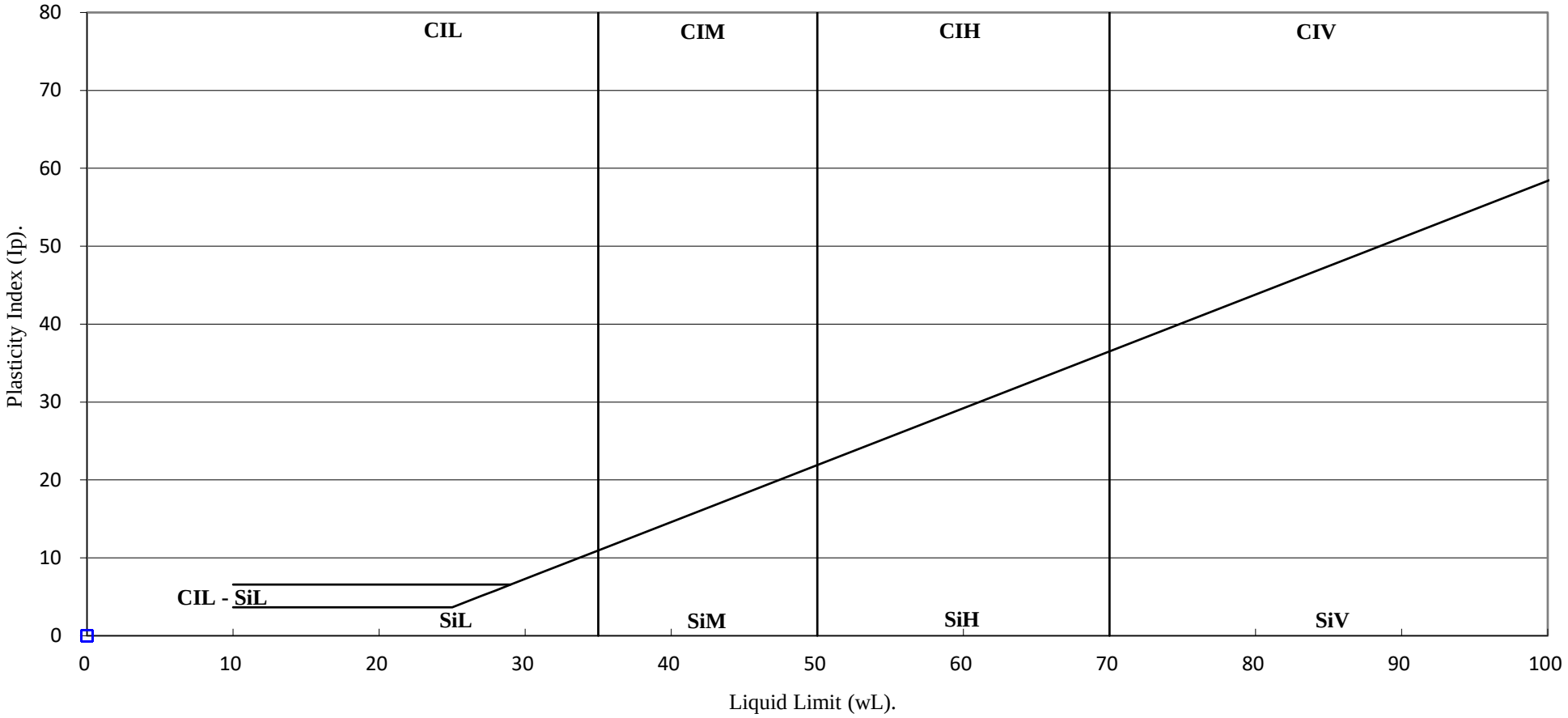
PSL23/0664

Client Ref:

D2027-22

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



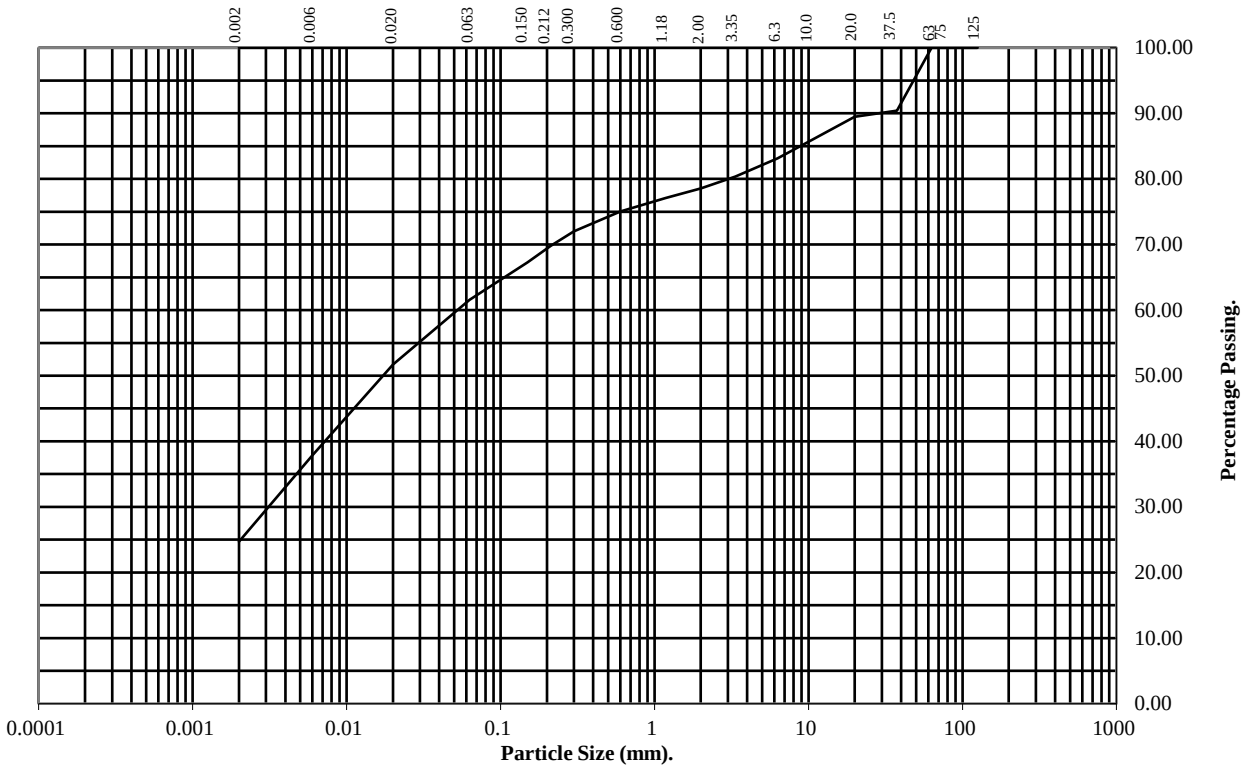
UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Stansted Terminal 2 (ST2) - Ground Investigation**	**Contract No:**
		PSL23/0664
		Client Ref:
		D2027-22

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**DS08**	**Top Depth (m):**	**4.00**
Sample Number:	**18**	**Base Depth(m):**	**4.50**
Sample Type:	**B**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	90
20	89
10	86
6.3	83
3.35	80
2	79
1.18	77
0.6	75
0.3	72
0.212	70
0.15	67
0.063	62

Particle Diameter	Percentage Passing
0.02	52
0.006	38
0.002	25

Soil Fraction	Total Percentage
Cobbles	0
Gravel	21
Sand	17
Silt	37
Clay	25

Remarks:
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Stansted Terminal 2 (ST2) - Ground Investigation

Contract No:
PSL23/0664
Client Ref:
D2027-22

APPENDIX F
GEOENVIRONMENTAL LABORATORY TEST RESULTS

Certificate of Analysis – (Soil/Leachate)	22-22401, 22-22549, 22-22559, 22-22565 22-22998, 22-23198, 22-23201, 22-23204 22-23205, 22-23262, 22-23270, 22-23333 22-24106, 22-24108, 22-24132, 22-24144 22-24146, 22-24150, 22-24162, 22-24263 22-24490, 22-24492, 22-24763, 22-24956 22-25344, 22-25349, 22-25564, 22-25577 22-25597, 22-25777, 22-25943, 22-26907 22-27043
Certificate of Analysis – (Water)	22-30634, 22-30656, 22-30657, 22-30659 22-30660, 22-30662, 22-31567, 22-31778 22-31779, 22-33483, 22-34214, 22-37893 22-40076, 22-44117, 22-44123

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-22401-4		
Initial Date of Issue:	27-Jun-2022	**Date of Re-Issue:**	08-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Wokingham Berkshire RG40 4QW		
Contact(s):	Platon Kostelletos		
Project	D2027-22 - Stansted Terminal 2		
Quotation No.:	Q22-27911	**Date Received:**	16-Jun-2022
Order No.:	D11866	**Date Instructed:**	17-Jun-2022
No. of Samples:	6		
Turnaround (Wkdays):	16	**Results Due:**	08-Jul-2022
Date Approved:	08-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC					**Chemtest Job No.:**	22-22401	22-22401	22-22401	22-22401	22-22401
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1449377	1449378	1449380	1449383	1449384	1449392
Order No.: D11866					Client Sample Ref.:	2	4	10	3	7	4
					Client Sample ID.:	ES2	ES4	ES10	ES3	ES7	ES4
					Sample Location:	TP02	TP02	TP02	TP03	TP03	TP01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	0.60	2.00	0.50	1.50	0.50
					Date Sampled:	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	14-Jun-2022
					Asbestos Lab:	COVENTRY			COVENTRY		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A		-			-		
Asbestos Identification	U	2192		N/A		No Asbestos Detected			No Asbestos Detected		
Moisture	N	2030	%	0.020			19	13		11	11
pH	U	2010		4.0			8.8	8.9		8.7	10.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40			< 0.40	< 0.40		0.47	0.42
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000			16	37		160	230
Cyanide (Free)	U	2300	mg/kg	0.50			< 0.50	< 0.50		< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100			12000	7000		8400	11000
Sulphate (Total)	U	2430	%	0.010			0.041	0.014		0.12	0.11
Arsenic	U	2455	mg/kg	0.5			4.7	2.9		3.4	4.3
Barium	U	2455	mg/kg	0			21	11		17	28
Beryllium	U	2455	mg/kg	0.5			< 0.5	< 0.5		< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10			0.12	< 0.10		< 0.10	< 0.10
Manganese	U	2455	mg/kg	1.0			250	190		170	190
Molybdenum	U	2455	mg/kg	0.5			< 0.5	< 0.5		< 0.5	< 0.5
Antimony	N	2455	mg/kg	2.0			< 2.0	< 2.0		< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50			10	6.0		6.9	11
Mercury	U	2455	mg/kg	0.05			< 0.05	< 0.05		< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50			17	9.5		11	13
Lead	U	2455	mg/kg	0.50			8.4	4.5		6.6	8.6
Selenium	U	2455	mg/kg	0.25			0.38	< 0.25		0.38	0.34
Vanadium	U	2455	mg/kg	0.5			21	9.7		12	18
Zinc	U	2455	mg/kg	0.50			32	20		23	29
Chromium (Trivalent)	N	2490	mg/kg	1.0			16	7.1		8.3	12
Chromium (Hexavalent)	N	2490	mg/kg	0.50			< 0.50	< 0.50		< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010			0.034	0.0014		0.0053	0.0032
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0						31	3.3
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0						< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0						31	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0						< 1.0	< 1.0

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC					**Chemtest Job No.:**	22-22401	22-22401	22-22401	22-22401	22-22401
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1449377	1449378	1449380	1449383	1449384	1449392
Order No.: D11866					Client Sample Ref.:	2	4	10	3	7	4
					Client Sample ID.:	ES2	ES4	ES10	ES3	ES7	ES4
					Sample Location:	TP02	TP02	TP02	TP03	TP03	TP01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	0.60	2.00	0.50	1.50	0.50
					Date Sampled:	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	14-Jun-2022
					Asbestos Lab:	COVENTRY			COVENTRY		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0						< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0						< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0						220	49
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0						< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0						220	49
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0						250	52
Dichlorodifluoromethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Chloromethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Vinyl Chloride	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Bromomethane	U	2760	mg/kg	0.020						< 0.020	< 0.020
Chloroethane	U	2760	mg/kg	0.0020						< 0.0020	< 0.0020
Trichlorofluoromethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,1-Dichloroethene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,1-Dichloroethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Bromochloromethane	U	2760	mg/kg	0.0050						< 0.0050	< 0.0050
Trichloromethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Tetrachloromethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,1-Dichloropropene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Benzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2-Dichloroethane	U	2760	mg/kg	0.0020						< 0.0020	< 0.0020
Trichloroethene	N	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2-Dichloropropane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Dibromomethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Bromodichloromethane	U	2760	mg/kg	0.0050						< 0.0050	< 0.0050
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010						< 0.010	< 0.010
Toluene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010						< 0.010	< 0.010
1,1,2-Trichloroethane	U	2760	mg/kg	0.010						< 0.010	< 0.010
Tetrachloroethene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,3-Dichloropropane	U	2760	mg/kg	0.0020						< 0.0020	< 0.0020
Dibromochloromethane	U	2760	mg/kg	0.010						< 0.010	< 0.010

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC					**Chemtest Job No.:**	22-22401	22-22401	22-22401	22-22401	22-22401
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1449377	1449378	1449380	1449383	1449384	1449392
Order No.: D11866					Client Sample Ref.:	2	4	10	3	7	4
					Client Sample ID.:	ES2	ES4	ES10	ES3	ES7	ES4
					Sample Location:	TP02	TP02	TP02	TP03	TP03	TP01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	0.60	2.00	0.50	1.50	0.50
					Date Sampled:	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	14-Jun-2022
					Asbestos Lab:	COVENTRY			COVENTRY		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,2-Dibromoethane	U	2760	mg/kg	0.0050						< 0.0050	< 0.0050
Chlorobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020						< 0.0020	< 0.0020
Ethylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
m & p-Xylene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
o-Xylene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Styrene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Tribromomethane	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Isopropylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Bromobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2,3-Trichloropropane	N	2760	mg/kg	0.050						< 0.050	< 0.050
N-Propylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
2-Chlorotoluene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
4-Chlorotoluene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Tert-Butylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Sec-Butylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
4-Isopropyltoluene	N	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
N-Butylbenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050						< 0.050	< 0.050
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
Hexachlorobutadiene	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020						< 0.0020	< 0.0020
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010						< 0.0010	< 0.0010
N-Nitrosodimethylamine	N	2790	mg/kg	0.050						< 0.050	< 0.050
Phenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Chlorophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050						< 0.050	< 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Methylphenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050						< 0.050	< 0.050

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC					**Chemtest Job No.:**	22-22401	22-22401	22-22401	22-22401	22-22401
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1449377	1449378	1449380	1449383	1449384	1449392
Order No.: D11866					Client Sample Ref.:	2	4	10	3	7	4
					Client Sample ID.:	ES2	ES4	ES10	ES3	ES7	ES4
					Sample Location:	TP02	TP02	TP02	TP03	TP03	TP01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	0.60	2.00	0.50	1.50	0.50
					Date Sampled:	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	14-Jun-2022
					Asbestos Lab:	COVENTRY			COVENTRY		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Hexachloroethane	N	2790	mg/kg	0.050						< 0.050	< 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Methylphenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Nitrobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Isophorone	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Nitrophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Naphthalene	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Chloroaniline	N	2790	mg/kg	0.050						< 0.050	< 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Nitroaniline	N	2790	mg/kg	0.050						< 0.050	< 0.050
Acenaphthylene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Dimethylphthalate	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Acenaphthene	N	2790	mg/kg	0.050						< 0.050	< 0.050
3-Nitroaniline	N	2790	mg/kg	0.050						< 0.050	< 0.050
Dibenzofuran	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050						< 0.050	< 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Fluorene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Nitroaniline	N	2790	mg/kg	0.050						< 0.050	< 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Azobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050						< 0.050	< 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Pentachlorophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Phenanthrene	N	2790	mg/kg	0.050						0.090	< 0.050

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC					**Chemtest Job No.:**	22-22401	22-22401	22-22401	22-22401	22-22401
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1449377	1449378	1449380	1449383	1449384	1449392
Order No.: D11866					Client Sample Ref.:	2	4	10	3	7	4
					Client Sample ID.:	ES2	ES4	ES10	ES3	ES7	ES4
					Sample Location:	TP02	TP02	TP02	TP03	TP03	TP01
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.30	0.60	2.00	0.50	1.50	0.50
					Date Sampled:	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	14-Jun-2022
					Asbestos Lab:	COVENTRY			COVENTRY		
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Anthracene	N	2790	mg/kg	0.050						0.056	< 0.050
Carbazole	N	2790	mg/kg	0.050						< 0.050	< 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050						< 0.050	< 0.050
Fluoranthene	N	2790	mg/kg	0.050						0.46	< 0.050
Pyrene	N	2790	mg/kg	0.050						0.44	0.056
Butylbenzyl Phthalate	N	2790	mg/kg	0.050						< 0.050	< 0.050
Benzo[a]anthracene	N	2790	mg/kg	0.050						0.25	< 0.050
Chrysene	N	2790	mg/kg	0.050						0.32	< 0.050
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050						0.16	< 0.050
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050						< 0.050	< 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050						0.32	< 0.050
Benzo[k]fluoranthene	N	2790	mg/kg	0.050						0.14	< 0.050
Benzo[a]pyrene	N	2790	mg/kg	0.050						0.079	< 0.050
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050						0.16	< 0.050
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050						< 0.050	< 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050						0.19	< 0.050
4-Nitrophenol	N	2790	mg/kg	0.050						< 0.050	< 0.050
Naphthalene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010		1.1	< 0.010			< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010		0.22	< 0.010			< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010		0.93	< 0.010			< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010		0.74	< 0.010			< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010		0.32	< 0.010			< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010		0.30	< 0.010			< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		0.26	< 0.010			< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		0.11	< 0.010			< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010		0.40	< 0.010			< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		< 0.010	< 0.010			< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20		4.4	< 0.20			< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10		< 0.10	< 0.10			< 0.10	< 0.10

Results - 2 Stage WAC

Project: D2027-22 - Stansted Terminal 2

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22401								
Chemtest Sample ID:	1449384								
Sample Ref:	7								
Sample ID:	ES7						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample Location:	TP03								
Top Depth(m):	1.50								
Bottom Depth(m):									
Sampling Date:	13-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	U	%			0.53	3	5	6
Loss On Ignition	2610	U	%			2.0	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg			250	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	U				8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.046	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0023	0.0010	0.0046	0.012	0.5	2	25
Barium	1455	U	0.023	0.007	0.045	0.090	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0019	< 0.0005	0.0038	0.0024	0.5	10	70
Copper	1455	U	0.0068	0.0014	0.014	0.0087	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.017	0.0042	0.034	0.058	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0013	0.0008	0.0027	0.0082	0.06	0.7	5
Selenium	1455	U	0.0021	< 0.0005	0.0042	0.0027	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	18	2.5	36	45	800	15000	25000
Fluoride	1220	U	1.7	0.85	3.4	9.6	10	150	500
Sulphate	1220	U	170	28	330	460	1000	20000	50000
Total Dissolved Solids	1020	N	230	160	450	1700	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	36	7.7	72	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.328
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.223

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-22549-1
Initial Date of Issue:	27-Jun-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	17-Jun-2022
Order No.:	D11866	**Date Instructed:**	20-Jun-2022
No. of Samples:	2		
Turnaround (Wkdays):	7	**Results Due:**	28-Jun-2022
Date Approved:	27-Jun-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-22549	22-22549
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1450076	1450077
Order No.: D11866			Client Sample Ref.:		ES1	ES2
			Client Sample ID.:		1	2
			Sample Location:		TP05	TP05
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.30
			Bottom Depth (m):		0.10	0.30
			Date Sampled:		15-Jun-2022	15-Jun-2022
			Asbestos Lab:			NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected
Moisture	N	2030	%	0.020	13	13
pH	U	2010		4.0	9.1	8.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.44	0.61
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	310	33
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	7300	13000
Sulphate (Total)	U	2430	%	0.010	0.41	0.21
Arsenic	U	2455	mg/kg	0.5	2.5	4.8
Barium	U	2455	mg/kg	0	15	23
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.11	0.81
Manganese	U	2455	mg/kg	1.0	150	270
Molybdenum	U	2455	mg/kg	0.5	< 0.5	0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	4.8	76
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	7.2	12
Lead	U	2455	mg/kg	0.50	4.3	9.5
Selenium	U	2455	mg/kg	0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	8.5	8.9
Zinc	U	2455	mg/kg	0.50	15	110
Chromium (Trivalent)	N	2490	mg/kg	1.0	5.9	7.7
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.027	0.012
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-22549	22-22549
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1450076	1450077
Order No.: D11866				Client Sample Ref.:	ES1	ES2
				Client Sample ID.:	1	2
				Sample Location:	TP05	TP05
				Sample Type:	SOIL	SOIL
				Top Depth (m):	0.10	0.30
				Bottom Depth (m):	0.10	0.30
				Date Sampled:	15-Jun-2022	15-Jun-2022
				Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10
Benzene	U	2760	µg/kg	1.0		< 1.0
Toluene	U	2760	µg/kg	1.0		< 1.0
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0
o-Xylene	U	2760	µg/kg	1.0		< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-22559-4		
Initial Date of Issue:	12-Jul-2022	**Date of Re-Issue:**	22-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	17-Jun-2022
Order No.:	D11866	**Date Instructed:**	20-Jun-2022
No. of Samples:	3		
Turnaround (Wkdays):	7	**Results Due:**	28-Jun-2022
Date Approved:	12-Jul-2022	**Subcon Results Due:**	11-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-22559	22-22559	22-22559
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1450121	1450122	1450124
Order No.: D11866			Client Sample Ref.:		ES2	ES3	ES10
			Client Sample ID.:		2	3	12
			Sample Location:		TP07	TP07	TP07
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	1.60
			Bottom Depth (m):		0.30	0.50	1.60
			Date Sampled:		15-Jun-2022	15-Jun-2022	15-Jun-2022
			Asbestos Lab:			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A		-	-
Asbestos Identification	U	2192		N/A		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	10	11	14
pH	M	2010		4.0	7.5	10.4	9.9
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.8	0.80	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	M	2120	mg/l	10.000	65	920	< 10
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	15000	12000	9100
Sulphate (Total)	U	2430	%	0.010	0.44	0.31	0.23
Arsenic	M	2455	mg/kg	0.5	6.7	4.8	3.7
Barium	M	2455	mg/kg	0	41	32	27
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Cadmium	M	2455	mg/kg	0.10	0.13	0.13	0.11
Manganese	M	2455	mg/kg	1.0	260	200	160
Molybdenum	M	2455	mg/kg	0.5	0.5	< 0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50	12	7.9	5.9
Mercury	M	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Nickel	M	2455	mg/kg	0.50	13	9.8	7.8
Lead	M	2455	mg/kg	0.50	17	18	19
Selenium	M	2455	mg/kg	0.25	0.39	0.33	0.37
Vanadium	U	2455	mg/kg	0.5	24	17	13
Zinc	M	2455	mg/kg	0.50	41	31	25
Chromium (Trivalent)	N	2490	mg/kg	1.0	14	9.9	7.6
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.013	0.0074	0.0051
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/kg	N/A		See Attached	
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/kg	N/A		See Attached	
Naphthalene	N	2800	mg/kg	0.010	0.35	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.13	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	0.38	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	0.28	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	1.6	1.3	0.84
Anthracene	N	2800	mg/kg	0.010	0.43	0.33	0.16

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-22559	22-22559	22-22559
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1450121	1450122	1450124
Order No.: D11866			Client Sample Ref.:		ES2	ES3	ES10
			Client Sample ID.:		2	3	12
			Sample Location:		TP07	TP07	TP07
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	1.60
			Bottom Depth (m):		0.30	0.50	1.60
			Date Sampled:		15-Jun-2022	15-Jun-2022	15-Jun-2022
			Asbestos Lab:			DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Fluoranthene	N	2800	mg/kg	0.010	3.1	2.7	1.2
Pyrene	N	2800	mg/kg	0.010	2.6	2.4	1.0
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.3	1.0	0.52
Chrysene	N	2800	mg/kg	0.010	1.1	1.1	0.49
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	1.7	1.4	0.48
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.67	0.51	0.15
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.5	1.3	0.40
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	15	12	5.2
PCB 81	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 77	U	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	< 0.12	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0		See Attached	

Results - 2 Stage WAC

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22559								
Chemtest Sample ID:	1450122								
Sample Ref:	ES3								
Sample ID:	3								
Sample Location:	TP07								
Top Depth(m):	0.50								
Bottom Depth(m):	0.50								
Sampling Date:	15-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			0.74	3	5	6
Loss On Ignition	2610	M	%			4.7	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			130	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			14	100	--	--
pH	2010	M				10.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.14	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0088	0.0054	0.017	0.059	0.5	2	25
Barium	1455	U	0.025	0.012	0.049	0.14	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0092	< 0.0005	0.018	0.013	0.5	10	70
Copper	1455	U	0.078	0.014	0.15	0.11	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.016	0.0018	0.032	0.038	0.5	10	30
Nickel	1455	U	0.0080	< 0.0005	0.016	0.012	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0021	0.0017	0.0042	0.018	0.06	0.7	5
Selenium	1455	U	0.0036	0.0010	0.0071	0.014	0.1	0.5	7
Zinc	1455	U	0.003	< 0.003	0.006	0.004	4	50	200
Chloride	1220	U	7.7	8.7	15	85	800	15000	25000
Fluoride	1220	U	0.30	0.31	< 1.0	3.1	10	150	500
Sulphate	1220	U	160	170	320	1600	1000	20000	50000
Total Dissolved Solids	1020	N	310	170	620	1900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	5.1	< 50	69	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.329
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.250

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Test Methods

SOP	Title	Parameters included	Method summary
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22404
Our reference	:	Project 1378497
Validation Ref.	:	1378497_certificaat_v1
Verificationcode	:	QYRU-EBOE-YOAB-BVNW
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 11 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378497**
Your Project Description	:	**22404**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243537 = 1450122

Client sampling date	:	**15/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243537**
Your Matrix	:	**Soil**

Sample preparation

S AS3000 (steekmonster)		**done**
S sample preparation		**done**

General analysis - physics

S dry weight	%	**61,8**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code : **1378497**
Your Project Description : **22404**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7243537 = 1450122

Client sampling date : **15/06/2022**
Date of receipt : **04/07/2022**
Startdate : **06/07/2022**
Reference number : **7243537**
Your Matrix : **Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,6**
Q	PFOS branched	µg/kg dw	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**0,3**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,2**
	sum PFOS	µg/kg dw	**0,7**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

C E R T I F I C A T E

Project code	:	**1378497**
Your Project Description	:	**22404**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1378497**
Your Project Description	:	**22404**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378497**
Your Project Description	:	**22404**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-22565-3		
Initial Date of Issue:	13-Jul-2022	**Date of Re-Issue:**	13-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	17-Jun-2022
Order No.:	D11866	**Date Instructed:**	20-Jun-2022
No. of Samples:	3		
Turnaround (Wkdays):	7	**Results Due:**	28-Jun-2022
Date Approved:	13-Jul-2022	**Subcon Results Due:**	11-Jul-2022

Ap

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1450165
Order No.: D11866				Client Sample Ref.:		ES5
				Client Sample ID.:		5
				Sample Location:		TP06
				Sample Type:		SOIL
				Top Depth (m):		0.50
				Bottom Depth (m):		0.5
				Date Sampled:		15-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	8.3
Chloride	U	1220	2:1	mg/l	1.0	1.5
Fluoride	U	1220	2:1	mg/l	0.050	0.22
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	< 0.050
Sulphate	U	1220	2:1	mg/l	1.0	50
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	120
Magnesium	U	1455	2:1	mg/l	0.20	0.85
Hardness as Ca	U	1415	2:1	mg/l	6	120
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0032
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.06
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.030
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.016
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0025
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.011
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0043
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.010
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	0.027
Mercury Low Level	U	1460	2:1	mg/l	0.000010	0.00006
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.046
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	0.22
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	3
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1450165
Order No.: D11866				Client Sample Ref.:		ES5
				Client Sample ID.:		5
				Sample Location:		TP06
				Sample Type:		SOIL
				Top Depth (m):		0.50
				Bottom Depth (m):		0.5
				Date Sampled:		15-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	12
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1450165
Order No.: D11866				Client Sample Ref.:		ES5
				Client Sample ID.:		5
				Sample Location:		TP06
				Sample Type:		SOIL
				Top Depth (m):		0.50
				Bottom Depth (m):		0.5
				Date Sampled:		15-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-22565	22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1450163	1450166
Order No.: D11866				Client Sample Ref.:	ES1	ES10
				Client Sample ID.:	1	10
				Sample Location:	TP06	TP06
				Sample Type:	SOIL	SOIL
				Top Depth (m):	0.10	1.50
				Bottom Depth (m):	0.10	1.50
				Date Sampled:	15-Jun-2022	15-Jun-2022
				Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected
Moisture	N	2030	%	0.020	4.7	12
pH	U	2010		4.0	> 12.0	10.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.57	0.99
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	370	330
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	9000	12000
Sulphate (Total)	U	2430	%	0.010	0.39	0.24
Arsenic	U	2455	mg/kg	0.5	3.6	6.0
Barium	U	2455	mg/kg	0	49	190
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.15	0.25
Manganese	U	2455	mg/kg	1.0	250	370
Molybdenum	U	2455	mg/kg	0.5	< 0.5	0.7
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	13	30
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	8.4	17
Lead	U	2455	mg/kg	0.50	19	29
Selenium	U	2455	mg/kg	0.25	0.35	0.47
Vanadium	U	2455	mg/kg	0.5	16	21
Zinc	U	2455	mg/kg	0.50	33	120
Chromium (Trivalent)	N	2490	mg/kg	1.0	11	19
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.018	0.011
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	76	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	89	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	1200	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-22565	22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1450163	1450166
Order No.: D11866				Client Sample Ref.:	ES1	ES10
				Client Sample ID.:	1	10
				Sample Location:	TP06	TP06
				Sample Type:	SOIL	SOIL
				Top Depth (m):	0.10	1.50
				Bottom Depth (m):	0.10	1.50
				Date Sampled:	15-Jun-2022	15-Jun-2022
				Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	1400	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	27	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	93	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	65	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	2800	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	150	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	3100	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	4500	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	
Chloromethane	U	2760	µg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	
Bromomethane	U	2760	µg/kg	20	< 20	
Chloroethane	U	2760	µg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-22565	22-22565
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1450163	1450166
Order No.: D11866				Client Sample Ref.:	ES1	ES10
				Client Sample ID.:	1	10
				Sample Location:	TP06	TP06
				Sample Type:	SOIL	SOIL
				Top Depth (m):	0.10	1.50
				Bottom Depth (m):	0.10	1.50
				Date Sampled:	15-Jun-2022	15-Jun-2022
				Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	µg/kg	10	< 10	
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/kg	N/A		See Attached
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/kg	N/A		See Attached
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-22565	22-22565
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1450163	1450166
Order No.: D11866			Client Sample Ref.:		ES1	ES10
			Client Sample ID.:		1	10
			Sample Location:		TP06	TP06
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	1.50
			Bottom Depth (m):		0.10	1.50
			Date Sampled:		15-Jun-2022	15-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Phenol	U	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790	mg/kg	0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Naphthalene	U	2790	mg/kg	0.50	0.73	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
2-Methylnaphthalene	U	2790	mg/kg	0.50	0.66	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	
Acenaphthene	U	2790	mg/kg	0.50	1.7	
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	
Dibenzofuran	U	2790	mg/kg	0.50	1.1	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-22565	22-22565
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1450163	1450166
Order No.: D11866			Client Sample Ref.:		ES1	ES10
			Client Sample ID.:		1	10
			Sample Location:		TP06	TP06
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	1.50
			Bottom Depth (m):		0.10	1.50
			Date Sampled:		15-Jun-2022	15-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	1.1	
Fluorene	U	2790	mg/kg	0.50	1.2	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	
Azobenzene	U	2790	mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	5.8	
Anthracene	U	2790	mg/kg	0.50	2.0	
Carbazole	U	2790	mg/kg	0.50	0.63	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	7.5	
Pyrene	U	2790	mg/kg	0.50	6.1	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	3.0	
Chrysene	U	2790	mg/kg	0.50	2.8	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	3.8	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	1.5	
Benzo[a]pyrene	U	2790	mg/kg	0.50	1.0	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	1.7	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	1.9	
Naphthalene	N	2800	mg/kg	0.010	0.32	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.25	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	1.9	< 0.010
Fluorene	N	2800	mg/kg	0.010	1.6	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	18	4.0
Anthracene	N	2800	mg/kg	0.010	4.8	1.0
Fluoranthene	N	2800	mg/kg	0.010	24	6.5
Pyrene	N	2800	mg/kg	0.010	19	5.3

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-22565	22-22565
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1450163	1450166
Order No.: D11866					Client Sample Ref.:	ES1	ES10
					Client Sample ID.:	1	10
					Sample Location:	TP06	TP06
					Sample Type:	SOIL	SOIL
					Top Depth (m):	0.10	1.50
					Bottom Depth (m):	0.10	1.50
					Date Sampled:	15-Jun-2022	15-Jun-2022
					Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Benzo[a]anthracene	N	2800	mg/kg	0.010		8.4	2.4
Chrysene	N	2800	mg/kg	0.010		8.0	2.1
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		9.6	3.0
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		3.6	1.1
Benzo[a]pyrene	N	2800	mg/kg	0.010		8.4	2.4
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		5.1	1.6
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010		0.83	0.23
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		4.7	1.3
Total Of 16 PAH's	N	2800	mg/kg	0.20		120	31
Total Phenols	U	2920	mg/kg	0.10		< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22403
Our reference	:	Project 1378606
Validation Ref.	:	1378606_certificaat_v1
Verificationcode	:	TKCZ-QAAI-HDZZ-LBDF
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 12 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378606**
Your Project Description	:	**22403**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7244245 = 1450166

Client sampling date	:	**15/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7244245**
Your Matrix	:	**Soil**

Sample preparation			
S	AS3000 (steekmonster)		**done**
S	sample preparation		**done**
General analysis - physics			
S	dry weight	%	**87,5**

CERTIFICATE

Project code	:	**1378606**
Your Project Description	:	**22403**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7244245 = 1450166

Client sampling date	:	**15/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7244245**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,9**
Q	PFOS branched	µg/kg dw	**0,2**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**
Q	8:2 FTS	µg/kg dw	**0,2**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**
	sum PFOS	µg/kg dw	**1,1**

C E R T I F I C A T E

Project code	:	**1378606**
Your Project Description	:	**22403**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1378606**
Your Project Description	:	**22403**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378606**
Your Project Description	:	**22403**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-22998-2		
Initial Date of Issue:	01-Jul-2022	**Date of Re-Issue:**	05-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun		
Quotation No.:	Q22-27911	**Date Received:**	21-Jun-2022
Order No.:	D11866	**Date Instructed:**	22-Jun-2022
No. of Samples:	3		
Turnaround (Wkdays):	12	**Results Due:**	07-Jul-2022
Date Approved:	05-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC				**Chemtest Job No.:**		22-22998
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1451915
Order No.: D11866				Client Sample Ref.:		ES4
				Client Sample ID.:		4
				Sample Location:		TP08
				Sample Type:		SOIL
				Top Depth (m):		0.3
				Date Sampled:		17-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	8.3
Chloride	U	1220	2:1	mg/l	1.0	9.1
Fluoride	U	1220	2:1	mg/l	0.050	0.28
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.068
Sulphate	U	1220	2:1	mg/l	1.0	13
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	130
Magnesium	U	1455	2:1	mg/l	0.20	< 0.20
Hardness as Ca	U	1415	2:1	mg/l	6	130
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0004
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.18
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0065
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.014
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0035
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	23
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	17
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0

Results - Leachate

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC				**Chemtest Job No.:**		22-22998
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1451915
Order No.: D11866				Client Sample Ref.:		ES4
				Client Sample ID.:		4
				Sample Location:		TP08
				Sample Type:		SOIL
				Top Depth (m):		0.3
				Date Sampled:		17-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	4.9
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050

Results - Leachate

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC				**Chemtest Job No.:**		22-22998
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1451915
Order No.: D11866				Client Sample Ref.:		ES4
				Client Sample ID.:		4
				Sample Location:		TP08
				Sample Type:		SOIL
				Top Depth (m):		0.3
				Date Sampled:		17-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	9.8	12
pH	M	2010		4.0	10.9	11.1
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	1.9	1.6
Sulphate (2:1 Water Soluble) as SO4 mg/l	M	2120	mg/l	10.000	1600	1200
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	10000
Sulphate (Total)	U	2430	%	0.010	0.28	0.28
Arsenic	M	2455	mg/kg	0.5	7.6	7.0
Barium	M	2455	mg/kg	0	89	83
Beryllium	U	2455	mg/kg	0.5	< 0.5	0.5
Cadmium	M	2455	mg/kg	0.10	0.17	0.19
Manganese	M	2455	mg/kg	1.0	250	320
Molybdenum	M	2455	mg/kg	0.5	0.6	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50	13	13
Mercury	M	2455	mg/kg	0.05	< 0.05	0.05
Nickel	M	2455	mg/kg	0.50	13	14
Lead	M	2455	mg/kg	0.50	23	28
Selenium	M	2455	mg/kg	0.25	0.48	0.47
Vanadium	U	2455	mg/kg	0.5	26	26
Zinc	M	2455	mg/kg	0.50	57	62
Chromium (Trivalent)	N	2490	mg/kg	1.0	15	16
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.0086	0.0092
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	
Chloromethane	M	2760	µg/kg	1.0	< 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0	< 1.0	
Bromomethane	M	2760	µg/kg	20	< 20	
Chloroethane	U	2760	µg/kg	2.0	< 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	
Trichloromethane	M	2760	µg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	< 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	
Benzene	M	2760	µg/kg	1.0	< 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0	
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0	< 1.0	
Dibromomethane	M	2760	µg/kg	1.0	< 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	
Toluene	M	2760	µg/kg	1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10	< 10	
Tetrachloroethene	M	2760	µg/kg	1.0	< 1.0	

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	µg/kg	10	< 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0	< 5.0	
Chlorobenzene	M	2760	µg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	< 2.0	
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	
o-Xylene	M	2760	µg/kg	1.0	< 1.0	
Styrene	M	2760	µg/kg	1.0	< 1.0	
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0	< 1.0	
Bromobenzene	M	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	
Phenol	M	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50	
Isophorone	M	2790	mg/kg	0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50	
Naphthalene	M	2790	mg/kg	0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	
Fluorene	M	2790	mg/kg	0.50	< 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Azobenzene	M	2790	mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	
Anthracene	M	2790	mg/kg	0.50	< 0.50	
Carbazole	M	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	
Fluoranthene	M	2790	mg/kg	0.50	0.69	
Pyrene	M	2790	mg/kg	0.50	0.61	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50	
Chrysene	M	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.64	0.95
Anthracene	N	2800	mg/kg	0.010	0.20	0.25
Fluoranthene	N	2800	mg/kg	0.010	1.6	1.9
Pyrene	N	2800	mg/kg	0.010	1.5	1.9
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.94	1.0
Chrysene	N	2800	mg/kg	0.010	0.93	0.86
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	1.9	1.9
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.64	0.34
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.6	1.7
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	1.1	1.1
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.15	0.24

Results - Soil

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

Client: SOCOTEC			**Chemtest Job No.:**		22-22998	22-22998
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1451915	1451920
Order No.: D11866			Client Sample Ref.:		ES4	ES15
			Client Sample ID.:		4	15
			Sample Location:		TP08	TP08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	2.0
			Date Sampled:		17-Jun-2022	17-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	0.99	1.0
Total Of 16 PAH's	N	2800	mg/kg	0.20	12	13
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	U	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10

Results - 2 Stage WAC

Project: Standsted Airport D2027-22 Stansted Terminal 2 (ST2) - Groun

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-22998								
Chemtest Sample ID:	1451916								
Sample Ref:	ES7								
Sample ID:	7								
Sample Location:	TP08								
Top Depth(m):	0.5								
Bottom Depth(m):									
Sampling Date:	17-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			2.1	3	5	6
Loss On Ignition	2610	M	%			3.6	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			1000	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			78	100	--	--
pH	2010	M				10.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.014	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0006	0.0003	0.0013	0.0035	0.5	2	25
Barium	1455	U	0.034	0.026	0.068	0.27	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.16	0.034	0.32	0.52	0.5	10	70
Copper	1455	U	0.023	0.0040	0.046	0.032	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.013	0.0033	0.025	0.046	0.5	10	30
Nickel	1455	U	0.0008	< 0.0005	0.0016	0.0011	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0025	0.0024	0.0050	0.024	0.06	0.7	5
Selenium	1455	U	0.0025	0.0008	0.0051	0.010	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	15	12	30	120	800	15000	25000
Fluoride	1220	U	0.32	0.30	< 1.0	3.0	10	150	500
Sulphate	1220	U	79	59	160	620	1000	20000	50000
Total Dissolved Solids	1020	N	350	290	700	2900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	10	3.4	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	9.9

Leachate Test Information	
Leachant volume 1st extract/l	0.331
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.242

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry

Test Methods

SOP	Title	Parameters included	Method summary
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Test Methods

SOP	Title	Parameters included	Method summary
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-23198-3		
Initial Date of Issue:	11-Jul-2022	**Date of Re-Issue:**	11-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Platon Kostelletos		
Project	D2027-22 Stansted Airport Terminal 2		
Quotation No.:	Q22-27911	**Date Received:**	22-Jun-2022
Order No.:	D11866	**Date Instructed:**	23-Jun-2022
No. of Samples:	1		
Turnaround (Wkdays):	12	**Results Due:**	08-Jul-2022
Date Approved:	08-Jul-2022	**Subcon Results Due:**	14-Jul-2022

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452791
Order No.: D11866				Client Sample Ref.:		9
				Sample Location:		DS04
				Sample Type:		SOIL
				Top Depth (m):		1.3
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	10.2
Chloride	U	1220	2:1	mg/l	1.0	3.0
Fluoride	U	1220	2:1	mg/l	0.050	0.69
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.78
Sulphate	U	1220	2:1	mg/l	1.0	480
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	180
Magnesium	U	1455	2:1	mg/l	0.20	12
Hardness as Ca	U	1415	2:1	mg/l	6	200
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0012
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.08
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.034
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0006
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.50
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0020
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0008
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0012
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452791
Order No.: D11866				Client Sample Ref.:		9
				Sample Location:		DS04
				Sample Type:		SOIL
				Top Depth (m):		1.3
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	7.4
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452791
Order No.: D11866			Client Sample Ref.:		9
			Sample Location:		DS04
			Sample Type:		SOIL
			Top Depth (m):		1.3
			Date Sampled:		20-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	21
pH	M	2010		4.0	8.7
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	2.5
Sulphate (2:1 Water Soluble) as SO4 mg/l	M	2120	mg/l	10.000	1100
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	19000
Sulphate (Total)	U	2430	%	0.010	0.10
Arsenic	M	2455	mg/kg	0.5	< 0.5
Barium	M	2455	mg/kg	0	< 1
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	M	2455	mg/kg	0.10	< 0.10
Manganese	M	2455	mg/kg	1.0	< 1.0
Molybdenum	M	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	M	2455	mg/kg	0.50	< 0.50
Mercury	M	2455	mg/kg	0.05	< 0.05
Nickel	M	2455	mg/kg	0.50	< 0.50
Lead	M	2455	mg/kg	0.50	< 0.50
Selenium	M	2455	mg/kg	0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	< 0.5
Zinc	M	2455	mg/kg	0.50	< 0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0	< 1.0
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.027
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452791
Order No.: D11866			Client Sample Ref.:		9
			Sample Location:		DS04
			Sample Type:		SOIL
			Top Depth (m):		1.3
			Date Sampled:		20-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0
Chloromethane	M	2760	µg/kg	1.0	< 1.0
Vinyl Chloride	M	2760	µg/kg	1.0	< 1.0
Bromomethane	M	2760	µg/kg	20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethane	M	2760	µg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0
Trichloromethane	M	2760	µg/kg	1.0	< 1.0
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	< 1.0
Tetrachloromethane	M	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0
Benzene	M	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0
1,2-Dichloropropane	M	2760	µg/kg	1.0	< 1.0
Dibromomethane	M	2760	µg/kg	1.0	< 1.0
Bromodichloromethane	M	2760	µg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
Toluene	M	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
1,1,2-Trichloroethane	M	2760	µg/kg	10	< 10
Tetrachloroethene	M	2760	µg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10
1,2-Dibromoethane	M	2760	µg/kg	5.0	< 5.0
Chlorobenzene	M	2760	µg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	< 2.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0
Styrene	M	2760	µg/kg	1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452791
Order No.: D11866			Client Sample Ref.:		9
			Sample Location:		DS04
			Sample Type:		SOIL
			Top Depth (m):		1.3
			Date Sampled:		20-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Isopropylbenzene	M	2760	µg/kg	1.0	< 1.0
Bromobenzene	M	2760	µg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0
2-Chlorotoluene	M	2760	µg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0
Perfluorooctanoic Acid (PFOA) (Subcon)	SN		µg/kg	N/A	See Attached
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/kg	N/A	See Attached
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50
Phenol	M	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50
Isophorone	M	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452791
Order No.: D11866			Client Sample Ref.:		9
			Sample Location:		DS04
			Sample Type:		SOIL
			Top Depth (m):		1.3
			Date Sampled:		20-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Naphthalene	M	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	M	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50
Fluorene	M	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50
Anthracene	M	2790	mg/kg	0.50	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Fluoranthene	M	2790	mg/kg	0.50	< 0.50
Pyrene	M	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Airport Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23198
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452791
Order No.: D11866			Client Sample Ref.:		9
			Sample Location:		DS04
			Sample Type:		SOIL
			Top Depth (m):		1.3
			Date Sampled:		20-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Total Phenols	M	2920	mg/kg	0.10	< 0.10

Results - 2 Stage WAC

Project: D2027-22 Stansted Airport Terminal 2

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-23198								
Chemtest Sample ID:	1452791								
Sample Ref:	9								
Sample ID:							**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample Location:	DS04								
Top Depth(m):	1.3								
Bottom Depth(m):									
Sampling Date:	20-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			2.7	3	5	6
Loss On Ignition	2610	M	%			6.7	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	M				8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.033	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0012	0.0041	0.0023	0.037	0.5	2	25
Barium	1455	U	0.034	0.007	0.066	0.11	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0006	0.0093	0.0011	0.0008	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0020	0.0029	0.0038	0.028	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0008	0.0016	0.0016	0.015	0.5	10	50
Antimony	1455	U	0.0015	0.0010	0.0029	0.011	0.06	0.7	5
Selenium	1455	U	0.0012	0.0014	0.0023	0.013	0.1	0.5	7
Zinc	1455	U	< 0.003	0.011	< 0.003	0.092	4	50	200
Chloride	1220	U	3.0	2.5	< 10	26	800	15000	25000
Fluoride	1220	U	0.69	0.61	1.3	6.2	10	150	500
Sulphate	1220	U	480	36	940	1000	1000	20000	50000
Total Dissolved Solids	1020	N	560	210	1100	2600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	7.4	12	< 50	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	21

Leachate Test Information	
Leachant volume 1st extract/l	0.303
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.250

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Test Methods

SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 July 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220701-31
Your Reference:	22-23198
Location:	Not Specified
Report No:	653529
Order Number:	22399

We received 1 sample on Thursday June 30, 2022 and 1 of these samples were scheduled for analysis which was completed on Thursday July 07, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 220701-31 **Report Number:** 653529 **Superseded Report:**
Client Ref.: 22-23198 **Location:** Not Specified

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26519494	DS04	ES9	1.30	20/06/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 220701-31 **Report Number:** 653529 **Superseded Report:**
Client Ref.: 22-23198 **Location:** Not Specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26519494	DS04	ES9	1.30	250g Amber Jar (ALE210)	S
PFAS Solids	All	NDPs: 0 Tests: 1					X	
Sample description	All	NDPs: 0 Tests: 1					X	

CERTIFICATE OF ANALYSIS

SDG: 220701-31 **Report Number:** 653529 **Superseded Report:**
Client Ref.: 22-23198 **Location:** Not Specified

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26519494	DS04	1.30	Light Brown	Sandy Clay Loam	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220701-31 **Report Number:** 653529 **Superseded Report:**
Client Ref.: 22-23198 **Location:** Not Specified

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

		Customer Sample Ref.	DS04
		Depth (m)	1.30
		Sample Type	Soil/Solid (S)
		Date Sampled	20/06/2022
		Sample Time	00:00:00
		Date Received	30/06/2022
		SDG Ref	220701-31
		Lab Sample No.(s)	26519494
		AGS Reference	ES9
Component	**LOD/Units**	**Method**	
Moisture Content Ratio (% of as received sample)	%	PM024	16
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	<1
Branched PFOS	<1 µg/kg	TM338	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	<1 µg/kg	TM338	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	<1 µg/kg	TM338	<1
Total PFOS	<1 µg/kg	TM338	<1

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	PFAS In Solids	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220701-31 **Report Number:** 653529 **Superseded Report:**
Client Ref.: 22-23198 **Location:** Not Specified

Test Completion Dates

Lab Sample No(s)	26519494
Customer Sample Ref.	DS04
AGS Ref.	ES9
Depth	1.30
Type	Soil/Solid (S)
PFAS Solids	07-Jul-2022
Sample description	04-Jul-2022

SDG:	220701-31	**Report Number:**	653529	**Superseded Report:**	
Client Ref:	22-23198	**Location:**	Not Specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-23201-1		
Initial Date of Issue:	01-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	22-Jun-2022
Order No.:	D11866	**Date Instructed:**	23-Jun-2022
No. of Samples:	3		
Turnaround (Wkdays):	7	**Results Due:**	01-Jul-2022
Date Approved:	01-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-23201	22-23201
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1452805	1452809
Order No.: D11866					Client Sample Ref.:	ES2	ES12
					Sample Location:	TP11	TP11
					Sample Type:	SOIL	SOIL
					Top Depth (m):	0.30	2.00
					Date Sampled:	20-Jun-2022	20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
pH	U	1010	2:1		N/A	9.4	8.9
Chloride	U	1220	2:1	mg/l	1.0	8.8	6.5
Fluoride	U	1220	2:1	mg/l	0.050	1.2	0.76
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.28	0.13
Sulphate	U	1220	2:1	mg/l	1.0	77	60
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	37	48
Magnesium	U	1455	2:1	mg/l	0.20	0.62	3.5
Hardness as Ca	U	1415	2:1	mg/l	6	38	53
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0057	< 0.0002
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.08	0.02
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.021	0.012
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0029	< 0.0005
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0035	0.0013
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.028	0.0010
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0020	< 0.0005
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	0.004	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.025	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	0.97	< 0.10
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0	
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10	

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-23201	22-23201
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452805	1452809
Order No.: D11866				Client Sample Ref.:		ES2	ES12
				Sample Location:		TP11	TP11
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.30	2.00
				Date Sampled:		20-Jun-2022	20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10	
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10	
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	7.4	2.1
Benzene	U	1760	2:1	µg/l	1.0	< 1.0	
Toluene	U	1760	2:1	µg/l	1.0	< 1.0	
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0	
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0	
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0	
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0	
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-23201	22-23201
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1452805	1452809
Order No.: D11866					Client Sample Ref.:	ES2	ES12
					Sample Location:	TP11	TP11
					Sample Type:	SOIL	SOIL
					Top Depth (m):	0.30	2.00
					Date Sampled:	20-Jun-2022	20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-23201	22-23201	22-23201
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1452805	1452806	1452809
Order No.: D11866				Client Sample Ref.:	ES2	ES4	ES12
				Sample Location:	TP11	TP11	TP11
				Sample Type:	SOIL	SOIL	SOIL
				Top Depth (m):	0.30	0.50	2.00
				Date Sampled:	20-Jun-2022	20-Jun-2022	20-Jun-2022
				Asbestos Lab:		COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A		-	-
Asbestos Identification	U	2192		N/A		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	11		17
pH	U	2010		4.0	9.7		8.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.86		< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	280		86
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		< 0.50
Iron (Total)	N	2430	mg/kg	100	11000		12000
Sulphate (Total)	U	2430	%	0.010	0.26		0.059
Arsenic	U	2455	mg/kg	0.5	4.4		5.9
Barium	U	2455	mg/kg	0	84		22
Beryllium	U	2455	mg/kg	0.5	< 0.5		< 0.5
Cadmium	U	2455	mg/kg	0.10	0.20		0.12
Manganese	U	2455	mg/kg	1.0	250		240
Molybdenum	U	2455	mg/kg	0.5	< 0.5		< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0		< 2.0
Copper	U	2455	mg/kg	0.50	10		7.3
Mercury	U	2455	mg/kg	0.05	< 0.05		< 0.05
Nickel	U	2455	mg/kg	0.50	11		13
Lead	U	2455	mg/kg	0.50	17		5.9
Selenium	U	2455	mg/kg	0.25	< 0.25		0.27
Vanadium	U	2455	mg/kg	0.5	15		19
Zinc	U	2455	mg/kg	0.50	57		23
Chromium (Trivalent)	N	2490	mg/kg	1.0	10		11
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.015		0.029
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23201	22-23201	22-23201
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452805	1452806	1452809
Order No.: D11866			Client Sample Ref.:		ES2	ES4	ES12
			Sample Location:		TP11	TP11	TP11
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	2.00
			Date Sampled:		20-Jun-2022	20-Jun-2022	20-Jun-2022
			Asbestos Lab:			COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10		< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0		
Chloromethane	U	2760	µg/kg	1.0	< 1.0		
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0		
Bromomethane	U	2760	µg/kg	20	< 20		
Chloroethane	U	2760	µg/kg	2.0	< 2.0		
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0		
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0		
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0		
Trichloromethane	U	2760	µg/kg	1.0	< 1.0		
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0		
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0		
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0		
Benzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0		
Trichloroethene	N	2760	µg/kg	1.0	< 1.0		
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0		
Dibromomethane	U	2760	µg/kg	1.0	< 1.0		
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0		
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		
Toluene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10		
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10		
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	µg/kg	10	< 10		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23201	22-23201	22-23201
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452805	1452806	1452809
Order No.: D11866			Client Sample Ref.:		ES2	ES4	ES12
			Sample Location:		TP11	TP11	TP11
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	2.00
			Date Sampled:		20-Jun-2022	20-Jun-2022	20-Jun-2022
			Asbestos Lab:			COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0		
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0		
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0		
Tribromomethane	U	2760	µg/kg	1.0	< 1.0		
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0		
Bromobenzene	U	2760	µg/kg	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50		
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0		
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50		
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0		< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50		
Phenol	U	2790	mg/kg	0.50	< 0.50		
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23201	22-23201	22-23201
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452805	1452806	1452809
Order No.: D11866			Client Sample Ref.:		ES2	ES4	ES12
			Sample Location:		TP11	TP11	TP11
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	2.00
			Date Sampled:		20-Jun-2022	20-Jun-2022	20-Jun-2022
			Asbestos Lab:			COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		
Isophorone	U	2790	mg/kg	0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790	mg/kg	0.50	< 0.50		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23201	22-23201	22-23201
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452805	1452806	1452809
Order No.: D11866			Client Sample Ref.:		ES2	ES4	ES12
			Sample Location:		TP11	TP11	TP11
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		0.30	0.50	2.00
			Date Sampled:		20-Jun-2022	20-Jun-2022	20-Jun-2022
			Asbestos Lab:			COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Phenanthrene	U	2790	mg/kg	0.50	0.97		
Anthracene	U	2790	mg/kg	0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	1.8		
Pyrene	U	2790	mg/kg	0.50	1.4		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.76		
Chrysene	U	2790	mg/kg	0.50	0.79		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.0		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
Naphthalene	N	2800	mg/kg	0.010	0.032		< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.059		< 0.010
Acenaphthene	N	2800	mg/kg	0.010	0.13		< 0.010
Fluorene	N	2800	mg/kg	0.010	0.10		< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.82		< 0.010
Anthracene	N	2800	mg/kg	0.010	0.23		< 0.010
Fluoranthene	N	2800	mg/kg	0.010	2.3		< 0.010
Pyrene	N	2800	mg/kg	0.010	2.1		< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.97		< 0.010
Chrysene	N	2800	mg/kg	0.010	1.1		< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	1.4		< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.51		< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.3		< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	0.78		< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.10		< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	0.71		< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	13		< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10		< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-23204-1
Initial Date of Issue:	01-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22 - Stansted Terminal 2
Quotation No.:	Q22-27911
Order No.:	D11866
No. of Samples:	1
Turnaround (Wkdays):	7
Date Approved:	01-Jul-2022

Date Received:	22-Jun-2022
Date Instructed:	23-Jun-2022
Results Due:	01-Jul-2022

A[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23204
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452817
Order No.: D11866				Client Sample Ref.:		13
				Sample Location:		DS01
				Sample Type:		SOIL
				Top Depth (m):		2.00
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	8.9
Chloride	U	1220	2:1	mg/l	1.0	14
Fluoride	U	1220	2:1	mg/l	0.050	0.48
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	< 0.050
Sulphate	U	1220	2:1	mg/l	1.0	56
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	41
Magnesium	U	1455	2:1	mg/l	0.20	1.5
Hardness as Ca	U	1415	2:1	mg/l	6	44
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	< 0.0002
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.009
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0013
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	0.34
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23204
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452817
Order No.: D11866				Client Sample Ref.:		13
				Sample Location:		DS01
				Sample Type:		SOIL
				Top Depth (m):		2.00
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	< 2.0
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23204
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452817
Order No.: D11866			Client Sample Ref.:		13
			Sample Location:		DS01
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Moisture	N	2030	%	0.020	16
pH	U	2010		4.0	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	34
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	6100
Sulphate (Total)	U	2430	%	0.010	0.027
Arsenic	U	2455	mg/kg	0.5	2.3
Barium	U	2455	mg/kg	0	10
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10
Manganese	U	2455	mg/kg	1.0	160
Molybdenum	U	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	4.6
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	6.9
Lead	U	2455	mg/kg	0.50	3.8
Selenium	U	2455	mg/kg	0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	6.9
Zinc	U	2455	mg/kg	0.50	16
Chromium (Trivalent)	N	2490	mg/kg	1.0	4.7
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.032
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23204
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452817
Order No.: D11866			Client Sample Ref.:		13
			Sample Location:		DS01
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Test Methods

SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-23205-1
Initial Date of Issue:	01-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22 - Stansted Terminal 2
Quotation No.:	Q22-27911
Order No.:	D11866
No. of Samples:	2
Turnaround (Wkdays):	7
Date Approved:	01-Jul-2022
Approved By:	[redacted]
Details:	Stuart Henderson, Technical Manager

Date Received:	22-Jun-2022
Date Instructed:	23-Jun-2022
Results Due:	01-Jul-2022

Results - Leachate

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23205
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452821
Order No.: D11866				Client Sample Ref.:		ES4
				Sample Location:		DS02
				Sample Type:		SOIL
				Top Depth (m):		0.30
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	9.1
Chloride	U	1220	2:1	mg/l	1.0	3.1
Fluoride	U	1220	2:1	mg/l	0.050	1.1
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.064
Sulphate	U	1220	2:1	mg/l	1.0	8.1
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	18
Magnesium	U	1455	2:1	mg/l	0.20	0.62
Hardness as Ca	U	1415	2:1	mg/l	6	19
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0018
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.04
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.006
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0038
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0029
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.062
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0012
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0011
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	0.00090
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.70
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	0.48
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC				**Chemtest Job No.:**		22-23205
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1452821
Order No.: D11866				Client Sample Ref.:		ES4
				Sample Location:		DS02
				Sample Type:		SOIL
				Top Depth (m):		0.30
				Date Sampled:		20-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	6.8
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23205	22-23205
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452821	1452824
Order No.: D11866			Client Sample Ref.:		ES4	ES9
			Sample Location:		DS02	DS02
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		20-Jun-2022	20-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	9.2	15
pH	U	2010		4.0	8.8	7.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.44	0.44
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	11	30
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	14000
Sulphate (Total)	U	2430	%	0.010	0.060	0.036
Arsenic	U	2455	mg/kg	0.5	4.4	4.9
Barium	U	2455	mg/kg	0	24	27
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10	0.11
Manganese	U	2455	mg/kg	1.0	220	350
Molybdenum	U	2455	mg/kg	0.5	< 0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	11	9.2
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	14	16
Lead	U	2455	mg/kg	0.50	6.8	8.2
Selenium	U	2455	mg/kg	0.25	0.27	0.38
Vanadium	U	2455	mg/kg	0.5	19	22
Zinc	U	2455	mg/kg	0.50	30	27
Chromium (Trivalent)	N	2490	mg/kg	1.0	12	14
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.014	0.0031
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22 - Stansted Terminal 2

Client: SOCOTEC			**Chemtest Job No.:**		22-23205	22-23205
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1452821	1452824
Order No.: D11866			Client Sample Ref.:		ES4	ES9
			Sample Location:		DS02	DS02
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		20-Jun-2022	20-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-23262-1
Initial Date of Issue:	30-Jun-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	22-Jun-2022
Order No.:	D11866	**Date Instructed:**	22-Jun-2022
No. of Samples:	2		
Turnaround (Wkdays):	7	**Results Due:**	30-Jun-2022
Date Approved:	30-Jun-2022	**Subcon Results Due:**	13-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	8.8	15
pH	U	2010		4.0	10.1	11.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.57	0.52
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	54	330
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	9300	9600
Sulphate (Total)	U	2430	%	0.010	0.030	0.17
Arsenic	U	2455	mg/kg	0.5	4.9	6.1
Barium	U	2455	mg/kg	0	27	42
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.12	0.18
Manganese	U	2455	mg/kg	1.0	240	340
Molybdenum	U	2455	mg/kg	0.5	< 0.5	0.7
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	14	17
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	13	15
Lead	U	2455	mg/kg	0.50	8.8	13
Selenium	U	2455	mg/kg	0.25	0.42	0.54
Vanadium	U	2455	mg/kg	0.5	25	30
Zinc	U	2455	mg/kg	0.50	33	51
Chromium (Trivalent)	N	2490	mg/kg	1.0	12	15
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0083	0.011
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	220	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	220	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	7.8	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	7.8	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	220	
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010	
Chloromethane	U	2760	mg/kg	0.0010	< 0.0010	
Vinyl Chloride	U	2760	mg/kg	0.0010	< 0.0010	
Bromomethane	U	2760	mg/kg	0.020	< 0.020	
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Trichlorofluoromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethane	U	2760	mg/kg	0.0010	< 0.0010	
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050	
Trichloromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010	< 0.0010	
Tetrachloromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010	
Benzene	U	2760	mg/kg	0.0010	< 0.0010	
Benzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dichloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichloropropane	U	2760	mg/kg	0.0010	< 0.0010	
Dibromomethane	U	2760	mg/kg	0.0010	< 0.0010	
Bromodichloromethane	U	2760	mg/kg	0.0050	< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
Toluene	U	2760	mg/kg	0.0010	< 0.0010	
Toluene	U	2760	µg/kg	1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
1,1,2-Trichloroethane	U	2760	mg/kg	0.010	< 0.010	
Tetrachloroethene	U	2760	mg/kg	0.0010	< 0.0010	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010	
1,2-Dibromoethane	U	2760	mg/kg	0.0050	< 0.0050	
Chlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Ethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	
m & p-Xylene	U	2760	mg/kg	0.0010	< 0.0010	
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	
o-Xylene	U	2760	mg/kg	0.0010	< 0.0010	
o-Xylene	U	2760	µg/kg	1.0	< 1.0	
Styrene	U	2760	mg/kg	0.0010	< 0.0010	
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010	
Isopropylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Bromobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050	
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
2-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010	
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010	
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010	
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020	
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010	< 0.0010	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050	
Phenol	N	2790	mg/kg	0.050	< 0.050	
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050	
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050	
Isophorone	N	2790	mg/kg	0.050	< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2790	mg/kg	0.050	< 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050	
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Acenaphthene	N	2790	mg/kg	0.050	< 0.050	
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Fluorene	N	2790	mg/kg	0.050	< 0.050	
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050	
Azobenzene	N	2790	mg/kg	0.050	< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050	
Phenanthrene	N	2790	mg/kg	0.050	< 0.050	
Anthracene	N	2790	mg/kg	0.050	< 0.050	
Carbazole	N	2790	mg/kg	0.050	< 0.050	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Fluoranthene	N	2790	mg/kg	0.050	< 0.050	
Pyrene	N	2790	mg/kg	0.050	< 0.050	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050	
Chrysene	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050	
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050	
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	0.35
Anthracene	N	2800	mg/kg	0.010	< 0.010	0.096
Fluoranthene	N	2800	mg/kg	0.010	< 0.010	1.0
Pyrene	N	2800	mg/kg	0.010	< 0.010	0.97
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	0.47
Chrysene	N	2800	mg/kg	0.010	< 0.010	0.43
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	0.70
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	0.25
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	0.60
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23262	22-23262
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453096	1453098
Order No.: D11866			Client Sample Ref.:		1	6
			Sample Location:		CP01	CP01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.10	0.80
			Date Sampled:		16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20	4.9
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-23270-1		
Initial Date of Issue:	29-Jun-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	22-Jun-2022
Order No.:	D11866	**Date Instructed:**	22-Jun-2022
No. of Samples:	4		
Turnaround (Wkdays):	7	**Results Due:**	30-Jun-2022
Date Approved:	29-Jun-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23270	22-23270	22-23270	22-23270
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453144	1453147	1453149	1453152
Order No.: D11866			Client Sample Ref.:		1	9	1	9
			Sample Location:		TP10	TP10	TP09	TP09
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.05	1.3	0.1	1
			Date Sampled:		16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-		-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	5.7	11	12	11
pH	U	2010		4.0	11.5	10.3	11.1	9.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.42	0.46	0.49	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	200	44	380	77
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	10000	12000	8900	10000
Sulphate (Total)	U	2430	%	0.010	0.21	0.041	0.22	0.016
Arsenic	U	2455	mg/kg	0.5	6.9	6.5	6.7	6.5
Barium	U	2455	mg/kg	0	51	39	38	26
Beryllium	U	2455	mg/kg	0.5	< 0.5	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.15	0.13	0.14	< 0.10
Manganese	U	2455	mg/kg	1.0	310	290	280	200
Molybdenum	U	2455	mg/kg	0.5	0.7	0.6	0.6	0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	17	17	17	8.8
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	16	19	13	16
Lead	U	2455	mg/kg	0.50	12	11	11	7.0
Selenium	U	2455	mg/kg	0.25	0.45	0.56	0.46	0.37
Vanadium	U	2455	mg/kg	0.5	26	31	24	21
Zinc	U	2455	mg/kg	0.50	48	44	44	33
Chromium (Trivalent)	N	2490	mg/kg	1.0	14	17	12	13
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.013	0.0046	0.011	0.0029
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	210		190	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	210		190	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		< 1.0	

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23270	22-23270	22-23270	22-23270
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453144	1453147	1453149	1453152
Order No.: D11866			Client Sample Ref.:		1	9	1	9
			Sample Location:		TP10	TP10	TP09	TP09
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.05	1.3	0.1	1
			Date Sampled:		16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	230		55	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	230		55	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	450		250	
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Chloromethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Vinyl Chloride	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Bromomethane	U	2760	mg/kg	0.020	< 0.020		< 0.020	
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020		< 0.0020	
Trichlorofluoromethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,1-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,1-Dichloroethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050		< 0.0050	
Trichloromethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Tetrachloromethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Benzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Benzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	
1,2-Dichloroethane	U	2760	mg/kg	0.0020	< 0.0020		< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2-Dichloropropane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Dibromomethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Bromodichloromethane	U	2760	mg/kg	0.0050	< 0.0050		< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010		< 0.010	
Toluene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Toluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010		< 0.010	
1,1,2-Trichloroethane	U	2760	mg/kg	0.010	< 0.010		< 0.010	
Tetrachloroethene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23270	22-23270	22-23270	22-23270
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453144	1453147	1453149	1453152
Order No.: D11866			Client Sample Ref.:		1	9	1	9
			Sample Location:		TP10	TP10	TP09	TP09
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.05	1.3	0.1	1
			Date Sampled:		16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020		< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010		< 0.010	
1,2-Dibromoethane	U	2760	mg/kg	0.0050	< 0.0050		< 0.0050	
Chlorobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020	< 0.0020		< 0.0020	
Ethylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	
m & p-Xylene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	
o-Xylene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
o-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	
Styrene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Isopropylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Bromobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050		< 0.050	
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
2-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050		< 0.050	
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020		< 0.0020	
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010	< 0.0010		< 0.0010	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0		< 1.0	
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Phenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23270	22-23270	22-23270	22-23270
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453144	1453147	1453149	1453152
Order No.: D11866			Client Sample Ref.:		1	9	1	9
			Sample Location:		TP10	TP10	TP09	TP09
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.05	1.3	0.1	1
			Date Sampled:		16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050		< 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050		< 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Isophorone	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Naphthalene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Acenaphthene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050		< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Fluorene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050		< 0.050	

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-23270	22-23270	22-23270	22-23270
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453144	1453147	1453149	1453152
Order No.: D11866			Client Sample Ref.:		1	9	1	9
			Sample Location:		TP10	TP10	TP09	TP09
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.05	1.3	0.1	1
			Date Sampled:		16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
			Asbestos Lab:		COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Azobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Phenanthrene	N	2790	mg/kg	0.050	0.41		0.23	
Anthracene	N	2790	mg/kg	0.050	0.13		0.091	
Carbazole	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050		0.10	
Fluoranthene	N	2790	mg/kg	0.050	0.97		1.0	
Pyrene	N	2790	mg/kg	0.050	0.83		0.94	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050	0.48		0.64	
Chrysene	N	2790	mg/kg	0.050	0.57		0.69	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	0.94		1.1	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	0.23		0.35	
Benzo[a]pyrene	N	2790	mg/kg	0.050	0.18		0.27	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	0.34		0.50	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	0.45		0.63	
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050		< 0.050	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.30	< 0.010	0.29	< 0.010
Anthracene	N	2800	mg/kg	0.010	0.051	< 0.010	0.073	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.76	< 0.010	1.1	< 0.010
Pyrene	N	2800	mg/kg	0.010	0.72	< 0.010	0.94	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.33	< 0.010	0.47	< 0.010
Chrysene	N	2800	mg/kg	0.010	0.37	< 0.010	0.46	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	0.65	< 0.010	0.77	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.22	< 0.010	0.30	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	0.46	< 0.010	0.61	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	0.44	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-23270	22-23270	22-23270
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1453144	1453147	1453149	1453152
Order No.: D11866					Client Sample Ref.:	1	9	1	9
					Sample Location:	TP10	TP10	TP09	TP09
					Sample Type:	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.05	1.3	0.1	1
					Date Sampled:	16-Jun-2022	16-Jun-2022	16-Jun-2022	16-Jun-2022
					Asbestos Lab:	COVENTRY		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	0.083	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	0.46	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	3.9	< 0.20	6.0	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	0.27	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-23333-3		
Initial Date of Issue:	01-Jul-2022	**Date of Re-Issue:**	01-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	Stansted Airport D2027-22, Stansted Terminal 2 (ST2)		
Quotation No.:	Q22-27911	**Date Received:**	22-Jun-2022
Order No.:	D11866	**Date Instructed:**	22-Jun-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	30-Jun-2022
Date Approved:	01-Jul-2022	**Subcon Results Due:**	13-Jul-2022

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC				**Chemtest Job No.:**		22-23333
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1453383
Order No.: D11866				Client Sample Ref.:		3
				Sample Location:		DS01
				Sample Type:		SOIL
				Top Depth (m):		0.15
				Date Sampled:		16-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	8.4
Chloride	U	1220	2:1	mg/l	1.0	9.8
Fluoride	U	1220	2:1	mg/l	0.050	0.51
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	< 0.050
Sulphate	U	1220	2:1	mg/l	1.0	50
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	31
Magnesium	U	1455	2:1	mg/l	0.20	1.4
Hardness as Ca	U	1415	2:1	mg/l	6	33
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	< 0.0002
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.006
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0024
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0021
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.007
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	23
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC				**Chemtest Job No.:**		22-23333
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1453383
Order No.: D11866				Client Sample Ref.:		3
				Sample Location:		DS01
				Sample Type:		SOIL
				Top Depth (m):		0.15
				Date Sampled:		16-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	3.6
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC			**Chemtest Job No.:**		22-23333
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453383
Order No.: D11866			Client Sample Ref.:		3
			Sample Location:		DS01
			Sample Type:		SOIL
			Top Depth (m):		0.15
			Date Sampled:		16-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	7.4
pH	U	2010		4.0	8.1
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.53
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	95
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	8200
Sulphate (Total)	U	2430	%	0.010	0.044
Arsenic	U	2455	mg/kg	0.5	3.0
Barium	U	2455	mg/kg	0	17
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10
Manganese	U	2455	mg/kg	1.0	200
Molybdenum	U	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	6.1
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	9.6
Lead	U	2455	mg/kg	0.50	5.6
Selenium	U	2455	mg/kg	0.25	0.33
Vanadium	U	2455	mg/kg	0.5	10
Zinc	U	2455	mg/kg	0.50	22
Chromium (Trivalent)	N	2490	mg/kg	1.0	7.2
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0034
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC			**Chemtest Job No.:**		22-23333
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1453383
Order No.: D11866			Client Sample Ref.:		3
			Sample Location:		DS01
			Sample Type:		SOIL
			Top Depth (m):		0.15
			Date Sampled:		16-Jun-2022
			Asbestos Lab:		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.20
Pyrene	N	2800	mg/kg	0.010	0.29
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.15
Chrysene	N	2800	mg/kg	0.010	0.12
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	0.76
Total Phenols	U	2920	mg/kg	0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	29 June 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220623-177
Your Reference:	22-23333
Location:	Not specified
Report No:	652447
Order Number:	22-23333

We received 1 sample on Thursday June 16, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday June 29, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 220623-177 **Report Number:** 652447 **Superseded Report:**
Client Ref.: 22-23333 **Location:** Not specified

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26480216	1453383			16/06/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 220623-177 **Report Number:** 652447 **Superseded Report:**
Client Ref.: 22-23333 **Location:** Not specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26480216	1453383			400g Tub (ALE214)	S
PFAS Solids	All	NDPs: 0 Tests: 1						X
Sample description	All	NDPs: 0 Tests: 1						X

CERTIFICATE OF ANALYSIS

SDG: 220623-177 **Report Number:** 652447 **Superseded Report:**
Client Ref.: 22-23333 **Location:** Not specified

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26480216	1453383		Light Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 220623-177 **Report Number:** 652447 **Superseded Report:**
Client Ref.: 22-23333 **Location:** Not specified

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	1453383
Depth (m)	.
Sample Type	Soil/Solid (S)
Date Sampled	16/06/2022
Sample Time	.
Date Received	16/06/2022
SDG Ref	220623-177
Lab Sample No.(s)	26480216
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	9.8
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	<1 µg/kg	TM338	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM338	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM338	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	<1
Branched PFOS	<1 µg/kg	TM338	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	<1 µg/kg	TM338	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	<1 µg/kg	TM338	<1
Total PFOS	<1 µg/kg	TM338	<1

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	PFAS In Solids	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220623-177 **Report Number:** 652447 **Superseded Report:**
Client Ref.: 22-23333 **Location:** Not specified

Test Completion Dates

Lab Sample No(s)	26480216
Customer Sample Ref.	1453383
AGS Ref.	
Depth	
Type	Soil/Solid (S)
PFAS Solids	29-Jun-2022
Sample description	24-Jun-2022

SDG:	220623-177	**Report Number:**	652447	**Superseded Report:**	
Client Ref:	22-23333	**Location:**	Not specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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UKAS TESTING
2183

Amended Report

Report No.:	22-24106-3		
Initial Date of Issue:	27-Jul-2022	**Date of Re-Issue:**	27-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	10		
Turnaround (Wkdays):	7	**Results Due:**	06-Jul-2022
Date Approved:	26-Jul-2022	**Subcon Results Due:**	19-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1456477	1456483	1456487	1456493	1456497
Order No.: D11866					Client Sample Ref.:	2	23	8	3	1
					Sample Location:	DS05	DS05	DS06	DS16	RC02
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	4	1	0.3	0.1
					Date Sampled:	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
pH	U	1010	2:1		N/A	8.6	8.7	8.3		
Chloride	U	1220	2:1	mg/l	1.0	21	14	7.9		
Fluoride	U	1220	2:1	mg/l	0.050	0.31	1.0	0.36		
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.20	0.35	0.73		
Sulphate	U	1220	2:1	mg/l	1.0	22	67	40		
Cyanide (Total)	U	1300	2:1	mg/l	0.050	0.050	< 0.050	< 0.050		
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050	< 0.050		
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	0.050	< 0.050			
Calcium	U	1455	2:1	mg/l	2.00	200	26	14		
Magnesium	U	1455	2:1	mg/l	0.20	< 0.20	0.35	< 0.20		
Hardness as Ca	U	1415	2:1	mg/l	6	200	26	14		
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0038	0.0039			
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01	< 0.01	0.01		
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.34	0.009			
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001	< 0.001			
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	0.00093	0.00090			
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.020	0.0025			
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0035	0.0043			
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.017	0.021			
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0087	0.0077			
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0037	0.0019			
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0031	0.0027			
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005			
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	0.023	0.004			
Mercury Low Level	U	1460	2:1	mg/l	0.000010	0.00007	< 0.00001	< 0.00001		
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.075	0.091			
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	9.3	8.5	1.0		
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	22	6			
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0			< 5.0	< 5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC						**Chemtest Job No.:**	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911						**Chemtest Sample ID.:**	1456477	1456483	1456487	1456493	1456497
Order No.: D11866						Client Sample Ref.:	2	23	8	3	1
						Sample Location:	DS05	DS05	DS06	DS16	RC02
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	0.3	4	1	0.3	0.1
						Date Sampled:	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**						
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10			< 0.10	< 0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0			< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10			< 10	< 10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	7.5	5.4	22		
Benzene	U	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0			< 1.0	< 1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	10	< 0.010	< 0.010		
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	< 0.010		
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010			
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	10	< 0.20			
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050		
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030	< 0.030		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				Chemtest Job No.:	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911				Chemtest Sample ID.:	1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866				Client Sample Ref.:	2	8	23	8	15	22	3	1	4	12
				Sample Location:	DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
				Date Sampled:	22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
				Asbestos Lab:	NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A	-						-	-		-
Asbestos Identification	U	2192		N/A	No Asbestos Detected						No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	4.5	12	16	19	12	15	4.6	4.0	9.3	14
pH	U	2010		4.0	8.0	8.1	8.9	9.0	9.6	9.7	8.5	8.6	8.3	9.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.80	0.74	< 0.40	1.6	0.86	0.90	0.90	0.84	0.93	1.1
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	430	350	100	240	20	30	30	240	750	60
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	7100	7600	6200	7700	8100	10000	9400	7700	8100	8200
Sulphate (Total)	U	2430	%	0.010	0.24	0.15	0.030	0.16	0.14	0.11	0.15	0.33	0.26	0.14
Arsenic	U	2455	mg/kg	0.5	5.3	5.1	3.4	4.6	3.8	6.3	8.3	5.6	5.4	4.8
Barium	U	2455	mg/kg	0	100	38	18	41	24	45	80	32	60	25
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	0.7
Cadmium	U	2455	mg/kg	0.10	0.21	0.13	0.11	0.27	0.11	0.15	0.26	0.31	0.19	0.37
Manganese	U	2455	mg/kg	1.0	190	230	240	200	230	300	280	220	180	250
Molybdenum	U	2455	mg/kg	0.5	0.9	0.5	< 0.5	< 0.5	< 0.5	0.7	0.8	0.5	0.6	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	14	10	7.3	21	7.6	27	40	17	11	8.7
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	12	12	10	12	11	13	17	12	11	13
Lead	U	2455	mg/kg	0.50	27	13	6.3	17	9.1	15	37	20	19	9.9
Selenium	U	2455	mg/kg	0.25	< 0.25	0.33	0.30	0.27	0.25	0.45	0.75	0.32	0.31	0.54
Vanadium	U	2455	mg/kg	0.5	20	17	12	18	13	22	33	17	20	17
Zinc	U	2455	mg/kg	0.50	55	35	25	52	25	48	100	45	39	29
Chromium (Trivalent)	N	2490	mg/kg	1.0	13	9.8	8.7	11	9.2	13	17	11	12	11
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.020	0.0060	0.0070	0.0090	0.0029	0.0082	0.023	0.012	0.015	0.0046
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	6.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	8.0	4.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	66	170	180	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	8.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	99	180	180	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	21	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866			Client Sample Ref.:		2	8	23	8	15	22	3	1	4	12
			Sample Location:		DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
			Date Sampled:		22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
			Asbestos Lab:		NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	7.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	3.1	33	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	19	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	410	180	< 1.0	< 1.0	1300	< 1.0	120	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	13	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	460	180	< 5.0	< 5.0	1300	21	140	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	100	640	360	< 10	< 10	1300	21	140	
Dichlorodifluoromethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Chloromethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Vinyl Chloride	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Bromomethane	U	2760	mg/kg	0.020							< 0.020	< 0.020	< 0.020	
Chloroethane	U	2760	mg/kg	0.0020							< 0.0020	< 0.0020	< 0.0020	
Trichlorofluoromethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,1-Dichloroethene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,1-Dichloroethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050							< 0.0050	< 0.0050	< 0.0050	
Trichloromethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Tetrachloromethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Benzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichloroethane	U	2760	mg/kg	0.0020							< 0.0020	< 0.0020	< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,2-Dichloropropane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Dibromomethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Bromodichloromethane	U	2760	mg/kg	0.0050							< 0.0050	< 0.0050	< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010							< 0.010	< 0.010	< 0.010	
Toluene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010							< 0.010	< 0.010	< 0.010	
1,1,2-Trichloroethane	U	2760	mg/kg	0.010							< 0.010	< 0.010	< 0.010	
Tetrachloroethene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,3-Dichloropropane	U	2760	mg/kg	0.0020							< 0.0020	< 0.0020	< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010							< 0.010	< 0.010	< 0.010	
1,2-Dibromoethane	U	2760	mg/kg	0.0050							< 0.0050	< 0.0050	< 0.0050	
Chlorobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020							< 0.0020	< 0.0020	< 0.0020	
Ethylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					Chemtest Job No.:	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911					Chemtest Sample ID.:	1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866					Client Sample Ref.:	2	8	23	8	15	22	3	1	4	12
					Sample Location:	DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
					Date Sampled:	22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
					Asbestos Lab:	NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
m & p-Xylene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
o-Xylene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Styrene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Tribromomethane	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Isopropylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Bromobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,2,3-Trichloropropane	N	2760	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
N-Propylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
2-Chlorotoluene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
4-Chlorotoluene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Tert-Butylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Sec-Butylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
4-Isopropyltoluene	N	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
N-Butylbenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Hexachlorobutadiene	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020							< 0.0020	< 0.0020	< 0.0020		
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010							< 0.0010	< 0.0010	< 0.0010		
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
N-Nitrosodimethylamine	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
Phenol	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
2-Chlorophenol	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
1,3-Dichlorobenzene	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
1,4-Dichlorobenzene	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
1,2-Dichlorobenzene	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
2-Methylphenol	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
Hexachloroethane	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		
4-Methylphenol	N	2790	mg/kg	0.050							< 0.050	< 0.050	< 0.050		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					Chemtest Job No.:	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911					Chemtest Sample ID.:	1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866					Client Sample Ref.:	2	8	23	8	15	22	3	1	4	12
					Sample Location:	DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
					Date Sampled:	22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
					Asbestos Lab:	NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Nitrobenzene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Isophorone	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Naphthalene	N	2790	mg/kg	0.050								< 0.050	0.063	0.066	
4-Chloroaniline	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050								< 0.050	< 0.050	0.066	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050								< 0.050	< 0.050	0.088	
Dimethylphthalate	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Acenaphthene	N	2790	mg/kg	0.050								< 0.050	0.17	0.32	
3-Nitroaniline	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050								< 0.050	0.083	0.12	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Fluorene	N	2790	mg/kg	0.050								< 0.050	0.13	0.15	
Diethyl Phthalate	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Azobenzene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Phenanthrene	N	2790	mg/kg	0.050								0.23	1.1	2.5	
Anthracene	N	2790	mg/kg	0.050								0.073	0.47	1.2	
Carbazole	N	2790	mg/kg	0.050								< 0.050	0.10	0.13	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050								0.084	< 0.050	< 0.050	
Fluoranthene	N	2790	mg/kg	0.050								0.47	3.3	10	
Pyrene	N	2790	mg/kg	0.050								0.42	3.0	8.6	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					Chemtest Job No.:	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911					Chemtest Sample ID.:	1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866					Client Sample Ref.:	2	8	23	8	15	22	3	1	4	12
					Sample Location:	DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
					Date Sampled:	22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
					Asbestos Lab:	NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**											
Benzo[a]anthracene	N	2790	mg/kg	0.050								0.25	1.7	4.4	
Chrysene	N	2790	mg/kg	0.050								0.25	1.4	3.8	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050								0.11	0.10	0.088	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050								41	1.9	4.7	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050								0.13	0.69	1.7	
Benzo[a]pyrene	N	2790	mg/kg	0.050								0.37	1.7	4.1	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050								0.21	0.83	2.0	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050								< 0.050	0.23	< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050								0.29	0.89	2.1	
4-Nitrophenol	N	2790	mg/kg	0.050								< 0.050	< 0.050	< 0.050	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	0.16	0.12	0.13	0.19	< 0.010	0.23	< 0.010	
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	0.088	0.11	0.11	0.076	< 0.010	0.15	< 0.010	
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	0.48	0.38	0.80	0.23	< 0.010	0.30	< 0.010	
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	0.51	0.35	0.81	0.21	< 0.010	0.30	< 0.010	
Phenanthrene	N	2800	mg/kg	0.010	0.27	0.74	3.4	2.9	3.3	7.9	2.4	0.39	3.7	0.74	
Anthracene	N	2800	mg/kg	0.010	0.10	0.19	0.72	0.78	0.86	1.6	0.79	0.11	1.3	0.22	
Fluoranthene	N	2800	mg/kg	0.010	0.69	1.3	5.0	4.8	8.7	11	4.5	1.3	15	1.6	
Pyrene	N	2800	mg/kg	0.010	0.74	1.2	3.9	3.8	7.6	8.9	4.0	1.2	12	1.4	
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	0.59	1.6	1.7	3.6	3.5	2.0	0.67	6.0	0.65	
Chrysene	N	2800	mg/kg	0.010	< 0.010	0.58	1.4	1.4	3.8	3.6	1.6	0.58	5.5	0.56	
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	0.54	1.9	2.3	6.5	4.4	3.1	1.2	7.0	1.0	
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	0.16	0.67	0.86	2.2	1.7	1.3	0.41	2.6	0.48	
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	0.51	1.5	2.0	6.3	4.4	3.0	1.1	6.5	1.0	
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	4.6	3.1	2.2	< 0.010	4.5	< 0.010	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.47	0.26	0.27	< 0.010	0.62	< 0.010	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	3.8	2.0	1.7	< 0.010	3.4	< 0.010	
Total Of 16 PAH's	N	2800	mg/kg	0.20	1.8	5.8	20	22	53	54	28	7.0	69	7.7	
PCB 81	N	2815	mg/kg	0.010							< 0.010				
PCB 77	U	2815	mg/kg	0.010							< 0.010				
PCB 105	N	2815	mg/kg	0.010							< 0.010				
PCB 114	N	2815	mg/kg	0.010							< 0.010				
PCB 118	N	2815	mg/kg	0.010							< 0.010				
PCB 123	N	2815	mg/kg	0.010							< 0.010				
PCB 126	N	2815	mg/kg	0.010							< 0.010				
PCB 156	N	2815	mg/kg	0.010							< 0.010				
PCB 157	N	2815	mg/kg	0.010							< 0.010				
PCB 167	N	2815	mg/kg	0.010							< 0.010				
PCB 169	N	2815	mg/kg	0.010							< 0.010				
PCB 189	N	2815	mg/kg	0.010							< 0.010				

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106	22-24106
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456477	1456479	1456483	1456487	1456489	1456491	1456493	1456497	1456499	1456501
Order No.: D11866			Client Sample Ref.:		2	8	23	8	15	22	3	1	4	12
			Sample Location:		DS05	DS05	DS05	DS06	DS06	DS06	DS16	RC02	RC02	RC02
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1	4	1	2	4.2	0.3	0.1	0.5	1.5
			Date Sampled:		22-Jun-2022	22-Jun-2022	22-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022	23-Jun-2022
			Asbestos Lab:		NEW-ASB						NEW-ASB	NEW-ASB		NEW-ASB
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12							< 0.12			
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10	0.12	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached			See Attached			See Attached	See Attached		

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Omegam

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22408
Our reference	:	Project 1378618
Validation Ref.	:	1378618_certificaat_v1
Verificationcode	:	TPXG-ZWKK-FNPG-UMMA
Enclosure(s)	:	5 table(s) + 2 supplement(s)

Amsterdam, 26 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243776 = 1456477
7243777 = 1456487
7243778 = 1456493

Client sampling date	:	**22/06/2022**	**22/06/2022**	**23/06/2022**
Date of receipt	:	**04/07/2022**	**04/07/2022**	**04/07/2022**
Startdate	:	**06/07/2022**	**06/07/2022**	**06/07/2022**
Reference number	:	**7243776**	**7243777**	**7243778**
Your Matrix	:	**Soil**	**Soil**	**Soil**

Sample preparation					
S	AS3000 (steekmonster)		**done**	**done**	**done**
	cryogenic grinding		**grinded**		
S	sample preparation		**done**	**done**	**done**
General analysis - physics					
S	dry weight	%	**93,9**	**93,6**	**95,6**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code : **1378618**
Your Project Description : **22408**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7243776 = 1456477
7243777 = 1456487
7243778 = 1456493

Client sampling date	:	**22/06/2022**	**22/06/2022**	**23/06/2022**
Date of receipt	:	**04/07/2022**	**04/07/2022**	**04/07/2022**
Startdate	:	**06/07/2022**	**06/07/2022**	**06/07/2022**
Reference number	:	**7243776**	**7243777**	**7243778**
Your Matrix	:	**Soil**	**Soil**	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:					
Q	PFBA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated sulfonic acids:					
Q	PFBS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**	**< 0,1**	**0,1**
Q	PFHpS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOS linear	µg/kg dw	**< 0,1**	**0,1**	**0,5**
Q	PFOS branched	µg/kg dw	**< 0,1**	**< 0,1**	**0,1**
Q	PFDS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - precursors:					
Q	4:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**0,1**
Q	8:2 FTS	µg/kg dw	**0,1**	**< 0,1**	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - remainder:					
	HPFHpA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**	**< 1**	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**	**0,1**	**0,1**
	sum PFOS	µg/kg dw	**0,1**	**0,2**	**0,6**

CERTIFICATE

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243779 = 1456497

Client sampling date	:	**23/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243779**
Your Matrix	:	**Soil**

Sample preparation

S	AS3000 (steekmonster) cryogenic grinding		**done**
S	sample preparation		**done**

General analysis - physics

S	dry weight	%	**95,6**

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- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243779 = 1456497

Client sampling date	:	**23/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243779**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**0,1**
Q	PFPeA	µg/kg dw	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,2**
Q	PFOS branched	µg/kg dw	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**
	sum PFOS	µg/kg dw	**0,3**

C E R T I F I C A T E

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378618**
Your Project Description	:	**22408**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-24108-1
Initial Date of Issue:	04-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	4		
Turnaround (Wkdays):	7	**Results Due:**	06-Jul-2022
Date Approved:	04-Jul-2022		

Ap [redacted]

Details: Stuart Henderson, Technical Manager

Results - 2 Stage WAC

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24108								
Chemtest Sample ID:	1456506								
Sample Ref:	8						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	DS05								
Top Depth(m):	1								
Bottom Depth(m):									
Sampling Date:	22-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			0.90	3	5	6
Loss On Ignition	2610	M	%			1.6	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			71	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			2.9	100	--	--
pH	2010	M				8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.043	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0058	0.0049	0.012	0.050	0.5	2	25
Barium	1455	U	0.030	0.011	0.059	0.13	20	100	300
Cadmium	1455	U	0.00017	< 0.00011	0.00034	0.00014	0.04	1	5
Chromium	1455	U	0.0007	< 0.0005	0.0014	0.0006	0.5	10	70
Copper	1455	U	0.018	0.0053	0.036	0.015	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.017	0.0033	0.033	0.044	0.5	10	30
Nickel	1455	U	0.0046	< 0.0005	0.0092	0.0038	0.4	10	40
Lead	1455	U	0.017	0.015	0.034	0.16	0.5	10	50
Antimony	1455	U	0.0018	0.0011	0.0036	0.012	0.06	0.7	5
Selenium	1455	U	0.051	0.014	0.10	0.17	0.1	0.5	7
Zinc	1455	U	0.089	0.014	0.18	0.20	4	50	200
Chloride	1220	U	18	20	36	200	800	15000	25000
Fluoride	1220	U	1.4	1.2	2.8	12	10	150	500
Sulphate	1220	U	130	60	260	660	1000	20000	50000
Total Dissolved Solids	1020	N	250	160	500	1700	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	14	5.0	< 50	57	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.328
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.142

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24108								
Chemtest Sample ID:	1456507								
Sample Ref:	8						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	DS06								
Top Depth(m):	1								
Bottom Depth(m):									
Sampling Date:	23-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			0.90	3	5	6
Loss On Ignition	2610	M	%			2.1	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			65	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			15	100	--	--
pH	2010	M				8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.029	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0076	0.0079	0.015	0.079	0.5	2	25
Barium	1455	U	0.047	0.046	0.093	0.46	20	100	300
Cadmium	1455	U	0.00016	0.00079	0.00031	0.0071	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.022	0.0076	0.043	0.026	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.011	0.0025	0.022	0.035	0.5	10	30
Nickel	1455	U	0.0033	< 0.0005	0.0065	0.0040	0.4	10	40
Lead	1455	U	0.14	0.081	0.28	0.88	0.5	10	50
Antimony	1455	U	0.0049	0.0025	0.0097	0.028	0.06	0.7	5
Selenium	1455	U	0.018	0.0053	0.036	0.069	0.1	0.5	7
Zinc	1455	U	0.071	0.16	0.14	1.5	4	50	200
Chloride	1220	U	42	110	83	970	800	15000	25000
Fluoride	1220	U	1.0	0.73	2.0	7.6	10	150	500
Sulphate	1220	U	130	42	260	530	1000	20000	50000
Total Dissolved Solids	1020	N	230	230	450	2300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	18	8.0	< 50	93	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information	
Leachant volume 1st extract/l	0.329
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.214

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24108								
Chemtest Sample ID:	1456508								
Sample Ref:	3						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	DS16								
Top Depth(m):	0.3								
Bottom Depth(m):									
Sampling Date:	23-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			2.1	3	5	6
Loss On Ignition	2610	M	%			4.4	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			980	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			7.1	100	--	--
pH	2010	M				8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.024	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0083	0.0061	0.017	0.063	0.5	2	25
Barium	1455	U	0.043	0.031	0.086	0.32	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0028	< 0.0005	0.0056	0.0030	0.5	10	70
Copper	1455	U	0.019	0.0053	0.037	0.020	2	50	100
Mercury	1455	U	0.00010	< 0.00005	0.00019	0.00010	0.01	0.2	2
Molybdenum	1455	U	0.0081	0.0024	0.016	0.030	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.047	0.074	0.094	0.71	0.5	10	50
Antimony	1455	U	0.0055	0.0021	0.011	0.024	0.06	0.7	5
Selenium	1455	U	0.0012	< 0.0005	0.0023	0.0013	0.1	0.5	7
Zinc	1455	U	0.019	0.018	0.038	0.18	4	50	200
Chloride	1220	U	13	29	26	270	800	15000	25000
Fluoride	1220	U	0.64	0.32	1.3	3.5	10	150	500
Sulphate	1220	U	54	20	110	240	1000	20000	50000
Total Dissolved Solids	1020	N	130	78	260	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	14	20	< 50	190	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	4.0

Leachate Test Information	
Leachant volume 1st extract/l	0.343
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.190

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24108								
Chemtest Sample ID:	1456509								
Sample Ref:	4						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	RC02								
Top Depth(m):	0.5								
Bottom Depth(m):									
Sampling Date:	23-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			1.2	3	5	6
Loss On Ignition	2610	M	%			4.0	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			230	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			99	100	--	--
pH	2010	M				8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.035	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0017	0.0004	0.0035	0.0064	0.5	2	25
Barium	1455	U	0.087	0.040	0.17	0.47	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.011	0.0023	0.022	0.036	0.5	10	70
Copper	1455	U	0.061	0.015	0.12	0.091	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.022	0.0059	0.044	0.083	0.5	10	30
Nickel	1455	U	0.012	0.0022	0.024	0.037	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0011	0.0008	0.0022	0.0088	0.06	0.7	5
Selenium	1455	U	0.0042	0.0015	0.0084	0.019	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	180	11	360	370	800	15000	25000
Fluoride	1220	U	0.42	0.53	< 1.0	5.1	10	150	500
Sulphate	1220	U	21	47	42	430	1000	20000	50000
Total Dissolved Solids	1020	N	720	550	1400	5700	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	< 2.5	3.7	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	8.7

Leachate Test Information	
Leachant volume 1st extract/l	0.333
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.261

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-24132-1		
Initial Date of Issue:	08-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	3		
Turnaround (Wkdays):	8	**Results Due:**	07-Jul-2022
Date Approved:	08-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24132	22-24132
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1456615	1456618
Order No.: D11866				Client Sample Ref.:		27	17
				Sample Location:		DS03	CP01
				Sample Type:		SOIL	SOIL
				Top Depth (m):		4.80	4.00
				Date Sampled:		21-Jun-2022	21-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
pH	U	1010	2:1		N/A	8.6	8.2
Chloride	U	1220	2:1	mg/l	1.0	59	29
Fluoride	U	1220	2:1	mg/l	0.050	0.90	0.84
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.19	0.16
Sulphate	U	1220	2:1	mg/l	1.0	35	14
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	22	18
Magnesium	U	1455	2:1	mg/l	0.20	0.62	1.6
Hardness as Ca	U	1415	2:1	mg/l	6	23	20
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0022	0.0020
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01	< 0.01
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.006	< 0.005
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	0.00075	0.00066
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0015	0.0007
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0064	0.0084
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0053	0.0045
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0074	0.0045
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0015	0.0010
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0017	0.0019
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	0.012	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	0.079	0.038
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	6.3	0.48
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	8	9
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	< 2.0	2.8
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24132	22-24132
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1456615	1456618
Order No.: D11866				Client Sample Ref.:		27	17
				Sample Location:		DS03	CP01
				Sample Type:		SOIL	SOIL
				Top Depth (m):		4.80	4.00
				Date Sampled:		21-Jun-2022	21-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-24132	22-24132	22-24132
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1456615	1456616	1456618
Order No.: D11866				Client Sample Ref.:	27	1	17
				Sample Location:	DS03	DS13	CP01
				Sample Type:	SOIL	SOIL	SOIL
				Top Depth (m):	4.80	0.10	4.00
				Date Sampled:	21-Jun-2022	21-Jun-2022	21-Jun-2022
				Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
ACM Type	U	2192		N/A		-	
Asbestos Identification	U	2192		N/A		No Asbestos Detected	
Moisture	N	2030	%	0.020	12	3.9	16
pH	U	2010		4.0	8.7	8.8	8.9
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.81	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	60	590	30
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	6800	5800	5200
Sulphate (Total)	U	2430	%	0.010	0.022	0.26	0.074
Arsenic	U	2455	mg/kg	0.5	2.5	3.5	1.8
Barium	U	2455	mg/kg	0	21	55	9
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10	0.11	< 0.10
Manganese	U	2455	mg/kg	1.0	210	270	150
Molybdenum	U	2455	mg/kg	0.5	< 0.5	0.6	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	9.2	7.7	4.9
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	10	7.3	7.1
Lead	U	2455	mg/kg	0.50	13	12	3.9
Selenium	U	2455	mg/kg	0.25	0.38	< 0.25	0.27
Vanadium	U	2455	mg/kg	0.5	8.8	11	7.7
Zinc	U	2455	mg/kg	0.50	25	29	17
Chromium (Trivalent)	N	2490	mg/kg	1.0	7.2	11	5.4
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0050	0.0050	0.0080
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24132	22-24132	22-24132
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1456615	1456616	1456618
Order No.: D11866					Client Sample Ref.:	27	1	17
					Sample Location:	DS03	DS13	CP01
					Sample Type:	SOIL	SOIL	SOIL
					Top Depth (m):	4.80	0.10	4.00
					Date Sampled:	21-Jun-2022	21-Jun-2022	21-Jun-2022
					Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0		< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0		< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0		< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10		< 10
Benzene	U	2760	µg/kg	1.0		< 1.0		< 1.0
Toluene	U	2760	µg/kg	1.0		< 1.0		< 1.0
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0		< 1.0
o-Xylene	U	2760	µg/kg	1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0		< 1.0
Naphthalene	N	2800	mg/kg	0.010		< 0.010	0.060	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010		< 0.010	0.086	< 0.010
Acenaphthene	N	2800	mg/kg	0.010		< 0.010	0.19	< 0.010
Fluorene	N	2800	mg/kg	0.010		< 0.010	0.21	< 0.010
Phenanthrene	N	2800	mg/kg	0.010		< 0.010	2.1	0.26
Anthracene	N	2800	mg/kg	0.010		< 0.010	0.62	0.079
Fluoranthene	N	2800	mg/kg	0.010		< 0.010	4.8	0.61
Pyrene	N	2800	mg/kg	0.010		< 0.010	4.4	0.50
Benzo[a]anthracene	N	2800	mg/kg	0.010		< 0.010	1.9	0.31
Chrysene	N	2800	mg/kg	0.010		< 0.010	2.0	0.30
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		< 0.010	2.8	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		< 0.010	0.99	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010		< 0.010	2.5	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		< 0.010	2.1	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010		< 0.010	0.42	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		< 0.010	1.2	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20		< 0.20	26	2.1
PCB 81	N	2815	mg/kg	0.010			< 0.010	
PCB 77	U	2815	mg/kg	0.010			< 0.010	
PCB 105	N	2815	mg/kg	0.010			< 0.010	
PCB 114	N	2815	mg/kg	0.010			< 0.010	
PCB 118	N	2815	mg/kg	0.010			< 0.010	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24132	22-24132	22-24132
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456615	1456616	1456618
Order No.: D11866			Client Sample Ref.:		27	1	17
			Sample Location:		DS03	DS13	CP01
			Sample Type:		SOIL	SOIL	SOIL
			Top Depth (m):		4.80	0.10	4.00
			Date Sampled:		21-Jun-2022	21-Jun-2022	21-Jun-2022
			Asbestos Lab:			COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
PCB 123	N	2815	mg/kg	0.010		< 0.010	
PCB 126	N	2815	mg/kg	0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010		< 0.010	
PCB 189	N	2815	mg/kg	0.010		< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12	
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-24144-1
Initial Date of Issue:	12-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation
Quotation No.:	Q22-27911
Order No.:	D11866
No. of Samples:	2
Turnaround (Wkdays):	7
Date Approved:	12-Jul-2022

Date Received:	28-Jun-2022
Date Instructed:	01-Jul-2022
Results Due:	11-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24144
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1456715
Order No.: D11866				Client Sample Ref.:		ES7
				Client Sample ID.:		7
				Sample Location:		CP03
				Sample Type:		SOIL
				Top Depth (m):		1.0
				Date Sampled:		24-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24144	22-24144
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456713	1456715
Order No.: D11866			Client Sample Ref.:		ES3	ES7
			Client Sample ID.:		3	7
			Sample Location:		CP03	CP03
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	1.0
			Date Sampled:		24-Jun-2022	24-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	7.4	13
pH	U	2010		4.0	9.1	8.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.90	1.8
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	900	190
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	8500	11000
Sulphate (Total)	U	2430	%	0.010	0.30	0.072
Arsenic	U	2455	mg/kg	0.5	4.5	4.1
Barium	U	2455	mg/kg	0	58	21
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.17	0.11
Manganese	U	2455	mg/kg	1.0	170	200
Molybdenum	U	2455	mg/kg	0.5	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	13	6.2
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	9.1	8.5
Lead	U	2455	mg/kg	0.50	36	9.1
Selenium	U	2455	mg/kg	0.25	< 0.25	< 0.25
Vanadium	U	2455	mg/kg	0.5	15	16
Zinc	U	2455	mg/kg	0.50	41	22
Chromium (Trivalent)	N	2490	mg/kg	1.0	9.4	10
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0062	0.014
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24144	22-24144
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456713	1456715
Order No.: D11866			Client Sample Ref.:		ES3	ES7
			Client Sample ID.:		3	7
			Sample Location:		CP03	CP03
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	1.0
			Date Sampled:		24-Jun-2022	24-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24144	22-24144
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456713	1456715
Order No.: D11866			Client Sample Ref.:		ES3	ES7
			Client Sample ID.:		3	7
			Sample Location:		CP03	CP03
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	1.0
			Date Sampled:		24-Jun-2022	24-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24144	22-24144
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456713	1456715
Order No.: D11866			Client Sample Ref.:		ES3	ES7
			Client Sample ID.:		3	7
			Sample Location:		CP03	CP03
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	1.0
			Date Sampled:		24-Jun-2022	24-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24144	22-24144
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456713	1456715
Order No.: D11866			Client Sample Ref.:		ES3	ES7
			Client Sample ID.:		3	7
			Sample Location:		CP03	CP03
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.3	1.0
			Date Sampled:		24-Jun-2022	24-Jun-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	0.85	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.28	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	1.4	< 0.010
Fluorene	N	2800	mg/kg	0.010	2.2	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	16	0.69
Anthracene	N	2800	mg/kg	0.010	3.4	0.17
Fluoranthene	N	2800	mg/kg	0.010	13	0.55
Pyrene	N	2800	mg/kg	0.010	9.9	0.45
Benzo[a]anthracene	N	2800	mg/kg	0.010	4.6	< 0.010
Chrysene	N	2800	mg/kg	0.010	4.1	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	4.6	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	1.7	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	3.8	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	2.2	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.42	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24144	22-24144
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1456713	1456715
Order No.: D11866					Client Sample Ref.:	ES3	ES7
					Client Sample ID.:	3	7
					Sample Location:	CP03	CP03
					Sample Type:	SOIL	SOIL
					Top Depth (m):	0.3	1.0
					Date Sampled:	24-Jun-2022	24-Jun-2022
					Asbestos Lab:	DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**			
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		1.9	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20		70	1.9
Total Phenols	U	2920	mg/kg	0.10		< 0.10	< 0.10

Results - 2 Stage WAC

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24144								
Chemtest Sample ID:	1456715								
Sample Ref:	ES7								
Sample ID:	7								
Sample Location:	CP03								
Top Depth(m):	1.0								
Bottom Depth(m):									
Sampling Date:	24-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%			1.4	3	5	6
Loss On Ignition	2610	U	%			5.9	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	U				8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.016	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0020	0.0041	0.0039	0.040	0.5	2	25
Barium	1455	U	0.025	0.005	0.049	0.062	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	0.0031	< 0.0005	0.029	0.5	10	70
Copper	1455	U	0.010	0.0026	0.020	0.0055	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0061	0.0030	0.012	0.032	0.5	10	30
Nickel	1455	U	0.0033	0.0023	0.0066	0.023	0.4	10	40
Lead	1455	U	< 0.0005	0.0010	< 0.0005	0.0092	0.5	10	50
Antimony	1455	U	0.0056	0.0009	0.011	0.012	0.06	0.7	5
Selenium	1455	U	0.0018	0.0006	0.0036	0.0065	0.1	0.5	7
Zinc	1455	U	< 0.003	0.005	< 0.003	0.045	4	50	200
Chloride	1220	U	2.2	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.095	0.38	< 1.0	3.6	10	150	500
Sulphate	1220	U	< 1.0	2.4	< 10	22	1000	20000	50000
Total Dissolved Solids	1020	N	21	25	41	250	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	25	20	< 50	210	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	13

Leachate Test Information	
Leachant volume 1st extract/l	0.325
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.095

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Test Methods

SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-24146-1		
Initial Date of Issue:	18-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	11-Jul-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Jul-2022
Date Approved:	18-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	4.6
pH	U	2010		4.0	10.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.68
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	510
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50
Iron (Total)	N	2430	mg/kg	100	10000
Sulphate (Total)	U	2430	%	0.010	0.34
Arsenic	U	2455	mg/kg	0.5	4.6
Barium	U	2455	mg/kg	0	85
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.11
Manganese	U	2455	mg/kg	1.0	180
Molybdenum	U	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	25
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	8.8
Lead	U	2455	mg/kg	0.50	20
Selenium	U	2455	mg/kg	0.25	0.29
Vanadium	U	2455	mg/kg	0.5	17
Zinc	U	2455	mg/kg	0.50	41
Chromium (Trivalent)	N	2490	mg/kg	1.0	9.9
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.029
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] < 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	[B] < 1.0
Chloromethane	U	2760	µg/kg	1.0	[B] < 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	[B] < 1.0
Bromomethane	U	2760	µg/kg	20	[B] < 20
Chloroethane	U	2760	µg/kg	2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	[B] < 1.0
Bromochloromethane	U	2760	µg/kg	5.0	[B] < 5.0
Trichloromethane	U	2760	µg/kg	1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	[B] < 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	[B] < 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	[B] < 1.0
Benzene	U	2760	µg/kg	1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	[B] < 2.0
Trichloroethene	N	2760	µg/kg	1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	[B] < 1.0
Dibromomethane	U	2760	µg/kg	1.0	[B] < 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	[B] < 10
Toluene	U	2760	µg/kg	1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	[B] < 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	[B] < 10
Tetrachloroethene	U	2760	µg/kg	1.0	[B] < 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,3-Dichloropropane	U	2760	µg/kg	2.0	[B] < 2.0
Dibromochloromethane	U	2760	µg/kg	10	[B] < 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	[B] < 5.0
Chlorobenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	[B] < 2.0
Ethylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
m & p-Xylene	U	2760	µg/kg	1.0	[B] < 1.0
o-Xylene	U	2760	µg/kg	1.0	[B] < 1.0
Styrene	U	2760	µg/kg	1.0	[B] < 1.0
Tribromomethane	U	2760	µg/kg	1.0	[B] < 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
Bromobenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	[B] < 50
N-Propylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	[B] < 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	[B] < 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	[B] < 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	[B] < 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	[B] < 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50
Phenol	U	2790	mg/kg	0.50	[B] < 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	[B] < 0.50
4-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50
Nitrobenzene	U	2790	mg/kg	0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] 0.77
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50
Fluoranthene	U	2790	mg/kg	0.50	[B] 2.0
Pyrene	U	2790	mg/kg	0.50	[B] 2.1
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] 1.2
Chrysene	U	2790	mg/kg	0.50	[B] 1.2
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] 2.0
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] 0.73
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] 1.5
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] 1.1
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] 1.2
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	1.2
Anthracene	N	2800	mg/kg	0.010	0.44
Fluoranthene	N	2800	mg/kg	0.010	3.5
Pyrene	N	2800	mg/kg	0.010	3.5
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.5
Chrysene	N	2800	mg/kg	0.010	1.5
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	2.5
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.95
Benzo[a]pyrene	N	2800	mg/kg	0.010	2.3
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24146
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456735
Order No.: D11866			Client Sample Ref.:		ES1
			Client Sample ID.:		0.1
			Sample Location:		CP09
			Sample Type:		SOIL
			Top Depth (m):		0.1
			Date Sampled:		24-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	17
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1456735	ES1	0.1	CP09	24-Jun-2022	B	Amber Glass 250ml
1456735	ES1	0.1	CP09	24-Jun-2022	B	Amber Glass 60ml
1456735	ES1	0.1	CP09	24-Jun-2022	B	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-24150-1
Initial Date of Issue:	12-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Platon Kostelletos
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	2		
Turnaround (Wkdays):	8	**Results Due:**	07-Jul-2022
Date Approved:	12-Jul-2022	**Subcon Results Due:**	19-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24150
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1456782
Order No.: D11866					Client Sample Ref.:	2
					Sample Location:	DS14
					Sample Type:	SOIL
					Top Depth (m):	0.30
					Date Sampled:	23-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	12.2
Chloride	U	1220	2:1	mg/l	1.0	14
Fluoride	U	1220	2:1	mg/l	0.050	0.094
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	2.1
Sulphate	U	1220	2:1	mg/l	1.0	< 1.0
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	5.2
Magnesium	U	1455	2:1	mg/l	0.20	< 0.20
Hardness as Ca	U	1415	2:1	mg/l	6	< 6
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	< 0.0002
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	< 0.005
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	< 0.0002
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	0.00012
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	6.5
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	< 1
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24150
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1456782
Order No.: D11866				Client Sample Ref.:		2
				Sample Location:		DS14
				Sample Type:		SOIL
				Top Depth (m):		0.30
				Date Sampled:		23-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	23
Benzene	U	1760	2:1	µg/l	1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	4.7
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	4.7
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192		N/A		No Asbestos Detected
Moisture	N	2030	%	0.020	5.5	13
pH	M	2010		4.0	8.1	8.3
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.73	0.43
Sulphate (2:1 Water Soluble) as SO4 mg/l	M	2120	mg/l	10.000	580	92
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	7800	4000
Sulphate (Total)	U	2430	%	0.010	0.27	0.041
Arsenic	M	2455	mg/kg	0.5	4.3	2.8
Barium	M	2455	mg/kg	0	52	15
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	M	2455	mg/kg	0.10	0.13	0.15
Manganese	M	2455	mg/kg	1.0	210	250
Molybdenum	M	2455	mg/kg	0.5	0.6	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	M	2455	mg/kg	0.50	19	5.2
Mercury	M	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	M	2455	mg/kg	0.50	8.7	7.0
Lead	M	2455	mg/kg	0.50	16	5.0
Selenium	M	2455	mg/kg	0.25	0.28	0.25
Vanadium	U	2455	mg/kg	0.5	20	9.8
Zinc	M	2455	mg/kg	0.50	44	16
Chromium (Trivalent)	N	2490	mg/kg	1.0	12	6.3
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	M	2625		0.0010	0.017	0.0040
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	7.5
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	26
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	48	40
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	290	110
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	53	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	390	190
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	20	6.2
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	720	6.4
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	51	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	790	13
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1200	200
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010	
Chloromethane	M	2760	mg/kg	0.0010	< 0.0010	
Vinyl Chloride	M	2760	mg/kg	0.0010	< 0.0010	
Bromomethane	M	2760	mg/kg	0.020	< 0.020	
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Trichlorofluoromethane	M	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethene	M	2760	mg/kg	0.0010	< 0.0010	
Trans 1,2-Dichloroethene	M	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethane	M	2760	mg/kg	0.0010	< 0.0010	
cis 1,2-Dichloroethene	M	2760	mg/kg	0.0010	< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050	
Trichloromethane	M	2760	mg/kg	0.0010	< 0.0010	
1,1,1-Trichloroethane	M	2760	mg/kg	0.0010	< 0.0010	
Tetrachloromethane	M	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010	
Benzene	M	2760	mg/kg	0.0010	< 0.0010	
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	mg/kg	0.0020	< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichloropropane	M	2760	mg/kg	0.0010	< 0.0010	
Dibromomethane	M	2760	mg/kg	0.0010	< 0.0010	
Bromodichloromethane	M	2760	mg/kg	0.0050	< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
Toluene	M	2760	mg/kg	0.0010	< 0.0010	
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
1,1,2-Trichloroethane	M	2760	mg/kg	0.010	< 0.010	
Tetrachloroethene	M	2760	mg/kg	0.0010	< 0.0010	
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010	
1,2-Dibromoethane	M	2760	mg/kg	0.0050	< 0.0050	
Chlorobenzene	M	2760	mg/kg	0.0010	< 0.0010	
1,1,1,2-Tetrachloroethane	M	2760	mg/kg	0.0020	< 0.0020	
Ethylbenzene	M	2760	mg/kg	0.0010	< 0.0010	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	mg/kg	0.0010	< 0.0010	
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	M	2760	mg/kg	0.0010	< 0.0010	
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	M	2760	mg/kg	0.0010	< 0.0010	
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010	
Isopropylbenzene	M	2760	mg/kg	0.0010	< 0.0010	
Bromobenzene	M	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050	
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
2-Chlorotoluene	M	2760	mg/kg	0.0010	< 0.0010	
1,3,5-Trimethylbenzene	M	2760	mg/kg	0.0010	< 0.0010	
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010	
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,4-Trimethylbenzene	M	2760	mg/kg	0.0010	< 0.0010	
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,3-Dichlorobenzene	M	2760	mg/kg	0.0010	< 0.0010	
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010	
1,4-Dichlorobenzene	M	2760	mg/kg	0.0010	< 0.0010	
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichlorobenzene	M	2760	mg/kg	0.0010	< 0.0010	
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	M	2760	mg/kg	0.0010	< 0.0010	
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020	
Methyl Tert-Butyl Ether	M	2760	mg/kg	0.0010	< 0.0010	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050	
Phenol	N	2790	mg/kg	0.050	0.074	
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050	
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050	
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050	
Isophorone	N	2790	mg/kg	0.050	< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2790	mg/kg	0.050	0.29	
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050	0.22	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050	0.21	
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Acenaphthene	N	2790	mg/kg	0.050	0.72	
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050	0.58	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Fluorene	N	2790	mg/kg	0.050	0.58	
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050	
Azobenzene	N	2790	mg/kg	0.050	< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050	
Phenanthrene	N	2790	mg/kg	0.050	5.7	
Anthracene	N	2790	mg/kg	0.050	1.8	
Carbazole	N	2790	mg/kg	0.050	0.50	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Fluoranthene	N	2790	mg/kg	0.050	9.2	
Pyrene	N	2790	mg/kg	0.050	8.0	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzo[a]anthracene	N	2790	mg/kg	0.050	3.9	
Chrysene	N	2790	mg/kg	0.050	3.7	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	0.19	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	4.9	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	1.8	
Benzo[a]pyrene	N	2790	mg/kg	0.050	4.4	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	2.2	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	2.4	
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2800	mg/kg	0.010	0.31	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.39	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	0.84	< 0.010
Fluorene	N	2800	mg/kg	0.010	0.75	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	9.1	< 0.010
Anthracene	N	2800	mg/kg	0.010	2.4	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	19	0.29
Pyrene	N	2800	mg/kg	0.010	16	0.22
Benzo[a]anthracene	N	2800	mg/kg	0.010	7.7	< 0.010
Chrysene	N	2800	mg/kg	0.010	7.7	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	12	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	4.1	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	11	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	7.8	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	1.0	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	6.0	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	110	0.51
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	U	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24150	22-24150
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456782	1456784
Order No.: D11866			Client Sample Ref.:		2	8
			Sample Location:		DS14	DS14
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.50
			Date Sampled:		23-Jun-2022	23-Jun-2022
			Asbestos Lab:			DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached	

Results - Single Stage WAC

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24150						
Chemtest Sample ID:	1456784						
Sample Ref:	8						
Sample ID:							
Sample Location:	DS14						
Top Depth(m):	1.50						
Bottom Depth(m):							
Sampling Date:	23-Jun-2022						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	0.40	3	5	6
Loss On Ignition	2610	M	%	5.5	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	200	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg	10	100	--	--
pH	2010	M		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.038	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0007	0.0067	0.5	2	25
Barium	1455	U	0.006	0.060	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0098	0.098	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0011	0.011	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	2.7	27	800	15000	25000
Fluoride	1220	U	0.91	9.1	10	150	500
Sulphate	1220	U	22	220	1000	20000	50000
Total Dissolved Solids	1020	N	250	2500	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	9.3	93	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Test Methods

SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22410
Our reference	:	Project 1378478
Validation Ref.	:	1378478_certificaat_v1
Verificationcode	:	AVYE-XUXM-OHNY-IGJV
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 11 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378478**
Your Project Description	:	**22410**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243517 = 1456782

Client sampling date	:	**23/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243517**
Your Matrix	:	**Soil**

Sample preparation

S	AS3000 (steekmonster)		**done**
S	sample preparation		**done**

General analysis - physics

S	dry weight	%	**94,0**

CERTIFICATE

Project code	:	**1378478**
Your Project Description	:	**22410**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243517 = 1456782

Client sampling date	:	**23/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243517**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,3**
Q	PFOS branched	µg/kg dw	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**
	sum PFOS	µg/kg dw	**0,4**

C E R T I F I C A T E

Project code	:	**1378478**
Your Project Description	:	**22410**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1378478**
Your Project Description	:	**22410**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378478**
Your Project Description	:	**22410**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-24162-1
Initial Date of Issue:	12-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Platon Kostelletos Dave Beskeen
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	06-Jul-2022
Date Approved:	12-Jul-2022	**Subcon Results Due:**	19-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24162
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1456860
Order No.: D11866					Client Sample Ref.:	2
					Sample Location:	DS03
					Sample Type:	SOIL
					Top Depth (m):	0.30
					Date Sampled:	21-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
pH	U	1010	2:1		N/A	9.3
Chloride	U	1220	2:1	mg/l	1.0	3.4
Fluoride	U	1220	2:1	mg/l	0.050	0.41
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.20
Sulphate	U	1220	2:1	mg/l	1.0	69
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050
Calcium	U	1455	2:1	mg/l	2.00	93
Magnesium	U	1455	2:1	mg/l	0.20	< 0.20
Hardness as Ca	U	1415	2:1	mg/l	6	93
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0009
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.03
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.032
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0051
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0071
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0017
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	5.9
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	4
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	23
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010

Results - Leachate

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1456860
Order No.: D11866				Client Sample Ref.:		2
				Sample Location:		DS03
				Sample Type:		SOIL
				Top Depth (m):		0.30
				Date Sampled:		21-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**	
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456860
Order No.: D11866			Client Sample Ref.:		2
			Sample Location:		DS03
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		21-Jun-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	6.6
pH	U	2010		4.0	7.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.81
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	290
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	7300
Sulphate (Total)	U	2430	%	0.010	0.15
Arsenic	U	2455	mg/kg	0.5	3.6
Barium	U	2455	mg/kg	0	110
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.11
Manganese	U	2455	mg/kg	1.0	230
Molybdenum	U	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	8.9
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	11
Lead	U	2455	mg/kg	0.50	7.7
Selenium	U	2455	mg/kg	0.25	0.37
Vanadium	U	2455	mg/kg	0.5	12
Zinc	U	2455	mg/kg	0.50	25
Chromium (Trivalent)	N	2490	mg/kg	1.0	11
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0075
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456860
Order No.: D11866			Client Sample Ref.:		2
			Sample Location:		DS03
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		21-Jun-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010
Chloromethane	U	2760	mg/kg	0.0010	< 0.0010
Vinyl Chloride	U	2760	mg/kg	0.0010	< 0.0010
Bromomethane	U	2760	mg/kg	0.020	< 0.020
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020
Trichlorofluoromethane	U	2760	mg/kg	0.0010	< 0.0010
1,1-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010
1,1-Dichloroethane	U	2760	mg/kg	0.0010	< 0.0010
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050
Trichloromethane	U	2760	mg/kg	0.0010	< 0.0010
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010	< 0.0010
Tetrachloromethane	U	2760	mg/kg	0.0010	< 0.0010
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010
Benzene	U	2760	mg/kg	0.0010	< 0.0010
Benzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	mg/kg	0.0020	< 0.0020
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010
1,2-Dichloropropane	U	2760	mg/kg	0.0010	< 0.0010
Dibromomethane	U	2760	mg/kg	0.0010	< 0.0010
Bromodichloromethane	U	2760	mg/kg	0.0050	< 0.0050
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010
Toluene	U	2760	mg/kg	0.0010	< 0.0010
Toluene	U	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010
1,1,2-Trichloroethane	U	2760	mg/kg	0.010	< 0.010
Tetrachloroethene	U	2760	mg/kg	0.0010	< 0.0010
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010
1,2-Dibromoethane	U	2760	mg/kg	0.0050	< 0.0050
Chlorobenzene	U	2760	mg/kg	0.0010	< 0.0010
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020	< 0.0020
Ethylbenzene	U	2760	mg/kg	0.0010	< 0.0010

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456860
Order No.: D11866			Client Sample Ref.:		2
			Sample Location:		DS03
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		21-Jun-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	mg/kg	0.0010	< 0.0010
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	mg/kg	0.0010	< 0.0010
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Styrene	U	2760	mg/kg	0.0010	< 0.0010
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010
Isopropylbenzene	U	2760	mg/kg	0.0010	< 0.0010
Bromobenzene	U	2760	mg/kg	0.0010	< 0.0010
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010
2-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010	< 0.0010
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050
Phenol	N	2790	mg/kg	0.050	< 0.050
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456860
Order No.: D11866			Client Sample Ref.:		2
			Sample Location:		DS03
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		21-Jun-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050
Isophorone	N	2790	mg/kg	0.050	< 0.050
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2790	mg/kg	0.050	< 0.050
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Acenaphthene	N	2790	mg/kg	0.050	< 0.050
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050
Fluorene	N	2790	mg/kg	0.050	< 0.050
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050
Azobenzene	N	2790	mg/kg	0.050	< 0.050
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050
Phenanthrene	N	2790	mg/kg	0.050	0.054
Anthracene	N	2790	mg/kg	0.050	< 0.050
Carbazole	N	2790	mg/kg	0.050	< 0.050
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Fluoranthene	N	2790	mg/kg	0.050	0.25
Pyrene	N	2790	mg/kg	0.050	0.24
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Inevestigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24162
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1456860
Order No.: D11866			Client Sample Ref.:		2
			Sample Location:		DS03
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		21-Jun-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[a]anthracene	N	2790	mg/kg	0.050	0.19
Chrysene	N	2790	mg/kg	0.050	0.17
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	0.054
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	0.26
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	0.086
Benzo[a]pyrene	N	2790	mg/kg	0.050	0.21
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	0.13
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	0.15
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.17
Pyrene	N	2800	mg/kg	0.010	0.17
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	0.34
Total Phenols	U	2920	mg/kg	0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.

Test Methods

SOP	Title	Parameters included	Method summary
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22411
Our reference	:	Project 1378596
Validation Ref.	:	1378596_certificaat_v1
Verificationcode	:	LTFF-CFUM-LJUP-JNDR
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 11 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
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IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378596**
Your Project Description	:	**22411**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243726 = 1456860

Client sampling date	:	**21/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243726**
Your Matrix	:	**Soil**

Sample preparation			
S	AS3000 (steekmonster)		**done**
S	sample preparation		**done**
General analysis - physics			
S	dry weight	%	**88,3**

CERTIFICATE

Project code	:	**1378596**
Your Project Description	:	**22411**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243726 = 1456860

Client sampling date	:	**21/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243726**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**0,1**
Q	PFPeA	µg/kg dw	**0,2**
Q	PFHxA	µg/kg dw	**0,1**
Q	PFHpA	µg/kg dw	**0,1**
Q	PFOA linear	µg/kg dw	**0,2**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**1,4**
Q	PFOS branched	µg/kg dw	**0,2**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,2**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,3**
	sum PFOS	µg/kg dw	**1,6**

CERTIFICATE

Project code	:	**1378596**
Your Project Description	:	**22411**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

Sample identification	:	**1456860**
Reference number	:	**7243726**

Results Note(s):		
6:2 fluorotelomer sulfonic acid (6:2 FTS):	-	Raised reporting limit because of interference by the matrix.

CERTIFICATE

Project code	:	**1378596**
Your Project Description	:	**22411**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378596**
Your Project Description	:	**22411**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-24263-1
Initial Date of Issue:	12-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	28-Jun-2022
Order No.:	D11866	**Date Instructed:**	28-Jun-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	06-Jul-2022
Date Approved:	12-Jul-2022	**Subcon Results Due:**	19-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24263
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1457267
Order No.: D11866			Client Sample Ref.:		3
			Sample Location:		DS07
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		22-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	5.3
pH	U	2010		4.0	8.9
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.95
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	360
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	10000
Sulphate (Total)	U	2430	%	0.010	0.26
Arsenic	U	2455	mg/kg	0.5	4.7
Barium	U	2455	mg/kg	0	46
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.12
Manganese	U	2455	mg/kg	1.0	250
Molybdenum	U	2455	mg/kg	0.5	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	14
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	12
Lead	U	2455	mg/kg	0.50	17
Selenium	U	2455	mg/kg	0.25	0.36
Vanadium	U	2455	mg/kg	0.5	22
Zinc	U	2455	mg/kg	0.50	38
Chromium (Trivalent)	N	2490	mg/kg	1.0	18
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.034
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	140
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	140
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24263
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1457267
Order No.: D11866			Client Sample Ref.:		3
			Sample Location:		DS07
			Sample Type:		SOIL
			Top Depth (m):		0.30
			Date Sampled:		22-Jun-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	6.6
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	500
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	500
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	650
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	0.23
Acenaphthylene	N	2800	mg/kg	0.010	0.70
Acenaphthene	N	2800	mg/kg	0.010	0.40
Fluorene	N	2800	mg/kg	0.010	0.47
Phenanthrene	N	2800	mg/kg	0.010	4.3
Anthracene	N	2800	mg/kg	0.010	1.7
Fluoranthene	N	2800	mg/kg	0.010	14
Pyrene	N	2800	mg/kg	0.010	13
Benzo[a]anthracene	N	2800	mg/kg	0.010	6.8
Chrysene	N	2800	mg/kg	0.010	6.9
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	12
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	4.5
Benzo[a]pyrene	N	2800	mg/kg	0.010	13
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	9.5
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	1.4
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	6.7
Total Of 16 PAH's	N	2800	mg/kg	0.20	96
Total Phenols	U	2920	mg/kg	0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22420
Our reference	:	Project 1378584
Validation Ref.	:	1378584_certificaat_v1
Verificationcode	:	UEVF-HLHY-MAEE-ICKB
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 11 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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CSOmegam@eurofins.com
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IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1378584**
Your Project Description	:	**22420**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243714 = 1457267

Client sampling date	:	**22/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243714**
Your Matrix	:	**Soil**

Sample preparation

S	AS3000 (steekmonster)		**done**
S	sample preparation		**done**

General analysis - physics

S	dry weight	%	**92,2**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code	:	**1378584**
Your Project Description	:	**22420**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7243714 = 1457267

Client sampling date	:	**22/06/2022**
Date of receipt	:	**04/07/2022**
Startdate	:	**06/07/2022**
Reference number	:	**7243714**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**0,3**
Q	PFPeA	µg/kg dw	**0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**< 0,1**
Q	PFOS branched	µg/kg dw	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**
	sum PFOS	µg/kg dw	**0,1**

C E R T I F I C A T E

Project code	:	**1378584**
Your Project Description	:	**22420**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1378584**
Your Project Description	:	**22420**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1378584**
Your Project Description	:	**22420**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-24490-3		
Initial Date of Issue:	26-Aug-2022	**Date of Re-Issue:**	26-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22 Stansted Terminal 2 (ST2)- Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	30-Jun-2022
Order No.:	D11866	**Date Instructed:**	30-Jun-2022
No. of Samples:	4		
Turnaround (Wkdays):	7	**Results Due:**	08-Jul-2022
Date Approved:	26-Aug-2022	**Subcon Results Due:**	11-Aug-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24490	22-24490	22-24490
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1458256	1458257	1458258	1458259
Order No.: D11866					Client Sample Ref.:	ES11	ES15	ES23	ES107
					Sample Location:	CP02	CP02	CP02	RC01A
					Sample Type:	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.5	2.0	3.5	4.2
					Date Sampled:	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Moisture	N	2030	%	0.020	27	11	16	9.3
pH	U	2010		4.0	8.7			
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.45			
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	11			
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50			
Iron (Total)	N	2430	mg/kg	100	7000			
Sulphate (Total)	U	2430	%	0.010	0.044			
Arsenic	U	2455	mg/kg	0.5	3.0			
Barium	U	2455	mg/kg	0	17			
Beryllium	U	2455	mg/kg	0.5	< 0.5			
Cadmium	U	2455	mg/kg	0.10	< 0.10			
Manganese	U	2455	mg/kg	1.0	160			
Molybdenum	U	2455	mg/kg	0.5	< 0.5			
Antimony	N	2455	mg/kg	2.0	< 2.0			
Copper	U	2455	mg/kg	0.50	6.8			
Mercury	U	2455	mg/kg	0.05	< 0.05			
Nickel	U	2455	mg/kg	0.50	7.6			
Lead	U	2455	mg/kg	0.50	7.6			
Selenium	U	2455	mg/kg	0.25	0.25			
Vanadium	U	2455	mg/kg	0.5	11			
Zinc	U	2455	mg/kg	0.50	18			
Chromium (Trivalent)	N	2490	mg/kg	1.0	7.9			
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50			
Fraction of Organic Carbon	U	2625		0.0010	0.0080			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0			

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24490	22-24490	22-24490	22-24490
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458256	1458257	1458258	1458259
Order No.: D11866			Client Sample Ref.:		ES11	ES15	ES23	ES107
			Sample Location:		CP02	CP02	CP02	RC01A
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.5	2.0	3.5	4.2
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10			
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010			
Chloromethane	U	2760	mg/kg	0.0010	< 0.0010			
Vinyl Chloride	U	2760	mg/kg	0.0010	< 0.0010			
Bromomethane	U	2760	mg/kg	0.020	< 0.020			
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020			
Trichlorofluoromethane	U	2760	mg/kg	0.0010	< 0.0010			
1,1-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010			
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010			
1,1-Dichloroethane	U	2760	mg/kg	0.0010	< 0.0010			
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010			
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050			
Trichloromethane	U	2760	mg/kg	0.0010	< 0.0010			
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010	< 0.0010			
Tetrachloromethane	U	2760	mg/kg	0.0010	< 0.0010			
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010			
Benzene	U	2760	mg/kg	0.0010	< 0.0010			
Benzene	U	2760	µg/kg	1.0	< 1.0			
1,2-Dichloroethane	U	2760	mg/kg	0.0020	< 0.0020			
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010			
1,2-Dichloropropane	U	2760	mg/kg	0.0010	< 0.0010			
Dibromomethane	U	2760	mg/kg	0.0010	< 0.0010			
Bromodichloromethane	U	2760	mg/kg	0.0050	< 0.0050			
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010			
Toluene	U	2760	mg/kg	0.0010	< 0.0010			
Toluene	U	2760	µg/kg	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010			
1,1,2-Trichloroethane	U	2760	mg/kg	0.010	< 0.010			
Tetrachloroethene	U	2760	mg/kg	0.0010	< 0.0010			
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020			
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010			
1,2-Dibromoethane	U	2760	mg/kg	0.0050	< 0.0050			
Chlorobenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020	< 0.0020			

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24490	22-24490	22-24490	22-24490
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458256	1458257	1458258	1458259
Order No.: D11866			Client Sample Ref.:		ES11	ES15	ES23	ES107
			Sample Location:		CP02	CP02	CP02	RC01A
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.5	2.0	3.5	4.2
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Ethylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0			
m & p-Xylene	U	2760	mg/kg	0.0010	< 0.0010			
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0			
o-Xylene	U	2760	mg/kg	0.0010	< 0.0010			
o-Xylene	U	2760	µg/kg	1.0	< 1.0			
Styrene	U	2760	mg/kg	0.0010	< 0.0010			
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010			
Isopropylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
Bromobenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050			
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
2-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010			
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010			
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010			
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010			
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010			
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010			
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050			
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010			
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010			
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020			
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010	< 0.0010			
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0			
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050			
Phenol	N	2790	mg/kg	0.050	< 0.050			
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050			
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050			
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050			
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050			
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050			
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050			
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050			

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24490	22-24490	22-24490	22-24490
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458256	1458257	1458258	1458259
Order No.: D11866			Client Sample Ref.:		ES11	ES15	ES23	ES107
			Sample Location:		CP02	CP02	CP02	RC01A
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.5	2.0	3.5	4.2
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050			
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050			
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050			
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050			
Isophorone	N	2790	mg/kg	0.050	< 0.050			
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050			
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050			
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050			
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050			
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050			
Naphthalene	N	2790	mg/kg	0.050	< 0.050			
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050			
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050			
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050			
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050			
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050			
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050			
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050			
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050			
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050			
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050			
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050			
Acenaphthene	N	2790	mg/kg	0.050	< 0.050			
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050			
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050			
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050			
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050			
Fluorene	N	2790	mg/kg	0.050	< 0.050			
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050			
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050			
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050			
Azobenzene	N	2790	mg/kg	0.050	< 0.050			
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050			
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050			
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050			
Phenanthrene	N	2790	mg/kg	0.050	< 0.050			
Anthracene	N	2790	mg/kg	0.050	< 0.050			

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24490	22-24490	22-24490	22-24490
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458256	1458257	1458258	1458259
Order No.: D11866			Client Sample Ref.:		ES11	ES15	ES23	ES107
			Sample Location:		CP02	CP02	CP02	RC01A
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.5	2.0	3.5	4.2
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Carbazole	N	2790	mg/kg	0.050	< 0.050			
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050			
Fluoranthene	N	2790	mg/kg	0.050	< 0.050			
Pyrene	N	2790	mg/kg	0.050	< 0.050			
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050			
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050			
Chrysene	N	2790	mg/kg	0.050	< 0.050			
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050			
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050			
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050			
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050			
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050			
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050			
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050			
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050			
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050			
Naphthalene	N	2800	mg/kg	0.010	< 0.010			
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010			
Acenaphthene	N	2800	mg/kg	0.010	< 0.010			
Fluorene	N	2800	mg/kg	0.010	< 0.010			
Phenanthrene	N	2800	mg/kg	0.010	< 0.010			
Anthracene	N	2800	mg/kg	0.010	< 0.010			
Fluoranthene	N	2800	mg/kg	0.010	< 0.010			
Pyrene	N	2800	mg/kg	0.010	< 0.010			
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010			
Chrysene	N	2800	mg/kg	0.010	< 0.010			
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010			
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010			
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010			
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010			
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010			
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010			
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20			
Total Phenols	U	2920	mg/kg	0.10	< 0.10			
PFAS Suite Soils	SN		µg/kg	0.0	See Attached			

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	25 August 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220728-111
Your Reference:	22-24490
Location:	22541
Report No:	658975
Order Number:	22-24490

We received 1 sample on Thursday July 28, 2022 and 1 of these samples were scheduled for analysis which was completed on Thursday August 25, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 220728-111 **Report Number:** 658975 **Superseded Report:**
Client Ref.: 22-24490 **Location:** 22541

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26652399	1458256		1.50 - 1.50	26/07/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 220728-111 **Report Number:** 658975 **Superseded Report:**
Client Ref.: 22-24490 **Location:** 22541

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26652399	1458256		1.50 - 1.50	500gTUB	S
PFAS Solids	All	NDPs: 0 Tests: 1						X
Sample description	All	NDPs: 0 Tests: 1						X

CERTIFICATE OF ANALYSIS

SDG: 220728-111 **Report Number:** 658975 **Superseded Report:**
Client Ref.: 22-24490 **Location:** 22541

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
26652399	1458256	1.50 - 1.50	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

SDG: 220728-111 **Report Number:** 658975 **Superseded Report:**
Client Ref.: 22-24490 **Location:** 22541

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	1458256
Depth (m)	1.50 - 1.50
Sample Type	Soil/Solid (S)
Date Sampled	26/07/2022
Sample Time	-
Date Received	28/07/2022
SDG Ref	220728-111
Lab Sample No.(s)	26652399
AGS Reference	

Component	LOD/Units	Method	
Moisture Content Ratio (% of as received sample)	%	PM024	15
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2
PFBS (375-73-5) Perfluoro-1-butanesulfonate	<1 µg/kg	TM338	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM338	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM338	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	<1
Branched PFOS	<1 µg/kg	TM338	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	<1 µg/kg	TM338	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	<1 µg/kg	TM338	<1
Total PFOS	<1 µg/kg	TM338	<1

Table of Results - Appendix

Method No	Reference	Description
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	PFAS In Solids	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220728-111 **Report Number:** 658975 **Superseded Report:**
Client Ref.: 22-24490 **Location:** 22541

Test Completion Dates

Lab Sample No(s)	26652399
Customer Sample Ref.	1458256
AGS Ref.	
Depth	1.50 - 1.50
Type	Soil/Solid (S)
PFAS Solids	25-Aug-2022
Sample description	31-Jul-2022

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-24492-2		
Initial Date of Issue:	05-Aug-2022	**Date of Re-Issue:**	05-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22 Stansted Terminal 2 (ST2)- Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	30-Jun-2022
Order No.:	D11866	**Date Instructed:**	11-Jul-2022
No. of Samples:	4		
Turnaround (Wkdays):	7	**Results Due:**	19-Jul-2022
Date Approved:	05-Aug-2022	**Subcon Results Due:**	25-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24492	22-24492	22-24492
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1458268	1458272	1458274
Order No.: D11866				Client Sample Ref.:		ES3	ES5	ES12
				Client Sample ID.:		3	5	12
				Sample Location:		CP04	CP06	CP06
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.3	0.3	1.5
				Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
pH	U	1010	2:1		N/A	9.8	10.2	
Chloride	U	1220	2:1	mg/l	1.0	2.7	3.2	
Fluoride	U	1220	2:1	mg/l	0.050	0.39	0.32	
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.13	0.17	
Sulphate	U	1220	2:1	mg/l	1.0	81	160	
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050	
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050	
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050	
Calcium	U	1455	2:1	mg/l	2.00	42	73	
Magnesium	U	1455	2:1	mg/l	0.20	0.76	0.29	
Hardness as Ca	U	1415	2:1	mg/l	6	43	73	
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0022	0.0023	
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	0.08	0.11	
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.013	0.017	
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001	< 0.001	
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011	< 0.00011	
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.012	0.035	
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005	
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0069	0.0093	
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0008	0.0055	
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005	
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0007	0.0015	
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005	< 0.0005	
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003	< 0.003	
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001	< 0.00001	
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005	< 0.005	
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	38	23	
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	6	4	
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10			< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0			< 5.0

Results - Leachate

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-24492	22-24492	22-24492
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1458268	1458272	1458274
Order No.: D11866				Client Sample Ref.:		ES3	ES5	ES12
				Client Sample ID.:		3	5	12
				Sample Location:		CP04	CP06	CP06
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.3	0.3	1.5
				Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10			< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10			< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0			< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10			< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	9.6	14	
Benzene	U	1760	2:1	µg/l	1.0			< 1.0
Toluene	U	1760	2:1	µg/l	1.0			< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0			< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0			< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0			< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0			< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	4.5	< 0.010	
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010	
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	4.5	< 0.20	
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050	< 0.0050	

Results - Leachate

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC						**Chemtest Job No.:**	22-24492	22-24492	22-24492
Quotation No.: Q22-27911						**Chemtest Sample ID.:**	1458268	1458272	1458274
Order No.: D11866						Client Sample Ref.:	ES3	ES5	ES12
						Client Sample ID.:	3	5	12
						Sample Location:	CP04	CP06	CP06
						Sample Type:	SOIL	SOIL	SOIL
						Top Depth (m):	0.3	0.3	1.5
						Date Sampled:	28-Jun-2022	28-Jun-2022	28-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
Xylenols	U	1920	2:1	mg/l	0.0050		< 0.0050	< 0.0050	
1-Naphthol	N	1920	2:1	mg/l	0.0050		< 0.0050	< 0.0050	
Trimethylphenols	U	1920	2:1	mg/l	0.0050		< 0.0050	< 0.0050	
Total Phenols	U	1920	2:1	mg/l	0.030		< 0.030	< 0.030	

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1458268	1458270	1458272	1458274
Order No.: D11866				Client Sample Ref.:	ES3	ES10	ES5	ES12
				Client Sample ID.:	3	10	5	12
				Sample Location:	CP04	CP04	CP06	CP06
				Sample Type:	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.3	1.5	0.3	1.5
				Date Sampled:	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
				Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
ACM Type	U	2192		N/A	-	-	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	4.0	11	6.1	12
pH	U	2010		4.0	10.2	9.8	10.4	9.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.81	0.79	0.84	0.58
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	130	370	440	200
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	15000	15000	11000
Sulphate (Total)	U	2430	%	0.010	0.29	0.24	0.52	0.29
Arsenic	U	2455	mg/kg	0.5	6.3	8.3	6.7	5.4
Barium	U	2455	mg/kg	0	120	43	48	39
Beryllium	U	2455	mg/kg	0.5	< 0.5	0.6	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.18	0.19	0.20	0.14
Manganese	U	2455	mg/kg	1.0	340	410	230	260
Molybdenum	U	2455	mg/kg	0.5	1.5	0.6	0.9	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	84	16	14	12
Mercury	U	2455	mg/kg	0.05	0.09	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	21	20	13	14
Lead	U	2455	mg/kg	0.50	33	14	15	19
Selenium	U	2455	mg/kg	0.25	2.8	0.40	0.38	0.44
Vanadium	U	2455	mg/kg	0.5	25	27	20	18
Zinc	U	2455	mg/kg	0.50	68	56	38	40
Chromium (Trivalent)	N	2490	mg/kg	1.0	35	18	12	12
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.011	0.0028	0.014	0.0046
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1458268	1458270	1458272	1458274
Order No.: D11866					Client Sample Ref.:	ES3	ES10	ES5	ES12
					Client Sample ID.:	3	10	5	12
					Sample Location:	CP04	CP04	CP06	CP06
					Sample Type:	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1.5	0.3	1.5
					Date Sampled:	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10	< 10	< 10	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20		< 20	< 20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0		< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0		< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10		< 10	< 10	< 10	< 10
Toluene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10		< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458268	1458270	1458272	1458274
Order No.: D11866			Client Sample Ref.:		ES3	ES10	ES5	ES12
			Client Sample ID.:		3	10	5	12
			Sample Location:		CP04	CP04	CP06	CP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1.5	0.3	1.5
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1458268	1458270	1458272	1458274
Order No.: D11866					Client Sample Ref.:	ES3	ES10	ES5	ES12
					Client Sample ID.:	3	10	5	12
					Sample Location:	CP04	CP04	CP06	CP06
					Sample Type:	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.3	1.5	0.3	1.5
					Date Sampled:	28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
1,2-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458268	1458270	1458272	1458274
Order No.: D11866			Client Sample Ref.:		ES3	ES10	ES5	ES12
			Client Sample ID.:		3	10	5	12
			Sample Location:		CP04	CP04	CP06	CP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1.5	0.3	1.5
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	1.3	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	0.51	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	3.9	0.61	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	3.4	0.59	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	1.9	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	1.7	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	1.9	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	0.76	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	1.4	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	0.78	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	0.86	< 0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	4.3	0.93	0.34	0.90
Anthracene	N	2800	mg/kg	0.010	1.4	0.35	0.11	0.21
Fluoranthene	N	2800	mg/kg	0.010	8.5	1.6	1.0	1.5
Pyrene	N	2800	mg/kg	0.010	7.2	1.3	1.0	1.2
Benzo[a]anthracene	N	2800	mg/kg	0.010	3.5	0.38	0.48	0.56
Chrysene	N	2800	mg/kg	0.010	3.0	0.56	0.53	0.54
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	5.5	< 0.010	0.84	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	1.9	< 0.010	0.27	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	4.9	< 0.010	0.79	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	2.9	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	0.58	< 0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24492	22-24492	22-24492	22-24492
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1458268	1458270	1458272	1458274
Order No.: D11866			Client Sample Ref.:		ES3	ES10	ES5	ES12
			Client Sample ID.:		3	10	5	12
			Sample Location:		CP04	CP04	CP06	CP06
			Sample Type:		SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.3	1.5	0.3	1.5
			Date Sampled:		28-Jun-2022	28-Jun-2022	28-Jun-2022	28-Jun-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**				
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	2.7	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	46	5.1	5.4	4.9
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached		See Attached	

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22497
Our reference	:	Project 1389001
Validation Ref.	:	1389001_certificaat_v1
Verificationcode	:	OTXH-YWHW-LANC-TQHL
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 2 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1389001**
Your Project Description	:	**22497**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7271774 = 1458268 CP04
7271775 = 1458272 CP06

Client sampling date	:		**28/06/2022**	**28/06/2022**
Date of receipt	:		**22/07/2022**	**22/07/2022**
Startdate	:		**22/07/2022**	**22/07/2022**
Reference number	:		**7271774**	**7271775**
Your Matrix	:		**Soil**	**Soil**
Sample preparation				
S AS3000 (steekmonster)			**done**	**done**
cryogenic grinding			**grinded**	**grinded**
S sample preparation			**done**	**done**
General analysis - physics				
S dry weight		%	**95,4**	**89,6**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code : **1389001**
Your Project Description : **22497**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7271774 = 1458268 CP04
7271775 = 1458272 CP06

Client sampling date	:	**28/06/2022**	**28/06/2022**
Date of receipt	:	**22/07/2022**	**22/07/2022**
Startdate	:	**22/07/2022**	**22/07/2022**
Reference number	:	**7271774**	**7271775**
Your Matrix	:	**Soil**	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:				
Q	PFBA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**	**0,1**
Q	PFHxA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**	**< 0,1**
Perfluorinated sulfonic acids:				
Q	PFBS	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,1**	**0,2**
Q	PFOS branched	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - precursors:				
Q	4:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - remainder:				
	HPFHpA	µg/kg dw	**< 0,4**	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**	**0,1**
	sum PFOS	µg/kg dw	**0,2**	**0,3**

C E R T I F I C A T E

Project code	:	**1389001**
Your Project Description	:	**22497**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1389001**
Your Project Description	:	**22497**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1389001**
Your Project Description	:	**22497**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-24763-3		
Initial Date of Issue:	16-Aug-2022	**Date of Re-Issue:**	16-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	01-Jul-2022
Order No.:	D11866	**Date Instructed:**	08-Jul-2022
No. of Samples:	7		
Turnaround (Wkdays):	7	**Results Due:**	18-Jul-2022
Date Approved:	15-Aug-2022	**Subcon Results Due:**	29-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866				Client Sample Ref.:	ES1	ES11	ES1	ES1	ES1	ES103	ES1
				Client Sample ID.:	1	11	1	1	1	103	1
				Sample Location:	CP05	CP05	RC04	DS09	DS10	RC02	CP10
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.1	1.5	0.5	0.5	0.5	2.5	0.5
				Date Sampled:	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
				Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type	U	2192		N/A	-	-	-	-	-	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	7.1	14	16	6.9	14	14	6.9
pH	U	2010		4.0	8.5	8.1	8.7	10.5	8.8	8.5	10.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	180	10	< 10	< 10	< 10	< 10	< 10
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	6100	11000	13000	8300	9000	12000	12000
Sulphate (Total)	U	2430	%	0.010	0.51	0.015	< 0.010	< 0.010	< 0.010	0.015	0.027
Arsenic	U	2455	mg/kg	0.5	4.4	9.5	10	5.5	8.3	12	11
Barium	U	2455	mg/kg	0	28	28	58	26	31	25	61
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5	0.7	< 0.5	0.5	0.5	0.7
Cadmium	U	2455	mg/kg	0.10	0.12	0.12	0.21	< 0.10	< 0.10	0.19	0.21
Manganese	U	2455	mg/kg	1.0	200	390	730	210	310	390	540
Molybdenum	U	2455	mg/kg	0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	0.9	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	8.1	13	19	9.5	12	14	13
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Nickel	U	2455	mg/kg	0.50	9.2	22	40	16	23	27	23
Lead	U	2455	mg/kg	0.50	9.1	8.8	15	7.2	9.5	12	17
Selenium	U	2455	mg/kg	0.25	0.53	0.54	0.98	0.57	0.88	0.92	0.88
Vanadium	U	2455	mg/kg	0.5	11	24	32	18	27	26	39
Zinc	U	2455	mg/kg	0.50	26	54	55	42	39	58	54
Chromium (Trivalent)	N	2490	mg/kg	1.0	5.5	15	24	12	17	17	24
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.025	0.0025	0.0022	0.010	0.0025	0.0053	0.0053
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866					Client Sample Ref.:	ES1	ES11	ES1	ES1	ES1	ES103	ES1
					Client Sample ID.:	1	11	1	1	1	103	1
					Sample Location:	CP05	CP05	RC04	DS09	DS10	RC02	CP10
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.1	1.5	0.5	0.5	0.5	2.5	0.5
					Date Sampled:	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		3.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		170	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		170	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		170	< 10	< 10	< 10	< 10	< 10	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	µg/kg	20		< 20	< 20	< 20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	µg/kg	2.0		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0		< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10		< 10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10		< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866					Client Sample Ref.:	ES1	ES11	ES1	ES1	ES1	ES103	ES1
					Client Sample ID.:	1	11	1	1	1	103	1
					Sample Location:	CP05	CP05	RC04	DS09	DS10	RC02	CP10
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.1	1.5	0.5	0.5	0.5	2.5	0.5
					Date Sampled:	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866					Client Sample Ref.:	ES1	ES11	ES1	ES1	ES1	ES103	ES1
					Client Sample ID.:	1	11	1	1	1	103	1
					Sample Location:	CP05	CP05	RC04	DS09	DS10	RC02	CP10
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.1	1.5	0.5	0.5	0.5	2.5	0.5
					Date Sampled:	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
					Asbestos Lab:	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,2-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866			Client Sample Ref.:		ES1	ES11	ES1	ES1	ES1	ES103	ES1
			Client Sample ID.:		1	11	1	1	1	103	1
			Sample Location:		CP05	CP05	RC04	DS09	DS10	RC02	CP10
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.1	1.5	0.5	0.5	0.5	2.5	0.5
			Date Sampled:		29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.8	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	1.4	< 0.50	0.70	< 0.50	< 0.50	1.9	< 0.50
Pyrene	U	2790	mg/kg	0.50	1.7	< 0.50	0.53	< 0.50	< 0.50	1.5	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	1.1	< 0.50	< 0.50	< 0.50	< 0.50	0.67	< 0.50
Chrysene	U	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50	< 0.50	0.64	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	2.0	< 0.50	< 0.50	< 0.50	< 0.50	0.74	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	0.72	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	1.4	< 0.50	< 0.50	< 0.50	< 0.50	0.56	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	0.90	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.94	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	0.75	0.87	0.59	< 0.010	< 0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	0.18	0.24	0.11	< 0.010	< 0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	1.6	1.9	1.2	< 0.010	< 0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	1.5	1.6	1.1	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.54	0.76	0.38	< 0.010	< 0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	0.49	0.64	0.32	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	0.78	1.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.33	0.29	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	0.67	0.83	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-24763	22-24763	22-24763	22-24763	22-24763	22-24763	22-24763
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1459278	1459282	1459283	1459286	1459289	1459293	1459295
Order No.: D11866			Client Sample Ref.:		ES1	ES11	ES1	ES1	ES1	ES103	ES1
			Client Sample ID.:		1	11	1	1	1	103	1
			Sample Location:		CP05	CP05	RC04	DS09	DS10	RC02	CP10
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.1	1.5	0.5	0.5	0.5	2.5	0.5
			Date Sampled:		29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022	29-Jun-2022
			Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	6.9	8.3	3.6	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached		See Attached	See Attached	See Attached	See Attached	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-24956-2		
Initial Date of Issue:	19-Aug-2022	**Date of Re-Issue:**	19-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Platon Kostelletos		
Project	D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	04-Jul-2022
Order No.:	D11866	**Date Instructed:**	06-Jul-2022
No. of Samples:	8		
Turnaround (Wkdays):	7	**Results Due:**	14-Jul-2022
Date Approved:	19-Aug-2022	**Subcon Results Due:**	23-Aug-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1460303	1460307	1460313	1460318
Order No.: D11866					Client Sample Ref.:	ES5	ES4	ES5	ES5
					Sample Location:	DS18	DS20	DS19	RC03
					Sample Type:	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	0.30	0.50	0.50
					Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**				
PFAS 2:1 Leachate	SN		2:1	µg/l	0.5000000	see attached	see attached	see attached	see attached

Results - Soil

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1460303	1460305	1460307	1460308	1460313	1460315	1460318	1460320
Order No.: D11866				Client Sample Ref.:	ES5	ES9	ES4	ES5	ES5	ES9	ES5	ES9
				Sample Location:	DS18	DS18	DS20	DS20	DS19	DS19	RC03	RC03
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.50	1.50	0.30	0.50	0.50	1.50	0.50	1.50
				Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
				Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-	-	-	-		-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	14	9.0	10	12	18	15	13
pH	U	2010		4.0	7.8	7.9	7.6	7.2	7.5	7.6	7.5	7.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	0.59	< 0.40	0.87	0.64	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	19	31	350	820	300	230	400	320
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	12000	9700	7200	8700	12000	19000	8100
Sulphate (Total)	U	2430	%	0.010	0.043	0.017	0.34	0.44	0.24	0.16	0.85	0.74
Arsenic	U	2455	mg/kg	0.5	7.4	7.6	5.3	3.4	4.1	7.3	17	4.1
Barium	U	2455	mg/kg	0	23	27	25	21	20	31	29	12
Beryllium	U	2455	mg/kg	0.5	< 0.5	0.5	< 0.5	< 0.5	0.7	0.6	0.6	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.14	0.11	< 0.10	< 0.10	0.47	0.18	0.31	0.10
Manganese	U	2455	mg/kg	1.0	220	190	190	160	170	280	760	230
Molybdenum	U	2455	mg/kg	0.5	0.7	< 0.5	< 0.5	< 0.5	0.6	0.5	1.1	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	10	8.9	9.6	5.4	7.6	9.6	12	7.5
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05	0.07	< 0.05	0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	18	16	9.7	8.0	7.9	16	31	12
Lead	U	2455	mg/kg	0.50	8.0	6.9	7.2	4.0	7.9	9.8	11	5.1
Selenium	U	2455	mg/kg	0.25	1.3	0.53	0.61	0.46	0.65	0.81	0.98	0.68
Vanadium	U	2455	mg/kg	0.5	19	23	13	9.0	12	23	22	13
Zinc	U	2455	mg/kg	0.50	37	32	26	18	42	36	82	24
Chromium (Trivalent)	N	2490	mg/kg	1.0	12	15	8.3	6.7	9.1	15	13	8.9
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0088	0.0072	0.010	0.0085	0.0057	0.0058	0.021	0.0038
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1460303	1460305	1460307	1460308	1460313	1460315	1460318	1460320
Order No.: D11866					Client Sample Ref.:	ES5	ES9	ES4	ES5	ES5	ES9	ES5	ES9
					Sample Location:	DS18	DS18	DS20	DS20	DS19	DS19	RC03	RC03
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	1.50	0.30	0.50	0.50	1.50	0.50	1.50
					Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Chloromethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Vinyl Chloride	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Bromomethane	U	2760	µg/kg	20		< 20		< 20	< 20	< 20		< 20	
Chloroethane	U	2760	µg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	
Trichlorofluoromethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,1-Dichloroethene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,1-Dichloroethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0		< 5.0		< 5.0	< 5.0	< 5.0		< 5.0	
Trichloromethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,1,1-Trichloroethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Tetrachloromethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Benzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	
Trichloroethene	N	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2-Dichloropropane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Dibromomethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Bromodichloromethane	U	2760	µg/kg	5.0		< 5.0		< 5.0	< 5.0	< 5.0		< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10		< 10		< 10	< 10	< 10		< 10	
Toluene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		< 10		< 10	< 10	< 10		< 10	
1,1,2-Trichloroethane	U	2760	µg/kg	10		< 10		< 10	< 10	< 10		< 10	
Tetrachloroethene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	
Dibromochloromethane	U	2760	µg/kg	10		< 10		< 10	< 10	< 10		< 10	

Results - Soil

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1460303	1460305	1460307	1460308	1460313	1460315	1460318	1460320
Order No.: D11866					Client Sample Ref.:	ES5	ES9	ES4	ES5	ES5	ES9	ES5	ES9
					Sample Location:	DS18	DS18	DS20	DS20	DS19	DS19	RC03	RC03
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	1.50	0.30	0.50	0.50	1.50	0.50	1.50
					Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
1,2-Dibromoethane	U	2760	µg/kg	5.0		< 5.0		< 5.0	< 5.0	< 5.0		< 5.0	
Chlorobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Tribromomethane	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Isopropylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Bromobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50		< 50		< 50	< 50	< 50		< 50	
N-Propylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
2-Chlorotoluene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,3-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,4-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		< 50		< 50	< 50	< 50		< 50	
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0	< 1.0		< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		< 2.0		< 2.0	< 2.0	< 2.0		< 2.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Phenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Methylphenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	

Results - Soil

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1460303	1460305	1460307	1460308	1460313	1460315	1460318	1460320
Order No.: D11866					Client Sample Ref.:	ES5	ES9	ES4	ES5	ES5	ES9	ES5	ES9
					Sample Location:	DS18	DS18	DS20	DS20	DS19	DS19	RC03	RC03
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	1.50	0.30	0.50	0.50	1.50	0.50	1.50
					Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Hexachloroethane	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Isophorone	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Naphthalene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Hexachlorobutadiene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Methylnaphthalene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Chloronaphthalene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Nitroaniline	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Dimethylphthalate	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,6-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Acenaphthene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Dibenzofuran	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Chlorophenylphenylether	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2,4-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Fluorene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Diethyl Phthalate	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Azobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	

Results - Soil

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956	22-24956
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1460303	1460305	1460307	1460308	1460313	1460315	1460318	1460320
Order No.: D11866					Client Sample Ref.:	ES5	ES9	ES4	ES5	ES5	ES9	ES5	ES9
					Sample Location:	DS18	DS18	DS20	DS20	DS19	DS19	RC03	RC03
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	1.50	0.30	0.50	0.50	1.50	0.50	1.50
					Date Sampled:	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022	30-Jun-2022
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Phenanthrene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Anthracene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Carbazole	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Fluoranthene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Pyrene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Chrysene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50		< 0.50		< 0.50	< 0.50	< 0.50		< 0.50	
Naphthalene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.2	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.13	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.18	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.23	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.3	< 0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.39	< 0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.34	< 0.010	2.9	< 0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010		< 0.010	< 0.010	0.25	< 0.010	2.7	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.4	< 0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.6	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	2.0	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.75	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.7	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.2	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	0.24	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010		< 0.010	< 0.010	< 0.010	< 0.010	1.1	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20		< 0.20	< 0.20	0.59	< 0.20	19	< 0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0		See Attached		See Attached		See Attached		See Attached	

Results - 2 Stage WAC

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24956								
Chemtest Sample ID:	1460307								
Sample Ref:	ES4						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:									
Sample Location:	DS20								
Top Depth(m):	0.30								
Bottom Depth(m):									
Sampling Date:	30-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	U	%			1.0	3	5	6
Loss On Ignition	2610	U	%			3.2	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	U				7.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.022	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0013	0.0012	0.0026	0.012	0.5	2	25
Barium	1455	U	0.054	0.065	0.11	0.64	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0058	0.0031	0.012	0.0056	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0081	0.0040	0.016	0.044	0.5	10	30
Nickel	1455	U	0.0022	0.0008	0.0043	0.0091	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0010	0.0007	0.0019	0.0069	0.06	0.7	5
Selenium	1455	U	0.0030	0.0012	0.0059	0.013	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	8.0	< 1.0	16	< 10	800	15000	25000
Fluoride	1220	U	0.57	0.37	1.1	3.9	10	150	500
Sulphate	1220	U	110	20	210	280	1000	20000	50000
Total Dissolved Solids	1020	N	130	39	260	480	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	11	6.6	< 50	71	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	9.0

Leachate Test Information	
Leachant volume 1st extract/l	0.333
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.168

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: D2027-22 Stanstead Terminal 2 (ST2) - Ground Investigation

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	22-24956								
Chemtest Sample ID:	1460318								
Sample Ref:	ES5								
Sample ID:									
Sample Location:	RC03								
Top Depth(m):	0.50								
Bottom Depth(m):									
Sampling Date:	30-Jun-2022								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%			2.1	3	5	6
Loss On Ignition	2610	U	%			2.3	--	--	10
Total BTEX	2760	U	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	U	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100	--	--
pH	2010	U				7.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.017	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0006	0.0005	0.0012	0.0048	0.5	2	25
Barium	1455	U	0.051	0.048	0.10	0.48	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	< 0.0005	0.0018	0.0010	0.5	10	70
Copper	1455	U	0.0026	0.0012	0.0051	0.0028	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.013	0.0064	0.025	0.071	0.5	10	30
Nickel	1455	U	0.0006	< 0.0005	0.0011	0.0006	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0069	0.0049	0.014	0.051	0.06	0.7	5
Selenium	1455	U	0.0008	< 0.0005	0.0016	0.0009	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	< 0.003	< 0.003	4	50	200
Chloride	1220	U	9.8	< 1.0	19	11	800	15000	25000
Fluoride	1220	U	17	9.9	34	110	10	150	500
Sulphate	1220	U	27	6.5	53	87	1000	20000	50000
Total Dissolved Solids	1020	N	59	27	120	300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	5.2	4.0	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	15

Leachate Test Information	
Leachant volume 1st extract/l	0.319
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.191

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22483
Our reference	:	Project 1384674
Validation Ref.	:	1384674_certificaat_v1
Verificationcode	:	NVVX-XFKB-WPTN-RBFP
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 26 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
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Trade register No. 34215654

CERTIFICATE

Project code : **1384674**
Your Project Description : **22483**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7259963 = 1460307
7259964 = 1460313
7259965 = 1460318

Client sampling date	:	**30/06/2022**	**30/06/2022**	**30/06/2022**
Date of receipt	:	**14/07/2022**	**14/07/2022**	**14/07/2022**
Startdate	:	**14/07/2022**	**14/07/2022**	**14/07/2022**
Reference number	:	**7259963**	**7259964**	**7259965**
Your Matrix	:	**Soil**	**Soil**	**Soil**
Sample preparation				
S AS3000 (steekmonster)		**done**	**done**	**done**
S sample preparation		**done**	**done**	**done**
General analysis - physics				
S dry weight	%	**91,1**	**89,6**	**89,3**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code : **1384674**
Your Project Description : **22483**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7259963 = 1460307
7259964 = 1460313
7259965 = 1460318

Client sampling date	:	**30/06/2022**	**30/06/2022**	**30/06/2022**
Date of receipt	:	**14/07/2022**	**14/07/2022**	**14/07/2022**
Startdate	:	**14/07/2022**	**14/07/2022**	**14/07/2022**
Reference number	:	**7259963**	**7259964**	**7259965**
Your Matrix	:	**Soil**	**Soil**	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:					
Q	PFBA	µg/kg dw	**0,1**	**< 0,1**	**< 0,1**
Q	PFPeA	µg/kg dw	**0,3**	**< 0,1**	**< 0,1**
Q	PFHxA	µg/kg dw	**0,2**	**< 0,1**	**< 0,1**
Q	PFHpA	µg/kg dw	**0,1**	**< 0,1**	**< 0,1**
Q	PFOA linear	µg/kg dw	**0,2**	**< 0,1**	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated sulfonic acids:					
Q	PFBS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,4**	**0,2**	**< 0,1**
Q	PFOS branched	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - precursors:					
Q	4:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - remainder:					
	HPFHpA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**	**< 1**	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
	sum PFOA	µg/kg dw	**0,3**	**0,1**	**0,1**
	sum PFOS	µg/kg dw	**0,5**	**0,3**	**0,1**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code	:	**1384674**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1384674**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1384674**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22483
Our reference	:	Project 1388999
Validation Ref.	:	1388999_certificaat_v3
Verificationcode	:	OYRJ-OXEX-XRGU-MDXC
Enclosure(s)	:	3 table(s)

Amsterdam, 22 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1388999**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7271759 = 1460303 DS18
7271760 = 1460307 DS20
7271761 = 1460313 DS19

Client sampling date	:	**30/06/2022**	**30/06/2022**	**30/06/2022**
Date of receipt	:	**22/07/2022**	**22/07/2022**	**22/07/2022**
Startdate	:	**26/07/2022**	**26/07/2022**	**26/07/2022**
Reference number	:	**7271759**	**7271760**	**7271761**
Your Matrix	:	**Product**	**Product**	**Product**

Special research			
special investigation according test plan	**done**	**done**	**done**

Additional compounds found				
ADONA [958445-44-8]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C04: PFBA [375-22-4]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C04: PFBS [375-73-5]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C05: PFPeA [2706-90-3]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C05: PFPeS [2706-91-4]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C06: PFHxA [307-24-4]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C06: PFHxS [355-46-4]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C07: PFHpA [375-85-9]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C07: PFHpS [375-92-8]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C08: PFOA (branched)	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C08: PFOA (linear) [335-67-1]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C08: PFOS (branched)	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C08: PFOS (linear) [1763-23-1]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C09: PFNA [375-95-1]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C10: PFDA [335-76-2]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C10: PFDS [335-77-3]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C11: PFUnDA [2058-94-8]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C12: PFDoDA [307-55-1]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C13: PFTriDA [72629-94-8]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C14: PFTeDA [376-06-7]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C16: PFHxDA [67905-19-5]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
C18: PFODA [16517-11-6]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
EtFOSA [4151-50-2]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
EtFOSAA [2991-50-6]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
HPFHpA [1546-95-8]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
MeFBSA [68298-12-4]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
MeFBSAA [159381-10-9]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
MeFOSA [31506-32-8]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
MeFOSAA [2355-31-9]	µg/l	**< 0,2**	**< 0,2**	**< 0,2**
PFBSA [30334-69-1]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
PFOSA [754-91-6]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**
P37DMOA [172155-07-6]	µg/l	**< 1**	**< 1**	**< 1**
10:2 FTS [120226-60-0]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
4H-PFUnDA [34598-33-9]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
4:2 FTS [757124-72-4]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
6:2 FTS [27619-97-2]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
8:2 diPAP [678-41-1]	µg/l	**< 0,2**	**< 0,2**	**< 0,2**
8:2 FTS [39108-34-4]	µg/l	**< 0,2**	**< 0,2**	**< 0,2**
8:2 FTUCA [70887-84-2]	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
9Cl-PF3ONS [73606-19-6]	µg/l	**< 0,04**	**< 0,04**	**< 0,04**

CERTIFICATE

Project code	:	**1388999**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7271762 = 1460318 RC03

Client sampling date	:	**30/06/2022**
Date of receipt	:	**22/07/2022**
Startdate	:	**26/07/2022**
Reference number	:	**7271762**
Your Matrix	:	**Product**

Special research

special investigation according test plan		**done**

Additional compounds found

ADONA [958445-44-8]	µg/l	**< 0,04**
C04: PFBA [375-22-4]	µg/l	**< 0,04**
C04: PFBS [375-73-5]	µg/l	**< 0,04**
C05: PFPeA [2706-90-3]	µg/l	**< 0,04**
C05: PFPeS [2706-91-4]	µg/l	**< 0,04**
C06: PFHxA [307-24-4]	µg/l	**< 0,04**
C06: PFHxS [355-46-4]	µg/l	**< 0,04**
C07: PFHpA [375-85-9]	µg/l	**< 0,04**
C07: PFHpS [375-92-8]	µg/l	**< 0,04**
C08: PFOA (branched)	µg/l	**< 0,04**
C08: PFOA (linear) [335-67-1]	µg/l	**< 0,04**
C08: PFOS (branched)	µg/l	**< 0,04**
C08: PFOS (linear) [1763-23-1]	µg/l	**< 0,04**
C09: PFNA [375-95-1]	µg/l	**< 0,04**
C10: PFDA [335-76-2]	µg/l	**< 0,04**
C10: PFDS [335-77-3]	µg/l	**< 0,04**
C11: PFUnDA [2058-94-8]	µg/l	**< 0,04**
C12: PFDoDA [307-55-1]	µg/l	**< 0,04**
C13: PFTriDA [72629-94-8]	µg/l	**< 0,04**
C14: PFTeDA [376-06-7]	µg/l	**< 0,04**
C16: PFHxDA [67905-19-5]	µg/l	**< 0,04**
C18: PFODA [16517-11-6]	µg/l	**< 0,04**
EtFOSA [4151-50-2]	µg/l	**< 0,1**
EtFOSAA [2991-50-6]	µg/l	**< 0,04**
HPFHpA [1546-95-8]	µg/l	**< 1**
MeFBSA [68298-12-4]	µg/l	**< 0,04**
MeFBSAA [159381-10-9]	µg/l	**< 0,04**
MeFOSA [31506-32-8]	µg/l	**< 0,1**
MeFOSAA [2355-31-9]	µg/l	**< 0,2**
PFBSA [30334-69-1]	µg/l	**< 0,04**
PFOSA [754-91-6]	µg/l	**< 0,04**
P37DMOA [172155-07-6]	µg/l	**< 1**
10:2 FTS [120226-60-0]	µg/l	**< 0,1**
4H-PFUnDA [34598-33-9]	µg/l	**< 0,1**
4:2 FTS [757124-72-4]	µg/l	**< 0,1**
6:2 FTS [27619-97-2]	µg/l	**< 0,2**
8:2 diPAP [678-41-1]	µg/l	**< 0,2**
8:2 FTS [39108-34-4]	µg/l	**< 0,2**
8:2 FTUCA [70887-84-2]	µg/l	**< 0,1**
9Cl-PF3ONS [73606-19-6]	µg/l	**< 0,04**

C E R T I F I C A T E

Project code	:	**1388999**
Your Project Description	:	**22483**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-25344-3		
Initial Date of Issue:	16-Aug-2022	**Date of Re-Issue:**	16-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	06-Jul-2022
Order No.:	D11866	**Date Instructed:**	08-Jul-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	18-Jul-2022
Date Approved:	16-Aug-2022	**Subcon Results Due:**	16-Aug-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25344
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462216
			Client Sample ID.:		1
			Sample Location:		DS11
			Sample Type:		SOIL
			Top Depth (m):		0.50
			Date Sampled:		04-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	15
pH	U	2010		4.0	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.43
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	110
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	16000
Sulphate (Total)	U	2430	%	0.010	0.039
Arsenic	U	2455	mg/kg	0.5	9.4
Barium	U	2455	mg/kg	0	63
Beryllium	U	2455	mg/kg	0.5	0.6
Cadmium	U	2455	mg/kg	0.10	0.13
Manganese	U	2455	mg/kg	1.0	290
Molybdenum	U	2455	mg/kg	0.5	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	12
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	21
Lead	U	2455	mg/kg	0.50	12
Selenium	U	2455	mg/kg	0.25	0.54
Vanadium	U	2455	mg/kg	0.5	28
Zinc	U	2455	mg/kg	0.50	45
Chromium (Trivalent)	N	2490	mg/kg	1.0	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0026
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25344
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462216
			Client Sample ID.:		1
			Sample Location:		DS11
			Sample Type:		SOIL
			Top Depth (m):		0.50
			Date Sampled:		04-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25344
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462216
			Client Sample ID.:		1
			Sample Location:		DS11
			Sample Type:		SOIL
			Top Depth (m):		0.50
			Date Sampled:		04-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25344
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462216
			Client Sample ID.:		1
			Sample Location:		DS11
			Sample Type:		SOIL
			Top Depth (m):		0.50
			Date Sampled:		04-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25344
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462216
			Client Sample ID.:		1
			Sample Location:		DS11
			Sample Type:		SOIL
			Top Depth (m):		0.50
			Date Sampled:		04-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22480
Our reference	:	Project 1395382
Validation Ref.	:	1395382_certificaat_v1
Verificationcode	:	EBNS-KFVB-UDFZ-NJUT
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 16 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com
[redacted]

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1395382**
Your Project Description	:	**22480**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7287956 = 1462216 DS11

Client sampling date	:	**04/08/2022**
Date of receipt	:	**09/08/2022**
Startdate	:	**09/08/2022**
Reference number	:	**7287956**
Your Matrix	:	**Soil**

Sample preparation		
S AS3000 (steekmonster)		**done**
S sample preparation		**done**

General analysis - physics		
S dry weight	%	**85,5**

CERTIFICATE

Project code	:	**1395382**
Your Project Description	:	**22480**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7287956 = 1462216 DS11

Client sampling date	:	**04/08/2022**
Date of receipt	:	**09/08/2022**
Startdate	:	**09/08/2022**
Reference number	:	**7287956**
Your Matrix	:	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
Q	PFBA	µg/kg dw	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**
Q	PFOA branched	µg/kg dw	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**
Perfluorinated sulfonic acids:			
Q	PFBS	µg/kg dw	**0,2**
Q	PFPeS	µg/kg dw	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**
Q	PFOS linear	µg/kg dw	**< 0,1**
Q	PFOS branched	µg/kg dw	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - precursors:			
Q	4:2 FTS	µg/kg dw	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**
Perfluorinated alkyl substances - remainder:			
	HPFHpA	µg/kg dw	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**
	sum PFOS	µg/kg dw	**0,1**

C E R T I F I C A T E

Project code	:	**1395382**
Your Project Description	:	**22480**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1395382**
Your Project Description	:	**22480**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1395382**
Your Project Description	:	**22480**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-25349-3		
Initial Date of Issue:	19-Jul-2022	**Date of Re-Issue:**	19-Jul-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	06-Jul-2022
Order No.:	D11866	**Date Instructed:**	06-Jul-2022
No. of Samples:	6		
Turnaround (Wkdays):	7	**Results Due:**	14-Jul-2022
Date Approved:	18-Jul-2022	**Subcon Results Due:**	27-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462238	1462241
Order No.: D11866					Client Sample Ref.:	2	2	2
					Sample Location:	DS08	DS12	CP07
					Sample Type:	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	0.60	0.60
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
pH	U	1010	2:1		N/A	11.5		
Chloride	U	1220	2:1	mg/l	1.0	13		
Fluoride	U	1220	2:1	mg/l	0.050	0.23		
Ammoniacal Nitrogen	U	1220	2:1	mg/l	0.050	0.12		
Sulphate	U	1220	2:1	mg/l	1.0	23		
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	2:1	mg/l	0.050	< 0.050		
Cyanide (Complex)	U	1300	2:1	mg/l	0.050	< 0.050		
Calcium	U	1455	2:1	mg/l	2.00	100		
Magnesium	U	1455	2:1	mg/l	0.20	< 0.20		
Hardness as Ca	U	1415	2:1	mg/l	6	100		
Arsenic (Dissolved)	U	1455	2:1	mg/l	0.0002	0.0004		
Boron (Dissolved)	U	1455	2:1	mg/l	0.01	< 0.01		
Barium (Dissolved)	U	1455	2:1	mg/l	0.005	0.079		
Beryllium (Dissolved)	U	1455	2:1	mg/l	0.001	< 0.001		
Cadmium (Dissolved)	U	1455	2:1	mg/l	0.00011	< 0.00011		
Copper (Dissolved)	U	1455	2:1	mg/l	0.0005	0.038		
Manganese (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005		
Molybdenum (Dissolved)	U	1455	2:1	mg/l	0.0002	0.021		
Nickel (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0055		
Lead (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005		
Selenium (Dissolved)	U	1455	2:1	mg/l	0.0005	0.0077		
Vanadium (Dissolved)	U	1455	2:1	mg/l	0.0005	< 0.0005		
Zinc (Dissolved)	U	1455	2:1	mg/l	0.002	< 0.003		
Mercury Low Level	U	1460	2:1	mg/l	0.000010	< 0.00001		
Iron (Dissolved)	N	1455	2:1	mg/l	0.005	< 0.005		
Low-Level Chromium (Hexavalent)	N	1495	2:1	µg/l	0.10	< 0.10		
Chromium (Trivalent) LL	N	1450	2:1	µg/l	1	19		
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0		< 5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**		22-25349	22-25349	22-25349
Quotation No.: Q22-27911				**Chemtest Sample ID.:**		1462235	1462238	1462241
Order No.: D11866				Client Sample Ref.:		2	2	2
				Sample Location:		DS08	DS12	CP07
				Sample Type:		SOIL	SOIL	SOIL
				Top Depth (m):		0.60	0.60	0.60
				Date Sampled:		01-Jul-2022	01-Jul-2022	01-Jul-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10		< 0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0		< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10		< 10	< 10
Dissolved Organic Carbon	U	1610	2:1	mg/l	2.0	11		
Benzene	U	1760	2:1	µg/l	1.0		< 1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0		< 1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0		< 1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0		< 1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0		< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0		< 1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010		
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010		
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010		
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010		
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010		
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010		
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010		
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010		
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010		
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010		
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010		
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010		
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010		
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010		
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010		
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010		
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20		
Resorcinol	U	1920	2:1	mg/l	0.0050	< 0.0050		
Phenol	U	1920	2:1	mg/l	0.0050	< 0.0050		
Cresols	U	1920	2:1	mg/l	0.0050	< 0.0050		
Xylenols	U	1920	2:1	mg/l	0.0050	< 0.0050		
1-Naphthol	N	1920	2:1	mg/l	0.0050	< 0.0050		

Results - Leachate

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462238	1462241
Order No.: D11866					Client Sample Ref.:	2	2	2
					Sample Location:	DS08	DS12	CP07
					Sample Type:	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	0.60	0.60
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**			
Trimethylphenols	U	1920	2:1	mg/l	0.0050	< 0.0050		
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030		

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-25349	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866				Client Sample Ref.:	2	6	2	6	2	4
				Sample Location:	DS08	DS08	DS12	DS12	CP07	CP07
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.60	1.50	0.60	1.50	0.60	1.00
				Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
				Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type	U	2192		N/A	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	13	11	13	13	13
pH	U	2010		4.0	11.1	8.9	11.5	9.2	11.2	10.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.84	< 0.40	1.0	0.47	0.62	0.50
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	840	30	720	40	570	670
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	7900	8700	9700	15000	7200	4700
Sulphate (Total)	U	2430	%	0.010	0.29	0.014	0.38	0.017	0.36	0.24
Arsenic	U	2455	mg/kg	0.5	5.2	4.8	6.5	11	4.3	2.4
Barium	U	2455	mg/kg	0	96	16	80	41	17	16
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.15	< 0.10	0.14	0.15	< 0.10	< 0.10
Manganese	U	2455	mg/kg	1.0	190	190	210	310	160	110
Molybdenum	U	2455	mg/kg	0.5	0.7	< 0.5	1.1	0.6	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	29	6.0	32	11	7.3	4.0
Mercury	U	2455	mg/kg	0.05	0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	8.9	10	12	22	16	7.8
Lead	U	2455	mg/kg	0.50	35	4.9	32	13	6.7	4.0
Selenium	U	2455	mg/kg	0.25	0.61	0.27	0.72	0.83	0.42	0.25
Vanadium	U	2455	mg/kg	0.5	14	11	16	28	12	7.3
Zinc	U	2455	mg/kg	0.50	54	21	58	42	24	15
Chromium (Trivalent)	N	2490	mg/kg	1.0	14	7.9	18	19	18	7.5
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0092	0.0038	0.011	0.0014	0.018	0.0059
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866					Client Sample Ref.:	2	6	2	6	2	4
					Sample Location:	DS08	DS08	DS12	DS12	CP07	CP07
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	1.50	0.60	1.50	0.60	1.00
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		47	48	42	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		47	48	42	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		47	48	42	< 10	< 10	< 10
Dichlorodifluoromethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Chloromethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Vinyl Chloride	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Bromomethane	U	2760	mg/kg	0.020		< 0.020		< 0.020		< 0.020	
Chloroethane	U	2760	mg/kg	0.0020		< 0.0020		< 0.0020		< 0.0020	
Trichlorofluoromethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,1-Dichloroethene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,1-Dichloroethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050		< 0.0050		< 0.0050		< 0.0050	
Trichloromethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Tetrachloromethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Benzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Benzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	mg/kg	0.0020		< 0.0020		< 0.0020		< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2-Dichloropropane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Dibromomethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Bromodichloromethane	U	2760	mg/kg	0.0050		< 0.0050		< 0.0050		< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
Toluene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Toluene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
1,1,2-Trichloroethane	U	2760	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
Tetrachloroethene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866					Client Sample Ref.:	2	6	2	6	2	4
					Sample Location:	DS08	DS08	DS12	DS12	CP07	CP07
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	1.50	0.60	1.50	0.60	1.00
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,3-Dichloropropane	U	2760	mg/kg	0.0020		< 0.0020		< 0.0020		< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010		< 0.010		< 0.010		< 0.010	
1,2-Dibromoethane	U	2760	mg/kg	0.0050		< 0.0050		< 0.0050		< 0.0050	
Chlorobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020		< 0.0020		< 0.0020		< 0.0020	
Ethylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
o-Xylene	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Tribromomethane	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Isopropylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Bromobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2,3-Trichloropropane	N	2760	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
N-Propylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
2-Chlorotoluene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
4-Chlorotoluene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Tert-Butylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Sec-Butylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
4-Isopropyltoluene	N	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
N-Butylbenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Hexachlorobutadiene	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020		< 0.0020		< 0.0020		< 0.0020	
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010		< 0.0010		< 0.0010		< 0.0010	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Phenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Chlorophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866					Client Sample Ref.:	2	6	2	6	2	4
					Sample Location:	DS08	DS08	DS12	DS12	CP07	CP07
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	1.50	0.60	1.50	0.60	1.00
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Methylphenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Hexachloroethane	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
4-Methylphenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Nitrobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Isophorone	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Naphthalene	N	2790	mg/kg	0.050		< 0.050		0.067		< 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050		< 0.050		0.067		< 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050		< 0.050		0.056		< 0.050	
Dimethylphthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Acenaphthene	N	2790	mg/kg	0.050		0.13		0.20		< 0.050	
3-Nitroaniline	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050		0.10		0.15		< 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Fluorene	N	2790	mg/kg	0.050		0.10		0.15		< 0.050	
Diethyl Phthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866					Client Sample Ref.:	2	6	2	6	2	4
					Sample Location:	DS08	DS08	DS12	DS12	CP07	CP07
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.60	1.50	0.60	1.50	0.60	1.00
					Date Sampled:	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Azobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Phenanthrene	N	2790	mg/kg	0.050		1.1		1.5		< 0.050	
Anthracene	N	2790	mg/kg	0.050		0.42		0.51		< 0.050	
Carbazole	N	2790	mg/kg	0.050		0.10		0.16		< 0.050	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Fluoranthene	N	2790	mg/kg	0.050		2.4		3.1		< 0.050	
Pyrene	N	2790	mg/kg	0.050		2.1		2.7		< 0.050	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050		1.0		1.3		< 0.050	
Chrysene	N	2790	mg/kg	0.050		0.95		1.2		< 0.050	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050		1.2		1.6		< 0.050	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050		0.43		0.59		< 0.050	
Benzo[a]pyrene	N	2790	mg/kg	0.050		0.93		1.2		< 0.050	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050		0.56		0.76		< 0.050	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050		0.64		0.88		< 0.050	
4-Nitrophenol	N	2790	mg/kg	0.050		< 0.050		< 0.050		< 0.050	
Naphthalene	N	2800	mg/kg	0.010		0.30	< 0.010	0.30	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010		0.13	< 0.010	0.15	< 0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010		0.21	< 0.010	0.26	< 0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010		0.18	< 0.010	0.25	< 0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010		2.3	< 0.010	2.7	< 0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010		0.59	< 0.010	0.83	< 0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010		5.3	< 0.010	6.6	< 0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010		4.7	< 0.010	5.3	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010		2.1	< 0.010	2.9	< 0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010		2.0	< 0.010	3.1	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010		2.9	< 0.010	3.6	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010		1.3	< 0.010	1.5	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010		2.4	< 0.010	3.0	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010		< 0.010	< 0.010	2.0	< 0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25349	22-25349	22-25349	22-25349	22-25349	22-25349
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1462235	1462237	1462238	1462240	1462241	1462242
Order No.: D11866			Client Sample Ref.:		2	6	2	6	2	4
			Sample Location:		DS08	DS08	DS12	DS12	CP07	CP07
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.60	1.50	0.60	1.50	0.60	1.00
			Date Sampled:		01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022	01-Jul-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010	0.55	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010	1.7	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	24	< 0.20	35	< 0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
PFAS Suite Soils	SN		µg/kg	0.0	See Attached		See Attached		See Attached	

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1415	Cations in Waters by ICP-MS	Sodium; Potassium; Calcium; Magnesium	Direct determination by inductively coupled plasma - mass spectrometry (ICP-MS).
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.

Test Methods

SOP	Title	Parameters included	Method summary
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22448
Our reference	:	Project 1382486
Validation Ref.	:	1382486_certificaat_v1
Verificationcode	:	OUOW-CMFW-TUVX-IRZK
Enclosure(s)	:	3 table(s) + 2 supplement(s)

Amsterdam, 18 July 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

[redacted]

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
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IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code : **1382486**
Your Project Description : **22448**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7254004 = 1462235
7254133 = 1462238
7254134 = 1462241

Client sampling date	:	**01/07/2022**	**01/07/2022**	**01/07/2022**
Date of receipt	:	**11/07/2022**	**11/07/2022**	**11/07/2022**
Startdate	:	**11/07/2022**	**11/07/2022**	**11/07/2022**
Reference number	:	**7254004**	**7254133**	**7254134**
Your Matrix	:	**Soil**	**Soil**	**Soil**
Sample preparation				
S AS3000 (steekmonster)		**done**	**done**	**done**
S sample preparation		**done**	**done**	**done**
General analysis - physics				
S dry weight	%	**85,9**	**85,4**	**81,3**

- The frontpage and, where applicable, appendices of this document are integral parts of this certificate.
- Analyses marked with a 'Q' are part of the RvA accreditation certificate L086.
- Analyses marked with a 'S' are part of the AS 3000 accreditation certificate.

CERTIFICATE

Project code : **1382486**
Your Project Description : **22448**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7254004 = 1462235
7254133 = 1462238
7254134 = 1462241

Client sampling date	:	**01/07/2022**	**01/07/2022**	**01/07/2022**
Date of receipt	:	**11/07/2022**	**11/07/2022**	**11/07/2022**
Startdate	:	**11/07/2022**	**11/07/2022**	**11/07/2022**
Reference number	:	**7254004**	**7254133**	**7254134**
Your Matrix	:	**Soil**	**Soil**	**Soil**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:					
Q	PFBA	µg/kg dw	**0,1**	**< 0,1**	**< 0,1**
Q	PFPeA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHpA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOA linear	µg/kg dw	**< 0,1**	**< 0,1**	**0,2**
Q	PFOA branched	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFNA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFUnDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDoDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTrDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFTeDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxDA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFODA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated sulfonic acids:					
Q	PFBS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFPeS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHxS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFHpS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOS linear	µg/kg dw	**0,3**	**0,2**	**< 0,1**
Q	PFOS branched	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFDS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - precursors:					
Q	4:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	6:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	8:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	10:2 FTS	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	PFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Perfluorinated alkyl substances - remainder:					
	HPFHpA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	4H-PFUnDA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
	8:2 FTUCA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	9Cl-PF3ONS (F53-B)	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	ADONA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	EtFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
	MeFBSA	µg/kg dw	**< 0,4**	**< 0,4**	**< 0,4**
Q	MeFOSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	P37DMOA	µg/kg dw	**< 1**	**< 1**	**< 1**
Q	PFBSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFOSA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	MeFBSAA	µg/kg dw	**< 0,1**	**< 0,1**	**< 0,1**
Q	8:2 DiPAP	µg/kg dw	**2,1**	**< 0,1**	**< 0,1**
	sum PFOA	µg/kg dw	**0,1**	**0,1**	**0,3**
	sum PFOS	µg/kg dw	**0,4**	**0,3**	**0,1**

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C E R T I F I C A T E

Project code	:	**1382486**
Your Project Description	:	**22448**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1382486**
Your Project Description	:	**22448**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

C E R T I F I C A T E

Project code	:	**1382486**
Your Project Description	:	**22448**
Client	:	**Eurofins Chemtest Ltd**

Methodology Soil (AS3000)

AS3000
In dit analysecertificaat zijn de met 'S' gemerkte analyses uitgevoerd volgens de analysemethoden beschreven in het "Accreditatieschema Laboratoriumanalyses voor grond-, waterbodem- en grondwateronderzoek (AS SIKB 3000)". Het laboratoriumonderzoek is uitgevoerd volgens de onderstaande analysemethoden. Deze analyses zijn vastgelegd in het geldende accreditatie-certificaat met bijbehorende verrichtingenlijst L086 van Eurofins Omegam BV.

Samplemate	:	Conform AS3000 en NEN-EN 16179
Dry weight	:	Conform AS3010 prestatieblad 2

In this certificate of analysis, the analysis marked with 'Q' have been carried out according to the analysis methods below. The analysis are registrated in the current accreditation certificate with associated annex to declaration of accreditation (scope of accreditation) L086 of Eurofins Omegam BV.

PFAS	:	In house method

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-25564-1		
Initial Date of Issue:	19-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Platon Kostelletos Dave Beskeen		
Project	D2027-22, Stanstead Terminal (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	07-Jul-2022
Order No.:	D11866	**Date Instructed:**	11-Jul-2022
No. of Samples:	2		
Turnaround (Wkdays):	7	**Results Due:**	19-Jul-2022
Date Approved:	19-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-25564	22-25564
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1463160	1463162
Order No.: D11866				Client Sample Ref.:	ES	ES
				Client Sample ID.:	3	8
				Sample Location:	TP12	TP12
				Sample Type:	SOIL	SOIL
				Top Depth (m):	0.30	1.00
				Date Sampled:	05-Jul-2022	05-Jul-2022
				Asbestos Lab:	DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	6.9	7.6
pH	U	2010		4.0	8.9	9.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	19	19
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	17000
Sulphate (Total)	U	2430	%	0.010	0.13	1.6
Arsenic	U	2455	mg/kg	0.5	5.5	12
Barium	U	2455	mg/kg	0	29	39
Beryllium	U	2455	mg/kg	0.5	< 0.5	0.5
Cadmium	U	2455	mg/kg	0.10	0.13	0.17
Manganese	U	2455	mg/kg	1.0	250	340
Molybdenum	U	2455	mg/kg	0.5	< 0.5	2.3
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	14	15
Mercury	U	2455	mg/kg	0.05	< 0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	13	20
Lead	U	2455	mg/kg	0.50	9.6	12
Selenium	U	2455	mg/kg	0.25	0.61	0.99
Vanadium	U	2455	mg/kg	0.5	17	21
Zinc	U	2455	mg/kg	0.50	39	61
Chromium (Trivalent)	N	2490	mg/kg	1.0	14	13
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.010	0.0036
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25564	22-25564
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463160	1463162
Order No.: D11866			Client Sample Ref.:		ES	ES
			Client Sample ID.:		3	8
			Sample Location:		TP12	TP12
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0	
Chloromethane	U	2760	µg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	
Bromomethane	U	2760	µg/kg	20	< 20	
Chloroethane	U	2760	µg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	
Trichloromethane	U	2760	µg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0	
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0	
Trichloroethene	N	2760	µg/kg	1.0	< 1.0	
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	
Dibromomethane	U	2760	µg/kg	1.0	< 1.0	
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10	
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0	

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25564	22-25564
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463160	1463162
Order No.: D11866			Client Sample Ref.:		ES	ES
			Client Sample ID.:		3	8
			Sample Location:		TP12	TP12
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	µg/kg	10	< 10	
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0	
Tribromomethane	U	2760	µg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	
Bromobenzene	U	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50	
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	
Phenol	U	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25564	22-25564
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463160	1463162
Order No.: D11866			Client Sample Ref.:		ES	ES
			Client Sample ID.:		3	8
			Sample Location:		TP12	TP12
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790	mg/kg	0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Naphthalene	U	2790	mg/kg	0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	
Fluorene	U	2790	mg/kg	0.50	< 0.50	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25564	22-25564
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463160	1463162
Order No.: D11866			Client Sample Ref.:		ES	ES
			Client Sample ID.:		3	8
			Sample Location:		TP12	TP12
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Azobenzene	U	2790	mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	
Anthracene	U	2790	mg/kg	0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Pyrene	U	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25564	22-25564
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463160	1463162
Order No.: D11866			Client Sample Ref.:		ES	ES
			Client Sample ID.:		3	8
			Sample Location:		TP12	TP12
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.30	1.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-25577-1		
Initial Date of Issue:	26-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stanstead Terminal (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	07-Jul-2022
Order No.:	D11866	**Date Instructed:**	18-Jul-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	26-Jul-2022
Date Approved:	25-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25577
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463202
Order No.: D11866			Client Sample Ref.:		ES5
			Client Sample ID.:		5
			Sample Location:		DS10
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		05-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	17
pH	U	2010		4.0	9.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.2
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	150
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	19000
Sulphate (Total)	U	2430	%	0.010	0.039
Arsenic	U	2455	mg/kg	0.5	7.2
Barium	U	2455	mg/kg	0	87
Beryllium	U	2455	mg/kg	0.5	0.6
Cadmium	U	2455	mg/kg	0.10	0.14
Manganese	U	2455	mg/kg	1.0	810
Molybdenum	U	2455	mg/kg	0.5	0.5
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	9.5
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	24
Lead	U	2455	mg/kg	0.50	9.1
Selenium	U	2455	mg/kg	0.25	0.39
Vanadium	U	2455	mg/kg	0.5	24
Zinc	U	2455	mg/kg	0.50	38
Chromium (Trivalent)	N	2490	mg/kg	1.0	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.0039
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-25577
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1463202
Order No.: D11866				Client Sample Ref.:	ES5
				Client Sample ID.:	5
				Sample Location:	DS10
				Sample Type:	SOIL
				Top Depth (m):	2.00
				Date Sampled:	05-Jul-2022
				Asbestos Lab:	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-25577
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1463202
Order No.: D11866				Client Sample Ref.:	ES5
				Client Sample ID.:	5
				Sample Location:	DS10
				Sample Type:	SOIL
				Top Depth (m):	2.00
				Date Sampled:	05-Jul-2022
				Asbestos Lab:	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25577
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463202
Order No.: D11866			Client Sample Ref.:		ES5
			Client Sample ID.:		5
			Sample Location:		DS10
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		05-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25577
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463202
Order No.: D11866			Client Sample Ref.:		ES5
			Client Sample ID.:		5
			Sample Location:		DS10
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		05-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010

Results - Soil

Project: D2027-22, Stanstead Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25577
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463202
Order No.: D11866			Client Sample Ref.:		ES5
			Client Sample ID.:		5
			Sample Location:		DS10
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Date Sampled:		05-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-25597-1		
Initial Date of Issue:	19-Jul-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	07-Jul-2022
Order No.:	D11866	**Date Instructed:**	08-Jul-2022
No. of Samples:	2		
Turnaround (Wkdays):	8	**Results Due:**	19-Jul-2022
Date Approved:	19-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25597	22-25597
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463279	1463282
Order No.: D11866			Client Sample Ref.:		ES19	ES5
			Client Sample ID.:			5
			Sample Location:		CP04	DS08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		3.00	2.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	16	18
pH	U	2010		4.0	8.0	7.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.51	1.3
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	110	36
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	12000	30000
Sulphate (Total)	U	2430	%	0.010	0.25	0.11
Arsenic	U	2455	mg/kg	0.5	5.7	3.2
Barium	U	2455	mg/kg	0	36	35
Beryllium	U	2455	mg/kg	0.5	0.7	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.41	0.11
Manganese	U	2455	mg/kg	1.0	320	190
Molybdenum	U	2455	mg/kg	0.5	0.8	< 0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	15	7.0
Mercury	U	2455	mg/kg	0.05	< 0.05	0.05
Nickel	U	2455	mg/kg	0.50	16	7.9
Lead	U	2455	mg/kg	0.50	17	12
Selenium	U	2455	mg/kg	0.25	0.44	0.30
Vanadium	U	2455	mg/kg	0.5	19	7.6
Zinc	U	2455	mg/kg	0.50	41	37
Chromium (Trivalent)	N	2490	mg/kg	1.0	13	5.1
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.013	0.015
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	25
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	130
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	260
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	5000
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	160
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	5600

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25597	22-25597
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463279	1463282
Order No.: D11866			Client Sample Ref.:		ES19	ES5
			Client Sample ID.:			5
			Sample Location:		CP04	DS08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		3.00	2.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	110
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	840
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	1200
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	2200
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	6000
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	860
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	11000
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	17000
Dichlorodifluoromethane	U	2760	µg/kg	1.0		< 1.0
Chloromethane	U	2760	µg/kg	1.0		< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0		< 1.0
Bromomethane	U	2760	µg/kg	20		< 20
Chloroethane	U	2760	µg/kg	2.0		< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0		< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0		< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0		< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0		< 1.0
Bromochloromethane	U	2760	µg/kg	5.0		< 5.0
Trichloromethane	U	2760	µg/kg	1.0		< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0		< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0		< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0		< 1.0
Benzene	U	2760	µg/kg	1.0	3.2	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0		< 2.0
Trichloroethene	N	2760	µg/kg	1.0		< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0		< 1.0
Dibromomethane	U	2760	µg/kg	1.0		< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0		< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10		< 10
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10		< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10		< 10
Tetrachloroethene	U	2760	µg/kg	1.0		< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25597	22-25597
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463279	1463282
Order No.: D11866			Client Sample Ref.:		ES19	ES5
			Client Sample ID.:			5
			Sample Location:		CP04	DS08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		3.00	2.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	µg/kg	2.0		< 2.0
Dibromochloromethane	U	2760	µg/kg	10		< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0		< 5.0
Chlorobenzene	U	2760	µg/kg	1.0		< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0		< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	6.5	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	µg/kg	1.0		< 1.0
Tribromomethane	U	2760	µg/kg	1.0		< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0		< 1.0
Bromobenzene	U	2760	µg/kg	1.0		< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50		< 50
N-Propylbenzene	U	2760	µg/kg	1.0		< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0		< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0		< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0		< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0		< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0		< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0		< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0		< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0		< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0		< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50		< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0		< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0		< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0		< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50		< 0.50
Phenol	U	2790	mg/kg	0.50		< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50		< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50		< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25597	22-25597
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463279	1463282
Order No.: D11866			Client Sample Ref.:		ES19	ES5
			Client Sample ID.:			5
			Sample Location:		CP04	DS08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		3.00	2.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50		< 0.50
2-Methylphenol	U	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50		< 0.50
Hexachloroethane	N	2790	mg/kg	0.50		< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50		< 0.50
4-Methylphenol	U	2790	mg/kg	0.50		< 0.50
Nitrobenzene	U	2790	mg/kg	0.50		< 0.50
Isophorone	U	2790	mg/kg	0.50		< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50		< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50		< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50		< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50		< 0.50
Naphthalene	U	2790	mg/kg	0.50		< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50		< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50		< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50		< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50		< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50		< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50		< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50		< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50		< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50		< 0.50
Acenaphthylene	U	2790	mg/kg	0.50		< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50		< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50
Acenaphthene	U	2790	mg/kg	0.50		< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50		< 0.50
Dibenzofuran	U	2790	mg/kg	0.50		< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50		< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50		< 0.50
Fluorene	U	2790	mg/kg	0.50		< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50		< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50		< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-25597	22-25597
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1463279	1463282
Order No.: D11866				Client Sample Ref.:	ES19	ES5
				Client Sample ID.:		5
				Sample Location:	CP04	DS08
				Sample Type:	SOIL	SOIL
				Top Depth (m):	3.00	2.00
				Date Sampled:	05-Jul-2022	05-Jul-2022
				Asbestos Lab:	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Azobenzene	U	2790	mg/kg	0.50		< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50		< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50		< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50		< 0.50
Phenanthrene	U	2790	mg/kg	0.50		< 0.50
Anthracene	U	2790	mg/kg	0.50		< 0.50
Carbazole	U	2790	mg/kg	0.50		< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50		< 0.50
Fluoranthene	U	2790	mg/kg	0.50		< 0.50
Pyrene	U	2790	mg/kg	0.50		< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50		< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50		< 0.50
Chrysene	U	2790	mg/kg	0.50		< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50		< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50		< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50		< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50		< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50		< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50		< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50		< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50		< 0.50
Naphthalene	N	2800	mg/kg	0.010	0.26	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	0.24	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	1.4	< 0.010
Fluorene	N	2800	mg/kg	0.010	1.5	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	9.2	0.29
Anthracene	N	2800	mg/kg	0.010	3.3	0.084
Fluoranthene	N	2800	mg/kg	0.010	23	0.99
Pyrene	N	2800	mg/kg	0.010	19	0.93
Benzo[a]anthracene	N	2800	mg/kg	0.010	8.3	< 0.010
Chrysene	N	2800	mg/kg	0.010	7.5	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	10	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	3.5	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	8.1	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	4.3	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	1.2	< 0.010

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25597	22-25597
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1463279	1463282
Order No.: D11866			Client Sample Ref.:		ES19	ES5
			Client Sample ID.:			5
			Sample Location:		CP04	DS08
			Sample Type:		SOIL	SOIL
			Top Depth (m):		3.00	2.00
			Date Sampled:		05-Jul-2022	05-Jul-2022
			Asbestos Lab:		DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	4.6	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	110	2.3
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-25777-1
Initial Date of Issue:	21-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stansted Terminal (ST2) - Ground Investigation
Quotation No.:	Q22-27911
Order No.:	D11866
No. of Samples:	1
Turnaround (Wkdays):	7
Date Approved:	20-Jul-2022
Approved By:	[redacted]
Details:	Stuart Henderson, Technical Manager

Date Received:	08-Jul-2022
Date Instructed:	11-Jul-2022
Results Due:	19-Jul-2022

Results - Soil

Project: D2027-22, Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25777
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1464067
Order No.: D11866			Client Sample Ref.:		ES106
			Client Sample ID.:		106
			Sample Location:		RC04
			Sample Type:		SOIL
			Top Depth (m):		2.90
			Bottom Depth (m):		2.90
			Date Sampled:		06-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	11
pH	U	2010		4.0	8.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.90
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	440
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	10000
Sulphate (Total)	U	2430	%	0.010	0.050
Arsenic	U	2455	mg/kg	0.5	5.3
Barium	U	2455	mg/kg	0	50
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.12
Manganese	U	2455	mg/kg	1.0	420
Molybdenum	U	2455	mg/kg	0.5	0.6
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	12
Mercury	U	2455	mg/kg	0.05	< 0.05
Nickel	U	2455	mg/kg	0.50	19
Lead	U	2455	mg/kg	0.50	13
Selenium	U	2455	mg/kg	0.25	0.48
Vanadium	U	2455	mg/kg	0.5	19
Zinc	U	2455	mg/kg	0.50	41
Chromium (Trivalent)	N	2490	mg/kg	1.0	15
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.024
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25777
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1464067
Order No.: D11866			Client Sample Ref.:		ES106
			Client Sample ID.:		106
			Sample Location:		RC04
			Sample Type:		SOIL
			Top Depth (m):		2.90
			Bottom Depth (m):		2.90
			Date Sampled:		06-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.57
Pyrene	N	2800	mg/kg	0.010	0.54
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	1.1
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

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<	"less than"
>	"greater than"
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All results are expressed on a dry weight basis

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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-25943-1
Initial Date of Issue:	21-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	11-Jul-2022
Order No.:	D11866	**Date Instructed:**	12-Jul-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	20-Jul-2022
Date Approved:	21-Jul-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25943
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1464929
Order No.: D11866			Client Sample Ref.:		ES9
			Client Sample ID.:		9
			Sample Location:		CP11
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Bottom Depth (m):		2.00
			Date Sampled:		07-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	23
pH	U	2010		4.0	8.1
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	10
Cyanide (Free)	U	2300	mg/kg	0.50	1.3
Iron (Total)	N	2430	mg/kg	100	11000
Sulphate (Total)	U	2430	%	0.010	0.055
Arsenic	U	2455	mg/kg	0.5	7.7
Barium	U	2455	mg/kg	0	26
Beryllium	U	2455	mg/kg	0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	< 0.10
Manganese	U	2455	mg/kg	1.0	230
Molybdenum	U	2455	mg/kg	0.5	< 0.5
Antimony	N	2455	mg/kg	2.0	2.0
Copper	U	2455	mg/kg	0.50	60
Mercury	U	2455	mg/kg	0.05	0.10
Nickel	U	2455	mg/kg	0.50	13
Lead	U	2455	mg/kg	0.50	52
Selenium	U	2455	mg/kg	0.25	0.43
Vanadium	U	2455	mg/kg	0.5	19
Zinc	U	2455	mg/kg	0.50	100
Chromium (Trivalent)	N	2490	mg/kg	1.0	14
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.010
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22, Stanstead Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-25943
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1464929
Order No.: D11866			Client Sample Ref.:		ES9
			Client Sample ID.:		9
			Sample Location:		CP11
			Sample Type:		SOIL
			Top Depth (m):		2.00
			Bottom Depth (m):		2.00
			Date Sampled:		07-Jul-2022
			Asbestos Lab:		DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Benzene	U	2760	µg/kg	1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	< 0.010
Pyrene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	< 0.010
Chrysene	N	2800	mg/kg	0.010	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-26907-1
Initial Date of Issue:	26-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation
Quotation No.:	Q22-27911
Date Received:	15-Jul-2022
Order No.:	D11866
Date Instructed:	15-Jul-2022
No. of Samples:	2
Turnaround (Wkdays):	7
Results Due:	25-Jul-2022
Date Approved:	26-Jul-2022
Approved By:	[redacted]
Details:	Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-26907	22-26907
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1469168	1469170
Order No.: D11866				Client Sample Ref.:	3	12
				Sample Location:	CP10	CP10
				Sample Type:	SOIL	SOIL
				Top Depth (m):	1.50	3.00
				Date Sampled:	12-Jul-2022	12-Jul-2022
				Asbestos Lab:	DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192		N/A	No Asbestos Detected	
Moisture	N	2030	%	0.020	16	20
pH	U	2010		4.0	7.4	7.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	11	1200
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	13000	4100
Sulphate (Total)	U	2430	%	0.010	0.31	1.4
Arsenic	U	2455	mg/kg	0.5	4.9	7.3
Barium	U	2455	mg/kg	0	38	22
Beryllium	U	2455	mg/kg	0.5	< 0.5	< 0.5
Cadmium	U	2455	mg/kg	0.10	0.13	< 0.10
Manganese	U	2455	mg/kg	1.0	330	200
Molybdenum	U	2455	mg/kg	0.5	0.8	0.5
Antimony	N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper	U	2455	mg/kg	0.50	14	7.1
Mercury	U	2455	mg/kg	0.05	0.06	< 0.05
Nickel	U	2455	mg/kg	0.50	15	13
Lead	U	2455	mg/kg	0.50	17	5.6
Selenium	U	2455	mg/kg	0.25	0.26	< 0.25
Vanadium	U	2455	mg/kg	0.5	14	12
Zinc	U	2455	mg/kg	0.50	50	30
Chromium (Trivalent)	N	2490	mg/kg	1.0	12	7.9
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.031	0.061
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-26907	22-26907
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469168	1469170
Order No.: D11866			Client Sample Ref.:		3	12
			Sample Location:		CP10	CP10
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.50	3.00
			Date Sampled:		12-Jul-2022	12-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10
Dichlorodifluoromethane	U	2760	mg/kg	0.0010	< 0.0010	
Chloromethane	U	2760	mg/kg	0.0010	< 0.0010	
Vinyl Chloride	U	2760	mg/kg	0.0010	< 0.0010	
Bromomethane	U	2760	mg/kg	0.020	< 0.020	
Chloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Trichlorofluoromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
Trans 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloroethane	U	2760	mg/kg	0.0010	< 0.0010	
cis 1,2-Dichloroethene	U	2760	mg/kg	0.0010	< 0.0010	
Bromochloromethane	U	2760	mg/kg	0.0050	< 0.0050	
Trichloromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1,1-Trichloroethane	U	2760	mg/kg	0.0010	< 0.0010	
Tetrachloromethane	U	2760	mg/kg	0.0010	< 0.0010	
1,1-Dichloropropene	U	2760	mg/kg	0.0010	< 0.0010	
Benzene	U	2760	mg/kg	0.0010	< 0.0010	
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Trichloroethene	N	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichloropropane	U	2760	mg/kg	0.0010	< 0.0010	
Dibromomethane	U	2760	mg/kg	0.0010	< 0.0010	
Bromodichloromethane	U	2760	mg/kg	0.0050	< 0.0050	
cis-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
Toluene	U	2760	mg/kg	0.0010	< 0.0010	
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	mg/kg	0.010	< 0.010	
1,1,2-Trichloroethane	U	2760	mg/kg	0.010	< 0.010	
Tetrachloroethene	U	2760	mg/kg	0.0010	< 0.0010	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-26907	22-26907
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469168	1469170
Order No.: D11866			Client Sample Ref.:		3	12
			Sample Location:		CP10	CP10
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.50	3.00
			Date Sampled:		12-Jul-2022	12-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
1,3-Dichloropropane	U	2760	mg/kg	0.0020	< 0.0020	
Dibromochloromethane	U	2760	mg/kg	0.010	< 0.010	
1,2-Dibromoethane	U	2760	mg/kg	0.0050	< 0.0050	
Chlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,1,1,2-Tetrachloroethane	U	2760	mg/kg	0.0020	< 0.0020	
Ethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	mg/kg	0.0010	< 0.0010	
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	mg/kg	0.0010	< 0.0010	
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	mg/kg	0.0010	< 0.0010	
Tribromomethane	U	2760	mg/kg	0.0010	< 0.0010	
Isopropylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Bromobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichloropropane	N	2760	mg/kg	0.050	< 0.050	
N-Propylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
2-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010	
1,3,5-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
4-Chlorotoluene	U	2760	mg/kg	0.0010	< 0.0010	
Tert-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,4-Trimethylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
Sec-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,3-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
4-Isopropyltoluene	N	2760	mg/kg	0.0010	< 0.0010	
1,4-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
N-Butylbenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2-Dichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
1,2-Dibromo-3-Chloropropane	U	2760	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	U	2760	mg/kg	0.0010	< 0.0010	
Hexachlorobutadiene	U	2760	mg/kg	0.0010	< 0.0010	
1,2,3-Trichlorobenzene	U	2760	mg/kg	0.0020	< 0.0020	
Methyl Tert-Butyl Ether	U	2760	mg/kg	0.0010	< 0.0010	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	2790	mg/kg	0.050	< 0.050	
Phenol	N	2790	mg/kg	0.050	< 0.050	
2-Chlorophenol	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-26907	22-26907
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469168	1469170
Order No.: D11866			Client Sample Ref.:		3	12
			Sample Location:		CP10	CP10
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.50	3.00
			Date Sampled:		12-Jul-2022	12-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Bis-(2-Chloroethyl)Ether	N	2790	mg/kg	0.050	< 0.050	
1,3-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,4-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
1,2-Dichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
2-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroisopropyl)Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachloroethane	N	2790	mg/kg	0.050	< 0.050	
N-Nitrosodi-n-propylamine	N	2790	mg/kg	0.050	< 0.050	
4-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
Nitrobenzene	N	2790	mg/kg	0.050	< 0.050	
Isophorone	N	2790	mg/kg	0.050	< 0.050	
2-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
2,4-Dimethylphenol	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Chloroethoxy)Methane	N	2790	mg/kg	0.050	< 0.050	
2,4-Dichlorophenol	N	2790	mg/kg	0.050	< 0.050	
1,2,4-Trichlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2790	mg/kg	0.050	< 0.050	
4-Chloroaniline	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobutadiene	N	2790	mg/kg	0.050	< 0.050	
4-Chloro-3-Methylphenol	N	2790	mg/kg	0.050	< 0.050	
2-Methylnaphthalene	N	2790	mg/kg	0.050	< 0.050	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.050	< 0.050	
2,4,6-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2,4,5-Trichlorophenol	N	2790	mg/kg	0.050	< 0.050	
2-Chloronaphthalene	N	2790	mg/kg	0.050	< 0.050	
2-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Acenaphthylene	N	2790	mg/kg	0.050	< 0.050	
Dimethylphthalate	N	2790	mg/kg	0.050	< 0.050	
2,6-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Acenaphthene	N	2790	mg/kg	0.050	< 0.050	
3-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	
Dibenzofuran	N	2790	mg/kg	0.050	< 0.050	
4-Chlorophenylphenylether	N	2790	mg/kg	0.050	< 0.050	
2,4-Dinitrotoluene	N	2790	mg/kg	0.050	< 0.050	
Fluorene	N	2790	mg/kg	0.050	< 0.050	
Diethyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
4-Nitroaniline	N	2790	mg/kg	0.050	< 0.050	

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-26907	22-26907
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469168	1469170
Order No.: D11866			Client Sample Ref.:		3	12
			Sample Location:		CP10	CP10
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.50	3.00
			Date Sampled:		12-Jul-2022	12-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.050	< 0.050	
Azobenzene	N	2790	mg/kg	0.050	< 0.050	
4-Bromophenylphenyl Ether	N	2790	mg/kg	0.050	< 0.050	
Hexachlorobenzene	N	2790	mg/kg	0.050	< 0.050	
Pentachlorophenol	N	2790	mg/kg	0.050	< 0.050	
Phenanthrene	N	2790	mg/kg	0.050	0.060	
Anthracene	N	2790	mg/kg	0.050	0.060	
Carbazole	N	2790	mg/kg	0.050	0.060	
Di-N-Butyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Fluoranthene	N	2790	mg/kg	0.050	0.096	
Pyrene	N	2790	mg/kg	0.050	0.084	
Butylbenzyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Benzo[a]anthracene	N	2790	mg/kg	0.050	< 0.050	
Chrysene	N	2790	mg/kg	0.050	< 0.050	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.050	< 0.050	
Di-N-Octyl Phthalate	N	2790	mg/kg	0.050	< 0.050	
Benzo[b]fluoranthene	N	2790	mg/kg	0.050	< 0.050	
Benzo[k]fluoranthene	N	2790	mg/kg	0.050	< 0.050	
Benzo[a]pyrene	N	2790	mg/kg	0.050	< 0.050	
Indeno(1,2,3-c,d)Pyrene	N	2790	mg/kg	0.050	< 0.050	
Dibenz(a,h)Anthracene	N	2790	mg/kg	0.050	< 0.050	
Benzo[g,h,i]perylene	N	2790	mg/kg	0.050	< 0.050	
4-Nitrophenol	N	2790	mg/kg	0.050	< 0.050	
Naphthalene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Fluoranthene	N	2800	mg/kg	0.010	0.52	< 0.010
Pyrene	N	2800	mg/kg	0.010	0.38	< 0.010
Benzo[a]anthracene	N	2800	mg/kg	0.010	0.26	< 0.010
Chrysene	N	2800	mg/kg	0.010	0.25	< 0.010
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	0.41	< 0.010
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.16	< 0.010
Benzo[a]pyrene	N	2800	mg/kg	0.010	0.18	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010	< 0.010

Results - Soil

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-26907	22-26907
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469168	1469170
Order No.: D11866			Client Sample Ref.:		3	12
			Sample Location:		CP10	CP10
			Sample Type:		SOIL	SOIL
			Top Depth (m):		1.50	3.00
			Date Sampled:		12-Jul-2022	12-Jul-2022
			Asbestos Lab:		DURHAM	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	2.2	< 0.20
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	22-27043-1
Initial Date of Issue:	27-Jul-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen Platon Kostelletos
Project	D2027-22 Stansted Terminal 2 (ST2)- Ground Investigation
Quotation No.:	Q22-27911
Order No.:	D11866
No. of Samples:	1
Turnaround (Wkdays):	7
Date Approved:	27-Jul-2022

Date Received:	18-Jul-2022
Date Instructed:	19-Jul-2022
Results Due:	27-Jul-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected
Moisture	N	2030	%	0.020	9.7
pH	U	2010		4.0	9.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.2
Sulphate (2:1 Water Soluble) as SO4 mg/l	U	2120	mg/l	10.000	2100
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Iron (Total)	N	2430	mg/kg	100	16000
Sulphate (Total)	U	2430	%	0.010	0.26
Arsenic	U	2455	mg/kg	0.5	180
Barium	U	2455	mg/kg	0	60
Beryllium	U	2455	mg/kg	0.5	1.6
Cadmium	U	2455	mg/kg	0.10	0.24
Manganese	U	2455	mg/kg	1.0	660
Molybdenum	U	2455	mg/kg	0.5	0.8
Antimony	N	2455	mg/kg	2.0	< 2.0
Copper	U	2455	mg/kg	0.50	250
Mercury	U	2455	mg/kg	0.05	0.10
Nickel	U	2455	mg/kg	0.50	58
Lead	U	2455	mg/kg	0.50	65
Selenium	U	2455	mg/kg	0.25	1.3
Vanadium	U	2455	mg/kg	0.5	33
Zinc	U	2455	mg/kg	0.50	150
Chromium (Trivalent)	N	2490	mg/kg	1.0	36
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Fraction of Organic Carbon	U	2625		0.0010	0.023
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	26
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	430
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	180
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	640

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	19
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	1200
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	230
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	1400
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	2000
Dichlorodifluoromethane	U	2760	µg/kg	1.0	< 1.0
Chloromethane	U	2760	µg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0
Bromomethane	U	2760	µg/kg	20	< 20
Chloroethane	U	2760	µg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0
Trichloromethane	U	2760	µg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	µg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0
Benzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	µg/kg	2.0	< 2.0
Trichloroethene	N	2760	µg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0
Dibromomethane	U	2760	µg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	µg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
Toluene	U	2760	µg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	µg/kg	10	< 10
Tetrachloroethene	U	2760	µg/kg	1.0	< 1.0

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,3-Dichloropropane	U	2760	µg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	µg/kg	10	< 10
1,2-Dibromoethane	U	2760	µg/kg	5.0	< 5.0
Chlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	µg/kg	2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0
Styrene	U	2760	µg/kg	1.0	< 1.0
Tribromomethane	U	2760	µg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0
Bromobenzene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	µg/kg	50	< 50
N-Propylbenzene	U	2760	µg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	µg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	0.97
Anthracene	U	2790	mg/kg	0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	1.8
Pyrene	U	2790	mg/kg	0.50	1.4
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.73
Chrysene	U	2790	mg/kg	0.50	0.72
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	0.93
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.64
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	N	2800	mg/kg	0.010	< 0.010
Acenaphthylene	N	2800	mg/kg	0.010	< 0.010
Acenaphthene	N	2800	mg/kg	0.010	< 0.010
Fluorene	N	2800	mg/kg	0.010	< 0.010
Phenanthrene	N	2800	mg/kg	0.010	1.2
Anthracene	N	2800	mg/kg	0.010	0.32
Fluoranthene	N	2800	mg/kg	0.010	2.0
Pyrene	N	2800	mg/kg	0.010	1.7
Benzo[a]anthracene	N	2800	mg/kg	0.010	1.0
Chrysene	N	2800	mg/kg	0.010	0.86
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	1.3
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	0.51
Benzo[a]pyrene	N	2800	mg/kg	0.010	1.2
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	< 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	< 0.010

Results - Soil

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-27043
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1469864
Order No.: D11866			Client Sample Ref.:		ES15
			Client Sample ID.:		15
			Sample Location:		CP06
			Sample Type:		SOIL
			Top Depth (m):		2.0
			Date Sampled:		14-Jul-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	< 0.010
Total Of 16 PAH's	N	2800	mg/kg	0.20	10
Total Phenols	U	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-30634-3		
Initial Date of Issue:	25-Aug-2022	**Date of Re-Issue:**	25-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos John Emerson		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D11866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	24-Aug-2022	**Subcon Results Due:**	02-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-30634
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1485964
Order No.: D11866				Client Sample Ref.:	EW090322 CP04
				Client Sample ID.:	EW090322 CP04
				Sample Location:	CP04
				Sample Type:	WATER
				Top Depth (m):	10.00
				Bottom Depth (m):	12.00
				Date Sampled:	09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	8.3
Total Dissolved Solids	N	1020	mg/l	1.0	400
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	220
Chloride	U	1220	mg/l	1.0	56
Fluoride	U	1220	mg/l	0.050	0.13
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.12
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	40
Sulphate	U	1220	mg/l	1.0	120
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	75
Magnesium (Dissolved)	U	1455	mg/l	0.20	19
Sodium (Dissolved)	U	1455	mg/l	1.50	59
Total Hardness as CaCO3	U	1270	mg/l	15	270
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0011
Boron (Dissolved)	U	1455	mg/l	0.01	1.1
Barium (Dissolved)	U	1455	mg/l	0.005	0.24
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.023
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	< 0.0002
Nickel (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	51
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30634
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1485964
Order No.: D11866			Client Sample Ref.:		EW090322 CP04
			Client Sample ID.:		EW090322 CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		12.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	24 August 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220812-57
Your Reference:	22-30634
Location:	Not Specified
Report No:	658766
Order Number:	22632

We received 1 sample on Friday August 12, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday August 24, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26720448	1485964			09/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 220812-57 **Report Number:** 658766 **Superseded Report:**
Client Ref.: 22-30634 **Location:** Not Specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)		26720448
	Customer Sample Reference		1485964
	AGS Reference		
	Depth (m)		
	Container		1lplastic (ALE221)
	Sample Type		UNL
PFAS Liquids	All	NDPs: 0 Tests: 1	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 220812-57 **Report Number:** 658766 **Superseded Report:**
Client Ref.: 22-30634 **Location:** Not Specified

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

		Customer Sample Ref.	1485964
		Depth (m)	.
		Sample Type	Unspecified Liquid (UNL)
		Date Sampled	09/08/2022
		Sample Time	14:30:00
		Date Received	12/08/2022
		SDG Ref	220812-57
		Lab Sample No.(s)	26720448
		AGS Reference	
Component	**LOD/Units**	**Method**	
PFOA (335-67-1)	<0.65 ng/l	TM337	<0.65
Linear PFOS (1763-23-1)	<0.65 ng/l	TM337	<0.65
Branched PFOS	<0.65 ng/l	TM337	<0.65
Total PFOS	<0.65 ng/l	TM337	<0.65

CERTIFICATE OF ANALYSIS

SDG: 220812-57 **Report Number:** 658766 **Superseded Report:**
Client Ref.: 22-30634 **Location:** Not Specified

Table of Results - Appendix

Method No	Reference	Description
TM337	PFAS in Environmental Water Matrices	Analysis of PFAS

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220812-57 **Report Number:** 658766 **Superseded Report:**
Client Ref.: 22-30634 **Location:** Not Specified

Test Completion Dates

Lab Sample No(s)	26720448	
Customer Sample Ref.	1485964	
AGS Ref.		
Depth		
Type	Unspecified Liq	
PFAS Liquids	24-Aug-2022	

SDG:	220812-57	**Report Number:**	658766	**Superseded Report:**	
Client Ref:	22-30634	**Location:**	Not Specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

eurofins | Chemtest
Eurofins Chemtest Ltd
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Newmarket
CB8 0AL
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Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-30656-3		
Initial Date of Issue:	25-Aug-2022	**Date of Re-Issue:**	25-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos John Emerson		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D11866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	24-Aug-2022	**Subcon Results Due:**	02-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluorooctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	7.9
Total Dissolved Solids	N	1020	mg/l	1.0	370
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	210
Chloride	U	1220	mg/l	1.0	48
Fluoride	U	1220	mg/l	0.050	0.24
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.12
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	37
Sulphate	U	1220	mg/l	1.0	110
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	72
Magnesium (Dissolved)	U	1455	mg/l	0.20	20
Sodium (Dissolved)	U	1455	mg/l	1.50	40
Total Hardness as CaCO3	U	1270	mg/l	15	260
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0021
Boron (Dissolved)	U	1455	mg/l	0.01	0.09
Barium (Dissolved)	U	1455	mg/l	0.005	0.033
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	< 0.0002
Nickel (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	2.2
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30656
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486069
Order No.: D11866			Client Sample Ref.:		EW090822-CP03
			Client Sample ID.:		EW090822-CP03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		12.00
			Bottom Depth (m):		15.00
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-30656
Our reference	:	Project 1399122
Validation Ref.	:	1399122_certificaat_v1
Verificationcode	:	MMGD-KIDY-BHVG-TGLI
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 24 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
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Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1399122**
Your Project Description	:	**22-30656**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7298363 = 1486069 CP03

Client sampling date	:	**09/08/2022**
Date of receipt	:	**18/08/2022**
Startdate	:	**18/08/2022**
Reference number	:	**7298363**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1399122**
Your Project Description	:	**22-30656**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1399122**
Your Project Description	:	**22-30656**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

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Email: info@chemtest.com

Amended Report

Report No.:	22-30657-3		
Initial Date of Issue:	25-Aug-2022	**Date of Re-Issue:**	25-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Platon Kostelletos Dave Beskeen John Emerson		
Project	D2027-22 Stansted Termianl 2 (ST2) Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D11866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	24-Aug-2022	**Subcon Results Due:**	02-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
			Top Depth (m):		8.00
			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	8.0
Total Dissolved Solids	N	1020	mg/l	1.0	360
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	360
Chloride	U	1220	mg/l	1.0	43
Fluoride	U	1220	mg/l	0.050	0.30
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.093
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	30
Sulphate	U	1220	mg/l	1.0	91
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	55
Magnesium (Dissolved)	U	1455	mg/l	0.20	17
Sodium (Dissolved)	U	1455	mg/l	1.50	47
Total Hardness as CaCO3	U	1270	mg/l	15	210
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0031
Boron (Dissolved)	U	1455	mg/l	0.01	0.07
Barium (Dissolved)	U	1455	mg/l	0.005	0.028
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	< 0.0002
Nickel (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
			Top Depth (m):		8.00
			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	9.4
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
			Top Depth (m):		8.00
			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
			Top Depth (m):		8.00
			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
			Top Depth (m):		8.00
			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-30657
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1486070
Order No.: D11866				Client Sample Ref.:	EW090826 CP01
				Client Sample ID.:	EW090826 CP01
				Sample Location:	CP01
				Sample Type:	WATER
				Top Depth (m):	8.00
				Bottom Depth (m):	9.50
				Date Sampled:	09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050

Results - Water

Project: D2027-22 Stansted Termianl 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30657
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486070
Order No.: D11866			Client Sample Ref.:		EW090826 CP01
			Client Sample ID.:		EW090826 CP01
			Sample Location:		CP01
			Sample Type:		WATER
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			Bottom Depth (m):		9.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-30657
Our reference	:	Project 1399120
Validation Ref.	:	1399120_certificaat_v1
Verificationcode	:	ORCO-ZDQP-HAJQ-HCYT
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 24 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1399120**
Your Project Description	:	**22-30657**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7298358 = 1486070 CP01

Client sampling date	:	**09/08/2022**
Date of receipt	:	**18/08/2022**
Startdate	:	**18/08/2022**
Reference number	:	**7298358**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1399120**
Your Project Description	:	**22-30657**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1399120**
Your Project Description	:	**22-30657**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 August 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220815-58
Your Reference:	22-30657
Location:	Not Specified
Report No:	659014
Order Number:	22-30657

We received 1 sample on Monday August 15, 2022 and 1 of these samples were scheduled for analysis which was completed on Friday August 26, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Version: 3.3 Version Issued: 26/08/2022

CERTIFICATE OF ANALYSIS

SDG: 220815-58 **Report Number:** 659014 **Superseded Report:**
Client Ref.: 22-30657 **Location:** Not Specified

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26732942	1486070			09/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220815-58 **Report Number:** 659014 **Superseded Report:**
Client Ref.: 22-30657 **Location:** Not Specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)		26732942
	Customer Sample Reference		1486070
	AGS Reference		
	Depth (m)		
	Container		1000ml glass bottle (ALE220)
	Sample Type		UNL
PFAS Liquids	All	NDPs: 0 Tests: 1	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 220815-58 **Report Number:** 659014 **Superseded Report:**
Client Ref.: 22-30657 **Location:** Not Specified

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.	1486070
Depth (m)	.
Sample Type	Unspecified Liquid (UNL)
Date Sampled	09/08/2022
Sample Time	.
Date Received	15/08/2022
SDG Ref	220815-58
Lab Sample No.(s)	26732942
AGS Reference	

Component	LOD/Units	Method	
PFOA (335-67-1)	<0.65 ng/l	TM337	<0.65
Linear PFOS (1763-23-1)	<0.65 ng/l	TM337	<0.65
Branched PFOS	<0.65 ng/l	TM337	<0.65
Total PFOS	<0.65 ng/l	TM337	<0.65

Table of Results - Appendix

Method No	Reference	Description
TM337	PFAS in Environmental Water Matrices	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220815-58 **Report Number:** 659014 **Superseded Report:**
Client Ref.: 22-30657 **Location:** Not Specified

Test Completion Dates

Lab Sample No(s)	26732942
Customer Sample Ref.	1486070
AGS Ref.	
Depth	
Type	Unspecified Liq
PFAS Liquids	26-Aug-2022

SDG:	220815-58	**Report Number:**	659014	**Superseded Report:**	
Client Ref:	22-30657	**Location:**	Not Specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

eurofins | Chemtest
Eurofins Chemtest Ltd
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Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-30659-3		
Initial Date of Issue:	25-Aug-2022	**Date of Re-Issue:**	25-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos John Emerson		
Project	D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D1866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	24-Aug-2022	**Subcon Results Due:**	02-Sep-2022
Approved By:	[redacted]		
Details:	Stuart Henderson, Technical Manager		

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-30659
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1486073
Order No.: D1866				Client Sample Ref.:	EW090822 RC01
				Client Sample ID.:	EW090822 RC01
				Sample Location:	RC01
				Sample Type:	WATER
				Top Depth (m):	5.00
				Bottom Depth (m):	5.58
				Date Sampled:	09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	8.4
Total Dissolved Solids	N	1020	mg/l	1.0	1100
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	420
Chloride	U	1220	mg/l	1.0	210
Fluoride	U	1220	mg/l	0.050	0.34
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.15
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	100
Sulphate	U	1220	mg/l	1.0	300
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	19
Magnesium (Dissolved)	U	1455	mg/l	0.20	20
Sodium (Dissolved)	U	1455	mg/l	1.50	340
Total Hardness as CaCO3	U	1270	mg/l	15	130
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0050
Boron (Dissolved)	U	1455	mg/l	0.01	0.39
Barium (Dissolved)	U	1455	mg/l	0.005	0.018
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0025
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0007
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0008
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0016
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0028
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	7.8
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010

Results - Water

Project: D20-27-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30659
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486073
Order No.: D1866			Client Sample Ref.:		EW090822 RC01
			Client Sample ID.:		EW090822 RC01
			Sample Location:		RC01
			Sample Type:		WATER
			Top Depth (m):		5.00
			Bottom Depth (m):		5.58
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-30659
Our reference	:	Project 1399114
Validation Ref.	:	1399114_certificaat_v1
Verificationcode	:	IHOO-YFDC-NVKR-DGRO
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 24 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1399114**
Your Project Description	:	**22-30659**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7298347 = 1486073 RC01

Client sampling date	:	**09/08/2022**
Date of receipt	:	**18/08/2022**
Startdate	:	**18/08/2022**
Reference number	:	**7298347**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

CERTIFICATE

Project code	:	**1399114**
Your Project Description	:	**22-30659**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1399114**
Your Project Description	:	**22-30659**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-30660-3		
Initial Date of Issue:	09-Sep-2022	**Date of Re-Issue:**	09-Sep-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos John Emerson		
Project	D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D11866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	09-Sep-2022	**Subcon Results Due:**	08-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	7.9
Total Dissolved Solids	N	1020	mg/l	1.0	620
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	170
Chloride	U	1220	mg/l	1.0	81
Fluoride	U	1220	mg/l	0.050	0.50
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.50
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	100
Sulphate	U	1220	mg/l	1.0	310
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	110
Magnesium (Dissolved)	U	1455	mg/l	0.20	33
Sodium (Dissolved)	U	1455	mg/l	1.50	53
Total Hardness as CaCO3	U	1270	mg/l	15	420
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0007
Boron (Dissolved)	U	1455	mg/l	0.01	0.12
Barium (Dissolved)	U	1455	mg/l	0.005	0.022
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0050
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0032
Nickel (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	4.7
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050

Results - Water

Project: D2027-22, Stansted Terminla 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30660
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486074
Order No.: D11866			Client Sample Ref.:		EW090822-RC02
			Client Sample ID.:		RC02
			Sample Location:		RC02
			Sample Type:		WATER
			Top Depth (m):		16.0
			Bottom Depth (m):		20.0
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-30660
Our reference	:	Project 1399119
Validation Ref.	:	1399119_certificaat_v1
Verificationcode	:	RAXE-ZQHS-BDDA-XAWV
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 9 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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CSOmegam@eurofins.com

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Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1399119**
Your Project Description	:	**22-30660**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7316887 = 1486074 RC02

Client sampling date	:	**09/08/2022**
Date of receipt	:	**18/08/2022**
Startdate	:	**02/09/2022**
Reference number	:	**7316887**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1399119**
Your Project Description	:	**22-30660**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1399119**
Your Project Description	:	**22-30660**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Chemtest Subcontracting

CERTIFICATE OF ANALYSIS

Date of report Generation:	30 August 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	220815-61
Your Reference:	22-30660
Location:	Not Specified
Report No:	659289
Order Number:	22-30660

We received 1 sample on Monday August 15, 2022 and 1 of these samples were scheduled for analysis which was completed on Tuesday August 30, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG: 220815-61 **Report Number:** 659289 **Superseded Report:**
Client Ref.: 22-30660 **Location:** Not Specified

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26733016	1486074		16.00 - 16.00	09/08/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 220815-61 **Report Number:** 659289 **Superseded Report:**
Client Ref.: 22-30660 **Location:** Not Specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)		26733016
	Customer Sample Reference		1486074
	AGS Reference		
	Depth (m)		16.00 - 16.00
	Container		1000ml glass bottle (ALE220)
	Sample Type		UNL
PFAS Liquids	All	NDPs: 0 Tests: 1	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 220815-61 **Report Number:** 659289 **Superseded Report:**
Client Ref.: 22-30660 **Location:** Not Specified

Results Legend		
#	ISO17025 accredited.	
M	mCERTS accredited.	
aq	Aqueous / settled sample.	
diss.filt	Dissolved / filtered sample.	
tot.unfilt	Total / unfiltered sample.	
*	Subcontracted - refer to subcontractor report for accreditation status.	
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	
(F)	Trigger breach confirmed	
1-4+§@	Sample deviation (see appendix)	
	Customer Sample Ref.	1486074
	Depth (m)	16.00 - 16.00
	Sample Type	Unspecified Liquid (UNL)
	Date Sampled	09/08/2022
	Sample Time	-
	Date Received	15/08/2022
	SDG Ref	220815-61
	Lab Sample No.(s)	26733016
	AGS Reference	

Component	LOD/Units	Method	
PFOA (335-67-1)	<0.65 ng/l	TM337	2.92
Linear PFOS (1763-23-1)	<0.65 ng/l	TM337	<0.65
Branched PFOS	<0.65 ng/l	TM337	<0.65
Total PFOS	<0.65 ng/l	TM337	<0.65

CERTIFICATE OF ANALYSIS

SDG: 220815-61 **Report Number:** 659289 **Superseded Report:**
Client Ref.: 22-30660 **Location:** Not Specified

Table of Results - Appendix

Method No	Reference	Description
TM337	PFAS in Environmental Water Matrices	Analysis of PFAS

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 220815-61 **Report Number:** 659289 **Superseded Report:**
Client Ref.: 22-30660 **Location:** Not Specified

Test Completion Dates

Lab Sample No(s)	26733016
Customer Sample Ref.	1486074
AGS Ref.	
Depth	16.00 - 16.00
Type	Unspecified Liq
PFAS Liquids	30-Aug-2022

SDG:	220815-61	**Report Number:**	659289	**Superseded Report:**	
Client Ref:	22-30660	**Location:**	Not Specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-30662-3		
Initial Date of Issue:	25-Aug-2022	**Date of Re-Issue:**	25-Aug-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos John Emerson		
Project	D2072-22, Stansted terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	11-Aug-2022
Order No.:	D11866	**Date Instructed:**	11-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	19-Aug-2022
Date Approved:	24-Aug-2022	**Subcon Results Due:**	02-Sep-2022
Approved By:	[redacted]		
Details:	Stuart Henderson, Technical Manager		

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-30662
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1486079
Order No.: D11866				Client Sample Ref.:	EW090822DS06
				Client Sample ID.:	EW090822DS06
				Sample Location:	DS06
				Sample Type:	WATER
				Top Depth (m):	2.90
				Bottom Depth (m):	3.50
				Date Sampled:	09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
Perfluorooctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	8.1
Total Dissolved Solids	N	1020	mg/l	1.0	690
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	71
Chloride	U	1220	mg/l	1.0	170
Fluoride	U	1220	mg/l	0.050	0.90
Ammoniacal Nitrogen	U	1220	mg/l	0.050	7.6
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	87
Sulphate	U	1220	mg/l	1.0	260
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	140
Magnesium (Dissolved)	U	1455	mg/l	0.20	1.1
Sodium (Dissolved)	U	1455	mg/l	1.50	79
Total Hardness as CaCO3	U	1270	mg/l	15	360
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.025
Boron (Dissolved)	U	1455	mg/l	0.01	0.18
Barium (Dissolved)	U	1455	mg/l	0.005	0.052
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	0.0011
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0036
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.066
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.034
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0018
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.018
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.028
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	0.00001

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	72
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	2.2
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010

Results - Water

Project: D2072-22, Stansted terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-30662
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1486079
Order No.: D11866			Client Sample Ref.:		EW090822DS06
			Client Sample ID.:		EW090822DS06
			Sample Location:		DS06
			Sample Type:		WATER
			Top Depth (m):		2.90
			Bottom Depth (m):		3.50
			Date Sampled:		09-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-30662
Our reference	:	Project 1399121
Validation Ref.	:	1399121_certificaat_v1
Verificationcode	:	HMZH-PWTJ-KSPV-GAYC
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 24 August 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1399121**
Your Project Description	:	**22-30662**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7298361 = 1486079 RC02

Client sampling date	:	**09/08/2022**
Date of receipt	:	**18/08/2022**
Startdate	:	**18/08/2022**
Reference number	:	**7298361**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**0,46**
PFPeA	µg/l	**0,23**
PFHxA	µg/l	**0,11**
PFHpA	µg/l	**0,04**
PFOA linear	µg/l	**0,08**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**0,03**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**0,06**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**0,05**
PFOS branched	µg/l	**0,03**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**0,13**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,09**
sum PFOS	µg/l	**0,08**

C E R T I F I C A T E

Project code	:	**1399121**
Your Project Description	:	**22-30662**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1399121**
Your Project Description	:	**22-30662**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-31567-3		
Initial Date of Issue:	18-Nov-2022	**Date of Re-Issue:**	18-Nov-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen John Emerson Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	18-Aug-2022
Order No.:	D11866	**Date Instructed:**	19-Aug-2022
No. of Samples:	6		
Turnaround (Wkdays):	7	**Results Due:**	30-Aug-2022
Date Approved:	17-Nov-2022	**Subcon Results Due:**	12-Sep-2022
Approved By:	[redacted]		
Details:	Stuart Henderson, Technical Manager		

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
PFAS in Waters (Subcon)	SN			0.0200000	see attached	see attached		see attached	see attached	see attached
pH	U	1010		N/A	7.7	8.0	8.1	8.0	7.8	8.3
Total Dissolved Solids	N	1020	mg/l	1.0	1000	200	230	230	400	230
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	540	310	460	340	260	430
Chloride	U	1220	mg/l	1.0	180	44	54	230	400	74
Fluoride	U	1220	mg/l	0.050	0.30	0.34	0.52	0.16	0.36	0.36
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.37	0.18	0.15	0.12	0.47	0.23
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50	< 0.50	< 0.50	0.72	< 0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	210	33	130	300	120	73
Sulphate	U	1220	mg/l	1.0	640	100	400	890	350	220
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	78	110	48	360	190	76
Magnesium (Dissolved)	U	1455	mg/l	0.20	51	22	18	76	59	22
Sodium (Dissolved)	U	1455	mg/l	1.50	440	45	330	120	170	200
Total Hardness as CaCO3	U	1270	mg/l	15	410	360	200	1200	730	280
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0039	0.0012	0.0024	0.0014	0.0007	0.0014
Boron (Dissolved)	U	1455	mg/l	0.01	0.20	0.06	0.06	0.10	0.39	0.09
Barium (Dissolved)	U	1455	mg/l	0.005	0.043	0.062	0.039	0.062	0.038	0.057
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005	< 0.0005	0.0006	< 0.0005	< 0.0005	0.0010
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0036	0.0077	0.0051	0.15	0.042	0.0091
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0046	0.0007	0.0060	0.0023	0.0024	0.0047
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0022	0.0011	0.0022	0.0065	0.0037	0.0016
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005	< 0.0005	0.0008	0.0008	< 0.0005	0.0007
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0012	< 0.0005	0.0013	0.011	0.0009	0.018
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0014	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0016
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005	< 0.005	0.016	< 0.005	< 0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10	< 0.10	0.28	0.11	< 0.10	0.70
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1	< 1	< 1	< 1	< 1	< 1

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	8.4	2.9	6.7	5.8	6.5	4.4
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Acenaphthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31567	22-31567	22-31567	22-31567	22-31567	22-31567
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1490145	1490146	1490147	1490148	1490149	1490150
Order No.: D11866			Client Sample Ref.:		EW160822-CP11	EW160822-CP06	EW160822-CP10	EW160822-CP07	EW160822-RC02	EW160822-RC04
			Sample Location:		CP11	CP06	CP10	CP07	RC02	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15.0	6.00	4.00	7.00	12.0	5.00
			Bottom Depth (m):		17.50	9.50	10.50	19.0	20.50	8.50
			Date Sampled:		16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022	16-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Resorcinol	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-31567
Our reference	:	Project 1402033
Validation Ref.	:	1402033_certificaat_v1
Verificationcode	:	POUC-AMZT-IMCP-LFXA
Enclosure(s)	:	3 table(s) + 1 supplement(s)

Amsterdam, 9 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1402033**
Your Project Description	:	**22-31567**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7308478 = 1490145 CP11
7308481 = 1490148 CP07
7308482 = 1490149 RC02

Client sampling date	:	**16/08/2022**	**16/08/2022**	**16/08/2022**
Date of receipt	:	**25/08/2022**	**25/08/2022**	**25/08/2022**
Startdate	:	**29/08/2022**	**29/08/2022**	**29/08/2022**
Reference number	:	**7308478**	**7308481**	**7308482**
Your Matrix	:	**Water**	**Water**	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:				
PFBA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFNA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFUnDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDoDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTrDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTeDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFODA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated sulfonic acids:				
PFBS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - precursors:				
4:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
6:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTS	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
10:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
PFOSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - remainder:				
HPFHpA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
ADONA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
EtFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
EtFOSAA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSAA	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
P37DMOA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
PFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
MeFBSAA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
sum PFOA	µg/l	**0,03**	**0,03**	**0,03**
sum PFOS	µg/l	**0,03**	**0,03**	**0,03**

CERTIFICATE

Project code	:	**1402033**
Your Project Description	:	**22-31567**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7308483 = 1490150 RC04
7308575 = 1490146 CP06

Client sampling date	:	**16/08/2022**	**16/08/2022**
Date of receipt	:	**25/08/2022**	**25/08/2022**
Startdate	:	**29/08/2022**	**29/08/2022**
Reference number	:	**7308483**	**7308575**
Your Matrix	:	**Water**	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:			
PFBA	µg/l	**< 0,02**	**< 0,02**
PFPeA	µg/l	**< 0,02**	**< 0,02**
PFHxA	µg/l	**< 0,02**	**< 0,02**
PFHpA	µg/l	**< 0,02**	**< 0,02**
PFOA linear	µg/l	**< 0,02**	**< 0,02**
PFOA branched	µg/l	**< 0,02**	**< 0,02**
PFNA	µg/l	**< 0,02**	**< 0,02**
PFDA	µg/l	**< 0,02**	**< 0,02**
PFUnDA	µg/l	**< 0,02**	**< 0,02**
PFDoDA	µg/l	**< 0,02**	**< 0,02**
PFTrDA	µg/l	**< 0,02**	**< 0,02**
PFTeDA	µg/l	**< 0,02**	**< 0,02**
PFHxDA	µg/l	**< 0,02**	**< 0,02**
PFODA	µg/l	**< 0,02**	**< 0,02**
Perfluorinated sulfonic acids:			
PFBS	µg/l	**< 0,02**	**< 0,02**
PFPeS	µg/l	**< 0,02**	**< 0,02**
PFHxS	µg/l	**< 0,02**	**< 0,02**
PFHpS	µg/l	**< 0,02**	**< 0,02**
PFOS linear	µg/l	**< 0,02**	**< 0,02**
PFOS branched	µg/l	**< 0,02**	**< 0,02**
PFDS	µg/l	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - precursors:			
4:2 FTS	µg/l	**< 0,05**	**< 0,05**
6:2 FTS	µg/l	**< 0,05**	**< 0,05**
8:2 FTS	µg/l	**< 0,1**	**< 0,1**
10:2 FTS	µg/l	**< 0,05**	**< 0,05**
PFOSA	µg/l	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - remainder:			
HPFHpA	µg/l	**< 0,5**	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**	**< 0,02**
ADONA	µg/l	**< 0,02**	**< 0,02**
EtFOSA	µg/l	**< 0,05**	**< 0,05**
EtFOSAA	µg/l	**< 0,02**	**< 0,02**
MeFBSA	µg/l	**< 0,02**	**< 0,02**
MeFOSAA	µg/l	**< 0,1**	**< 0,1**
P37DMOA	µg/l	**< 0,5**	**< 0,5**
PFBSA	µg/l	**< 0,02**	**< 0,02**
MeFOSA	µg/l	**< 0,05**	**< 0,05**
MeFBSAA	µg/l	**< 0,02**	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**	**< 0,1**
sum PFOA	µg/l	**0,03**	**0,03**
sum PFOS	µg/l	**0,03**	**0,03**

C E R T I F I C A T E

Project code	:	**1402033**
Your Project Description	:	**22-31567**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1402033**
Your Project Description	:	**22-31567**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-31778-3		
Initial Date of Issue:	09-Sep-2022	**Date of Re-Issue:**	09-Sep-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen John Emerson Platon Kostelletos		
Project	D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation		
Quotation No.:	Q22-27911	**Date Received:**	19-Aug-2022
Order No.:	D11866	**Date Instructed:**	19-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	30-Aug-2022
Date Approved:	09-Sep-2022	**Subcon Results Due:**	12-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
pH	U	1010		N/A	7.5
Total Dissolved Solids	N	1020	mg/l	1.0	600
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	210
Chloride	U	1220	mg/l	1.0	55
Fluoride	U	1220	mg/l	0.050	0.099
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.69
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	43
Sulphate	U	1220	mg/l	1.0	130
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	78
Magnesium (Dissolved)	U	1455	mg/l	0.20	20
Sodium (Dissolved)	U	1455	mg/l	1.50	54
Total Hardness as CaCO3	U	1270	mg/l	15	280
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0008
Boron (Dissolved)	U	1455	mg/l	0.01	0.05
Barium (Dissolved)	U	1455	mg/l	0.005	0.25
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.024
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0004
Nickel (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0007
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0011
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	0.046
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	3.4
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010

Results - Water

Project: D2207-22 Stansted Terminal 2 (ST2) - Ground Investgation

Client: SOCOTEC			**Chemtest Job No.:**		22-31778
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491108
Order No.: D11866			Client Sample Ref.:		EW170822-CP04
			Sample Location:		CP04
			Sample Type:		WATER
			Top Depth (m):		9.0
			Bottom Depth (m):		11.0
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-31778
Our reference	:	Project 1402040
Validation Ref.	:	1402040_certificaat_v1
Verificationcode	:	TPRO-LWHN-USPA-DDWX
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 9 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
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Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1402040**
Your Project Description	:	**22-31778**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7308477 = 1491108 CP04

Client sampling date	:	**17/08/2022**
Date of receipt	:	**25/08/2022**
Startdate	:	**29/08/2022**
Reference number	:	**7308477**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1402040**
Your Project Description	:	**22-31778**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1402040**
Your Project Description	:	**22-31778**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-31779-3		
Initial Date of Issue:	09-Sep-2022	**Date of Re-Issue:**	09-Sep-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	19-Aug-2022
Order No.:	D11866	**Date Instructed:**	19-Aug-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	30-Aug-2022
Date Approved:	09-Sep-2022	**Subcon Results Due:**	12-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
pH	U	1010		N/A	7.5
Total Dissolved Solids	N	1020	mg/l	1.0	540
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	340
Chloride	U	1220	mg/l	1.0	49
Fluoride	U	1220	mg/l	0.050	0.25
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.51
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	40
Sulphate	U	1220	mg/l	1.0	120
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	98
Magnesium (Dissolved)	U	1455	mg/l	0.20	19
Sodium (Dissolved)	U	1455	mg/l	1.50	38
Total Hardness as CaCO3	U	1270	mg/l	15	320
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0016
Boron (Dissolved)	U	1455	mg/l	0.01	0.04
Barium (Dissolved)	U	1455	mg/l	0.005	0.035
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0013
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0008
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0013
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Vanadium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	2.1
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-31779
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1491109
Order No.: D11866			Client Sample Ref.:		EW170822CP 03
			Client Sample ID.:		EW170822CP 03
			Sample Location:		CP03
			Sample Type:		WATER
			Top Depth (m):		10.00
			Bottom Depth (m):		15.00
			Date Sampled:		17-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-31779
Our reference	:	Project 1402042
Validation Ref.	:	1402042_certificaat_v1
Verificationcode	:	EHBU-DWTU-PXDO-NHUW
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 9 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1402042**
Your Project Description	:	**22-31779**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7308475 = 1491109 CP03

Client sampling date	:	**17/08/2022**
Date of receipt	:	**25/08/2022**
Startdate	:	**29/08/2022**
Reference number	:	**7308475**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1402042**
Your Project Description	:	**22-31779**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1402042**
Your Project Description	:	**22-31779**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	22-33483-3		
Initial Date of Issue:	26-Sep-2022	**Date of Re-Issue:**	26-Sep-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen John Emerson Platon Kostelletos		
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	02-Sep-2022
Order No.:	D11866	**Date Instructed:**	05-Sep-2022
No. of Samples:	6		
Turnaround (Wkdays):	7	**Results Due:**	13-Sep-2022
Date Approved:	26-Sep-2022	**Subcon Results Due:**	26-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-33483	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866			Client Sample Ref.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Client Sample ID.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Sample Location:		RC03	CP07	CP06	CP10	CP11	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15	14	8	6	12	5
			Bottom Depth (m):		16	15	9	7	13	6
			Date Sampled:		30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
PFAS in Waters (Subcon)	SN			0.0200000	see attached	see attached	see attached	see attached	see attached	see attached
pH	U	1010		N/A	7.6	7.4	7.5	7.5	7.4	7.5
Total Dissolved Solids	N	1020	mg/l	1.0	810	1400	670	830	1300	970
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	270	290	300	360	410	360
Chloride	U	1220	mg/l	1.0	75	190	40	52	160	92
Fluoride	U	1220	mg/l	0.050	0.38	0.25	0.31	0.43	0.31	0.36
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.35	0.15	0.13	0.16	0.23	0.13
Nitrate as NO3	U	1220	mg/l	0.50	5.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	140	300	37	77	190	70
Sulphate	U	1220	mg/l	1.0	410	900	110	230	580	210
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	140	300	130	110	150	110
Magnesium (Dissolved)	U	1455	mg/l	0.20	36	58	19	21	48	26
Sodium (Dissolved)	U	1455	mg/l	1.50	110	220	37	170	300	160
Total Hardness as CaCO3	U	1270	mg/l	15	490	980	400	360	570	380
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0014	0.0011	0.0009	0.0016	0.0017	0.0023
Boron (Dissolved)	U	1455	mg/l	0.01	0.16	0.11	0.05	0.07	0.15	0.09
Barium (Dissolved)	U	1455	mg/l	0.005	0.036	0.083	0.061	0.029	0.029	0.035
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	0.015	0.0030	0.0017	0.0022	0.0057	0.0042
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0067	0.37	0.038	0.061	0.088	0.026
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0078	0.0053	0.0013	0.0028	0.0060	0.0045
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0061	0.010	0.0054	0.0036	0.0068	0.0068
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0052	0.0009	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0074	0.0032	0.0011	0.0012	0.0014	0.0020
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0007	0.0007	< 0.0005	< 0.0005	< 0.0005	0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	0.11	0.019	0.005	0.005	0.007	0.004
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	0.033	0.049	0.016	0.027	0.045	0.016

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-33483	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866			Client Sample Ref.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Client Sample ID.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Sample Location:		RC03	CP07	CP06	CP10	CP11	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15	14	8	6	12	5
			Bottom Depth (m):		16	15	9	7	13	6
			Date Sampled:		30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	[B] < 0.10	[B] < 0.10	[B] < 0.10	[B] < 0.10	[B] < 0.10	[B] < 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	[B] 2	[B] 2	[B] 2	[B] 2	[B] 2	[B] 2
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	66	110	91	120	130	110
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-33483	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866			Client Sample Ref.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Client Sample ID.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Sample Location:		RC03	CP07	CP06	CP10	CP11	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15	14	8	6	12	5
			Bottom Depth (m):		16	15	9	7	13	6
			Date Sampled:		30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866					Client Sample Ref.:	EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
					Client Sample ID.:	EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
					Sample Location:	RC03	CP07	CP06	CP10	CP11	RC04
					Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER
					Top Depth (m):	15	14	8	6	12	5
					Bottom Depth (m):	16	15	9	7	13	6
					Date Sampled:	30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
1,3-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5		< 5	< 5	< 5	< 5	< 5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC					**Chemtest Job No.:**	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911					**Chemtest Sample ID.:**	1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866					Client Sample Ref.:	EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
					Client Sample ID.:	EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
					Sample Location:	RC03	CP07	CP06	CP10	CP11	RC04
					Sample Type:	WATER	WATER	WATER	WATER	WATER	WATER
					Top Depth (m):	15	14	8	6	12	5
					Bottom Depth (m):	16	15	9	7	13	6
					Date Sampled:	30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**							
Hexachlorocyclopentadiene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-33483	22-33483	22-33483	22-33483	22-33483	22-33483
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1498762	1498763	1498764	1498765	1498766	1498767
Order No.: D11866			Client Sample Ref.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Client Sample ID.:		EW-300822-RC03	EW-300822-CP07	EW-310822-CP06	EW-310822-CP10	EW-310822-CP11	EW-310822-RC04
			Sample Location:		RC03	CP07	CP06	CP10	CP11	RC04
			Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
			Top Depth (m):		15	14	8	6	12	5
			Bottom Depth (m):		16	15	9	7	13	6
			Date Sampled:		30-Aug-2022	30-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022	31-Aug-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**						
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Resorcinol	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1498762	EW-300822-RC03	EW-300822-RC03	RC03	30-Aug-2022	B	Coloured Winchester 1000ml
1498762	EW-300822-RC03	EW-300822-RC03	RC03	30-Aug-2022	B	EPA Vial 40ml
1498762	EW-300822-RC03	EW-300822-RC03	RC03	30-Aug-2022	B	Plastic Bottle 1000ml
1498763	EW-300822-CP07	EW-300822-CP07	CP07	30-Aug-2022	B	Coloured Winchester 1000ml
1498763	EW-300822-CP07	EW-300822-CP07	CP07	30-Aug-2022	B	EPA Vial 40ml
1498763	EW-300822-CP07	EW-300822-CP07	CP07	30-Aug-2022	B	Plastic Bottle 1000ml
1498764	EW-310822-CP06	EW-310822-CP06	CP06	31-Aug-2022	B	Coloured Winchester 1000ml
1498764	EW-310822-CP06	EW-310822-CP06	CP06	31-Aug-2022	B	EPA Vial 40ml
1498764	EW-310822-CP06	EW-310822-CP06	CP06	31-Aug-2022	B	Plastic Bottle 1000ml
1498765	EW-310822-CP10	EW-310822-CP10	CP10	31-Aug-2022	B	Coloured Winchester 1000ml
1498765	EW-310822-CP10	EW-310822-CP10	CP10	31-Aug-2022	B	EPA Vial 40ml
1498765	EW-310822-CP10	EW-310822-CP10	CP10	31-Aug-2022	B	Plastic Bottle 1000ml
1498766	EW-310822-CP11	EW-310822-CP11	CP11	31-Aug-2022	B	Coloured Winchester 1000ml
1498766	EW-310822-CP11	EW-310822-CP11	CP11	31-Aug-2022	B	EPA Vial 40ml
1498766	EW-310822-CP11	EW-310822-CP11	CP11	31-Aug-2022	B	Plastic Bottle 1000ml
1498767	EW-310822-RC04	EW-310822-RC04	RC04	31-Aug-2022	B	Coloured Winchester 1000ml
1498767	EW-310822-RC04	EW-310822-RC04	RC04	31-Aug-2022	B	EPA Vial 40ml
1498767	EW-310822-RC04	EW-310822-RC04	RC04	31-Aug-2022	B	Plastic Bottle 1000ml

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-33483
Our reference	:	Project 1410191
Validation Ref.	:	1410191_certificaat_v1
Verificationcode	:	XMST-COHF-PKIQ-WXHX
Enclosure(s)	:	3 table(s) + 1 supplement(s)

Amsterdam, 23 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

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VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1410191**
Your Project Description	:	**22-33483**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7327818 = 1498762
7327819 = 1498763
7327820 = 1498764

Client sampling date	:	**30/08/2022**	**30/08/2022**	**31/08/2022**
Date of receipt	:	**12/09/2022**	**12/09/2022**	**12/09/2022**
Startdate	:	**12/09/2022**	**12/09/2022**	**12/09/2022**
Reference number	:	**7327818**	**7327819**	**7327820**
Your Matrix	:	**Water**	**Water**	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:				
PFBA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFNA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFUnDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDoDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTrDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTeDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFODA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated sulfonic acids:				
PFBS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - precursors:				
4:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
6:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTS	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
10:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
PFOSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - remainder:				
HPFHpA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
ADONA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
EtFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
EtFOSAA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSAA	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
P37DMOA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
PFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
MeFBSAA	µg/l	**0,04**	**< 0,02**	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
sum PFOA	µg/l	**0,03**	**0,03**	**0,03**
sum PFOS	µg/l	**0,03**	**0,03**	**0,03**

CERTIFICATE

Project code : **1410191**
Your Project Description : **22-33483**
Client : **Eurofins Chemtest Ltd**

Your Sample identification
7327821 = 1498765
7327822 = 1498766
7327823 = 1498767

Client sampling date	:	**31/08/2022**	**31/08/2022**	**31/08/2022**
Date of receipt	:	**12/09/2022**	**12/09/2022**	**12/09/2022**
Startdate	:	**12/09/2022**	**12/09/2022**	**12/09/2022**
Reference number	:	**7327821**	**7327822**	**7327823**
Your Matrix	:	**Water**	**Water**	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:				
PFBA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOA branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFNA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFUnDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDoDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTrDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFTeDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxDA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFODA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated sulfonic acids:				
PFBS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFPeS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHxS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFHpS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS linear	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFOS branched	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
PFDS	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - precursors:				
4:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
6:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTS	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
10:2 FTS	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
PFOSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
Perfluorinated alkyl substances - remainder:				
HPFHpA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
ADONA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
EtFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
EtFOSAA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSAA	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
P37DMOA	µg/l	**< 0,5**	**< 0,5**	**< 0,5**
PFBSA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
MeFOSA	µg/l	**< 0,05**	**< 0,05**	**< 0,05**
MeFBSAA	µg/l	**< 0,02**	**< 0,02**	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**	**< 0,1**	**< 0,1**
sum PFOA	µg/l	**0,03**	**0,03**	**0,03**
sum PFOS	µg/l	**0,03**	**0,03**	**0,03**

C E R T I F I C A T E

Project code	:	**1410191**
Your Project Description	:	**22-33483**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1410191**
Your Project Description	:	**22-33483**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-34214-3		
Initial Date of Issue:	03-Oct-2022	**Date of Re-Issue:**	03-Oct-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen John Emerson Platon Kostelletos		
Project	S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	07-Sep-2022
Order No.:	D11866	**Date Instructed:**	07-Sep-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	15-Sep-2022
Date Approved:	03-Oct-2022	**Subcon Results Due:**	28-Sep-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
pH	U	1010		N/A	7.9
Total Dissolved Solids	N	1020	mg/l	1.0	1600
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	330
Chloride	U	1220	mg/l	1.0	160
Fluoride	U	1220	mg/l	0.050	0.31
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.46
Nitrate as NO3	U	1220	mg/l	0.50	< 0.50
Sulphur	N	1220	mg/l	1.0	120
Sulphate	U	1220	mg/l	1.0	370
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	140
Magnesium (Dissolved)	U	1455	mg/l	0.20	62
Sodium (Dissolved)	U	1455	mg/l	1.50	99
Total Hardness as CaCO3	U	1270	mg/l	15	620
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0009
Boron (Dissolved)	U	1455	mg/l	0.01	0.31
Barium (Dissolved)	U	1455	mg/l	0.005	0.039
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	0.0008
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0055
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0067
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0019
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0014
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0015
Vanadium (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	71
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010

Results - Water

Project: S2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-34214
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1502108
Order No.: D11866			Client Sample Ref.:		EW060922-RC03
			Sample Location:		RC03
			Sample Type:		WATER
			Top Depth (m):		10.5
			Bottom Depth (m):		25.0
			Date Sampled:		06-Sep-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-34214
Our reference	:	Project 1410301
Validation Ref.	:	1410301_certificaat_v1
Verificationcode	:	ILDH-QVSE-VECK-WBOV
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 30 September 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
Netherlands

T +31-(0)20-597 66 80

CSOmegam@eurofins.com

IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1410301**
Your Project Description	:	**22-34214**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7328182 = 1502108

Client sampling date	:	**06/09/2022**
Date of receipt	:	**12/09/2022**
Startdate	:	**12/09/2022**
Reference number	:	**7328182**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**< 0,02**
PFPeA	µg/l	**< 0,02**
PFHxA	µg/l	**< 0,02**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**2,0**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**0,16**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**2,0**

C E R T I F I C A T E

Project code	:	**1410301**
Your Project Description	:	**22-34214**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

C E R T I F I C A T E

Project code	:	**1410301**
Your Project Description	:	**22-34214**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-37893-1
Initial Date of Issue:	26-Oct-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	John Emerson Platon Kostelletos
Project	D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	05-Oct-2022
Order No.:	D11866	**Date Instructed:**	05-Oct-2022
No. of Samples:	1		
Turnaround (Wkdays):	7	**Results Due:**	13-Oct-2022
Date Approved:	26-Oct-2022	**Subcon Results Due:**	26-Oct-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
PFAS in Waters (Subcon)	SN			0.0200000	see attached
pH	U	1010		N/A	8.5
Total Dissolved Solids	N	1020	mg/l	1.0	520
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	56
Chloride	U	1220	mg/l	1.0	32
Fluoride	U	1220	mg/l	0.050	0.24
Ammoniacal Nitrogen	U	1220	mg/l	0.050	1.2
Nitrate as NO3	U	1220	mg/l	0.50	1.3
Sulphur	N	1220	mg/l	1.0	97
Sulphate	U	1220	mg/l	1.0	290
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	120
Magnesium (Dissolved)	U	1455	mg/l	0.20	2.1
Sodium (Dissolved)	U	1455	mg/l	1.50	58
Total Hardness as CaCO3	U	1270	mg/l	15	310
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0073
Boron (Dissolved)	U	1455	mg/l	0.01	0.11
Barium (Dissolved)	U	1455	mg/l	0.005	0.063
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0018
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.012
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0040
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0024
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0033
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0066
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	0.007
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	< 0.10
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	12

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010

Results - Water

Project: D2027-22, Stansted Terminal 2 (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-37893
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1518457
Order No.: D11866			Client Sample Ref.:		EW041022
			Sample Location:		DS13
			Sample Type:		WATER
			Top Depth (m):		2.72
			Bottom Depth (m):		4.65
			Date Sampled:		04-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

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M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Attn. Mr. J. King
Depot Road 11
GB-CB8 0AL NEWMARKET
GROOT BRITTANIE

Your reference	:	22-37893
Our reference	:	Project 1424230
Validation Ref.	:	1424230_certificaat_v1
Verificationcode	:	OLDX-EPQZ-FLJT-WYOF
Enclosure(s)	:	2 table(s) + 1 supplement(s)

Amsterdam, 25 October 2022

I hereby enclose the results of the laboratory tests that have been carried out on your request on the samples that you supplied to us.

I would like to point out to you that the results apply only to the samples supplied, such as these were presented for testing.

The research has been carried out according to the methods that are set out in the current accreditation certificate L086 and/or in the volume "Analysevoorschriften Eurofins Omegam". These protocols are, as far as possible, based on the NEN- EN- and/or ISO standards.

Do also note that the enclosed report may not be copied or reproduced in any way except in its entirety. I trust that we have completed your order as agreed and to your full satisfaction. If you have any questions reading this report, then please don't hesitate to contact our Customer Service.

Yours sincerely,
On behalf of Eurofins Omegam,

BSc J. Tukker
Production manager

Eurofins Omegam B.V.
H.J.E. Wenckebachweg 120
NL-1114 AD Amsterdam-Duivendrecht
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IBAN NL 16 BNPA 0227667980
Swiftaddress BNPANL2A
VAT: NL8139.67.132.B01
Trade register No. 34215654

CERTIFICATE

Project code	:	**1424230**
Your Project Description	:	**22-37893**
Client	:	**Eurofins Chemtest Ltd**

Your Sample identification
7370793 = 1518457 DS13

Client sampling date	:	**04/10/2022**
Date of receipt	:	**07/10/2022**
Startdate	:	**12/10/2022**
Reference number	:	**7370793**
Your Matrix	:	**Water**

Organic compounds - per- and polyfluoroalkylsubstances (PFAS)

Perfluorinated carboxylic acids:		
PFBA	µg/l	**0,03**
PFPeA	µg/l	**0,05**
PFHxA	µg/l	**0,03**
PFHpA	µg/l	**< 0,02**
PFOA linear	µg/l	**< 0,02**
PFOA branched	µg/l	**< 0,02**
PFNA	µg/l	**< 0,02**
PFDA	µg/l	**< 0,02**
PFUnDA	µg/l	**< 0,02**
PFDoDA	µg/l	**< 0,02**
PFTrDA	µg/l	**< 0,02**
PFTeDA	µg/l	**< 0,02**
PFHxDA	µg/l	**< 0,02**
PFODA	µg/l	**< 0,02**
Perfluorinated sulfonic acids:		
PFBS	µg/l	**< 0,02**
PFPeS	µg/l	**< 0,02**
PFHxS	µg/l	**< 0,02**
PFHpS	µg/l	**< 0,02**
PFOS linear	µg/l	**< 0,02**
PFOS branched	µg/l	**< 0,02**
PFDS	µg/l	**< 0,02**
Perfluorinated alkyl substances - precursors:		
4:2 FTS	µg/l	**< 0,05**
6:2 FTS	µg/l	**< 0,05**
8:2 FTS	µg/l	**< 0,1**
10:2 FTS	µg/l	**< 0,05**
PFOSA	µg/l	**< 0,02**
Perfluorinated alkyl substances - remainder:		
HPFHpA	µg/l	**< 0,5**
4H-PFUnDA	µg/l	**< 0,05**
8:2 FTUCA	µg/l	**< 0,05**
9Cl-PF3ONS (F53-B)	µg/l	**< 0,02**
ADONA	µg/l	**< 0,02**
EtFOSA	µg/l	**< 0,05**
EtFOSAA	µg/l	**< 0,02**
MeFBSA	µg/l	**< 0,02**
MeFOSAA	µg/l	**< 0,1**
P37DMOA	µg/l	**< 0,5**
PFBSA	µg/l	**< 0,02**
MeFOSA	µg/l	**< 0,05**
MeFBSAA	µg/l	**< 0,02**
8:2 DiPAP	µg/l	**< 0,1**
sum PFOA	µg/l	**0,03**
sum PFOS	µg/l	**0,03**

C E R T I F I C A T E

Project code	:	**1424230**
Your Project Description	:	**22-37893**
Client	:	**Eurofins Chemtest Ltd**

Notes related to analyses

General comments

The following information has been provided by the client if applicable:
Project description, Sample identificaton, Client sampling date, Client Matrix, Sample depth, Pot number (Barcode), Field data, Field observations and sampling data. The client sampling date can affect the validity of the results.

Quantification of branched PFOS/POA is based on DIN 38414-14.

Summation of concentrations for group parameters
Summation is calculated according to AS3000 protocol, paragraph 2.5.2 and appendix 3.

CERTIFICATE

Project code	:	**1424230**
Your Project Description	:	**22-37893**
Client	:	**Eurofins Chemtest Ltd**

Appendix Index PFAS

PFAS component	Full name PFAS component
10:2 FTS	10:2 FTS (10:2 Fluorotelomer sulfonic acid)
4:2 FTS	4:2 FTS (4:2 Fluorotelomer sulfonic acid)
4H-PFUnDA	4H-PFUnDA (2H,2H,3H,3H-Perfluoroundecanoic acid)
6:2 FTS	6:2 FTS (6:2 Fluorotelomer sulfonic acid)
8:2 DiPAP	8:2 DiPAP (8:2 Fluorotelomer phosphate diester)
8:2 FTS	8:2 FTS (8:2 Fluorotelomer sulfonic acid)
8:2 FTUCA	8:2 FTUCA (8:2 Fluorotelomer unsaturated carboxylic acid)
9Cl-PF3ONS (F53-B)	9Cl-PF3ONS (F53-B) (9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid)
ADONA	ADONA (ammonium 4,8-dioxa-3H-perfluorononanoate)
EtFOSA	EtFOSA (N-ethyl perfluorooctanesulfonamide)
EtFOSAA	EtFOSAA (perfluorooctanesulfonylamide(N-ethyl)acetate)
HPFHpA	HPFHpA (7H-perfluoroheptanoic acid)
MeFBSA	MeFBSA (N-methylperfluorobutanesulfonylamide)
MeFBSAA	MeFBSAA (perfluorobutanesulfonylamide(N-methyl)acetate)
MeFOSA	MeFOSA (N-methyl perfluorooctanesulfonamide)
MeFOSAA	MeFOSAA (N-methyl perfluorooctanesulfonamidoacetic acid)
P37DMOA	P37DMOA (perfluoro-3,7-dimethyloctanoic acid)
PFBA	PFBA (perfluorobutanoic acid)
PFBS	PFBS (perfluorobutanesulfonic acid)
PFBSA	PFBSA (perfluorobutanesulfonamide)
PFDA	PFDA (perfluorodecanoic acid)
PFDoDA	PFDoDA (perfluorododecanoic acid)
PFDS	PFDS (perfluorodecanesulfonic acid)
PFHpA	PFHpA (perfluoroheptanoic acid)
PFHpS	PFHpS (perfluoroheptanesulfonic acid)
PFHxA	PFHxA (perfluorohexanoic acid)
PFHxDA	PFHxDA (perfluorohexadecanoic acid)
PFHxS	PFHxS (perfluorohexanesulfonic acid)
PFNA	PFNA (perfluorononanoic acid)
PFOA branched	PFOA branched (perfluorooctanoic acid)
PFOA linear	PFOA lineair (perfluorooctanoic acid)
PFODA	PFODA (perfluorooctadecanoic acid)
PFOS branched	PFOS branched (perfluorooctanesulfonic acid)
PFOS linear	PFOS lineair (perfluorooctanesulfonic acid)
PFOSA	PFOSA (perfluorooctanesulfonamide)
PFPeA	PFPeA (perfluoropentanoic acid)
PFPeS	PFPeS (perfluoropentanesulfonic acid)
PFTeDA	PFTeDA (perfluorotetradecanoic acid)
PFTrDA	PFTrDA (perfluorotridecanoic acid)
PFUnDA	PFUnDA (perfluoroundecanoic acid)

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	22-40076-4		
Initial Date of Issue:	25-Oct-2022	**Date of Re-Issue:**	25-Oct-2022
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen Platon Kostelletos		
Project	Stansted Airport D2027-22, Stansted Terminal 2 (ST2)		
Quotation No.:	Q22-27911	**Date Received:**	20-Oct-2022
Order No.:	D11866	**Date Instructed:**	20-Oct-2022
No. of Samples:	1		
Turnaround (Wkdays):	10	**Results Due:**	02-Nov-2022
Date Approved:	24-Oct-2022		

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC			**Chemtest Job No.:**		22-40076
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1528434
Order No.: D11866			Client Sample Ref.:		EW181022-DS13
			Client Sample ID.:		EW181022-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		18-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Cyanide (Total)	U	1300	mg/l	0.050	0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	18
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050

Results - Water

Project: Stansted Airport D2027-22, Stansted Terminal 2 (ST2)

Client: SOCOTEC			**Chemtest Job No.:**		22-40076
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1528434
Order No.: D11866			Client Sample Ref.:		EW181022-DS13
			Client Sample ID.:		EW181022-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		18-Oct-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

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A - Date of sampling not supplied
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C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

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All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-44117-1
Initial Date of Issue:	01-Dec-2022
Client	SOCOTEC
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW
Contact(s):	Dave Beskeen John Emerson
Project	D2027-22 Stansted Terminal 2 (ST2)- Ground Investigation

Quotation No.:	Q22-27911	**Date Received:**	17-Nov-2022
Order No.:	D11866	**Date Instructed:**	17-Nov-2022
No. of Samples:	1		
Turnaround (Wkdays):	10	**Results Due:**	30-Nov-2022
Date Approved:	30-Nov-2022	**Subcon Results Due:**	08-Dec-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22 Stansted Terminal 2 (ST2)-Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44117
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547283
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS03
			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Perfluoroctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	8.1
Total Dissolved Solids	N	1020	mg/l	1.0	960
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	230
Chloride	U	1220	mg/l	1.0	15
Fluoride	U	1220	mg/l	0.050	0.22
Ammoniacal Nitrogen	U	1220	mg/l	0.050	0.12
Nitrate as NO3	U	1220	mg/l	0.50	69
Sulphur	N	1220	mg/l	1.0	160
Sulphate	U	1220	mg/l	1.0	470
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	210
Magnesium (Dissolved)	U	1455	mg/l	0.20	15
Sodium (Dissolved)	U	1455	mg/l	1.50	41
Total Hardness as CaCO3	U	1270	mg/l	15	590
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0017
Boron (Dissolved)	U	1455	mg/l	0.01	0.11
Barium (Dissolved)	U	1455	mg/l	0.005	0.056
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	0.0074
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.023
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.0062
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0030
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0013
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0049
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.0010
Zinc (Dissolved)	U	1455	mg/l	0.002	< 0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	< 0.005
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	0.15
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	11
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10

Results - Water

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Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS03
			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10

Results - Water

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			Client Sample ID.:		EW151122-DS03
			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10

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			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50

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			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010

Results - Water

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			Sample Location:		DS03
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 November 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	221118-113
Your Reference:	23169
Location:	
Report No:	669503
Order Number:	22-44117

We received 1 sample on Friday November 18, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday November 23, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27183995	1547283 EW151123-DS03			15/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 221118-113 **Report Number:** 669503 **Superseded Report:**
Client Ref.: 23169 **Location:**

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			27183995	1547283 EW151123-DS03			1lplastic (ALE221)	GW
PFAS Liquids	All	NDPs: 0 Tests: 1					X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 221118-113 **Report Number:** 669503 **Superseded Report:**
Client Ref.: 23169 **Location:**

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
			1547283 EW151123-DS03	.	Ground Water (GW)	15/11/2022	.	18/11/2022	221118-113	27183995	
PFOA (335-67-1)	<0.65 ng/l	TM337	11.3 #								
Linear PFOS (1763-23-1)	<0.65 ng/l	TM337	3.23 #								
Branched PFOS	<0.65 ng/l	TM337	3.16 #								
Total PFOS	<0.65 ng/l	TM337	6.39 #								

Table of Results - Appendix

Method No	Reference	Description
TM337	PFAS in Environmental Water Matrices	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 221118-113 **Report Number:** 669503 **Superseded Report:**
Client Ref.: 23169 **Location:**

Test Completion Dates

Lab Sample No(s)	27183995
Customer Sample Ref.	1547283 EW15112 3-DS03
AGS Ref.	
Depth	
Type	Ground Water
PFAS Liquids	23-Nov-2022

SDG:	221118-113	**Report Number:**	669503	**Superseded Report:**	
Client Ref:	23169	**Location:**			

Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-44123-1		
Initial Date of Issue:	01-Dec-2022		
Client	SOCOTEC		
Client Address:	Glossop House Hogwood Lane Finchampstead Berkshire RG40 4QW		
Contact(s):	Dave Beskeen John Emerson		
Project	D2027-22 Stansted Terminal (ST2) - Ground Investigation		
Quotation No.:	Q22-27911	**Date Received:**	17-Nov-2022
Order No.:	D11866	**Date Instructed:**	17-Nov-2022
No. of Samples:	1		
Turnaround (Wkdays):	10	**Results Due:**	30-Nov-2022
Date Approved:	30-Nov-2022	**Subcon Results Due:**	08-Dec-2022

Approved By:

[redacted]

Details: Stuart Henderson, Technical Manager

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC				**Chemtest Job No.:**	22-44123
Quotation No.: Q22-27911				**Chemtest Sample ID.:**	1547299
Order No.: D11866				Client Sample Ref.:	151122
				Client Sample ID.:	EW151122-DS13
				Sample Location:	DS13
				Sample Type:	WATER
				Date Sampled:	15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Perfluorooctanoic Acid (PFOA) (Subcon)	SN		µg/l	N/A	See Attached
pH	U	1010		N/A	9.7
Total Dissolved Solids	N	1020	mg/l	1.0	350
Alkalinity (Bicarbonate)	U	1220	mg CaCO3/l	10	44
Chloride	U	1220	mg/l	1.0	39
Fluoride	U	1220	mg/l	0.050	0.49
Ammoniacal Nitrogen	U	1220	mg/l	0.050	1.1
Nitrate as NO3	U	1220	mg/l	0.50	2.1
Sulphur	N	1220	mg/l	1.0	43
Sulphate	U	1220	mg/l	1.0	130
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	40
Magnesium (Dissolved)	U	1455	mg/l	0.20	1.2
Sodium (Dissolved)	U	1455	mg/l	1.50	55
Total Hardness as CaCO3	U	1270	mg/l	15	110
Arsenic (Dissolved)	U	1455	mg/l	0.0002	0.0059
Boron (Dissolved)	U	1455	mg/l	0.01	0.08
Barium (Dissolved)	U	1455	mg/l	0.005	0.021
Beryllium (Dissolved)	U	1455	mg/l	0.001	< 0.001
Cadmium (Dissolved)	U	1455	mg/l	0.00011	< 0.00011
Copper (Dissolved)	U	1455	mg/l	0.0005	0.0082
Manganese (Dissolved)	U	1455	mg/l	0.0005	0.0032
Molybdenum (Dissolved)	U	1455	mg/l	0.0002	0.021
Nickel (Dissolved)	U	1455	mg/l	0.0005	0.0099
Lead (Dissolved)	U	1455	mg/l	0.0005	< 0.0005
Antimony (Dissolved)	U	1455	mg/l	0.0005	0.0029
Selenium (Dissolved)	U	1455	mg/l	0.0005	0.0063
Vanadium (Dissolved)	U	1455	mg/l	0.0005	0.023
Zinc (Dissolved)	U	1455	mg/l	0.002	0.003
Mercury Low Level	U	1460	mg/l	0.000010	< 0.00001
Iron (Dissolved)	N	1455	mg/l	0.005	0.006
Low-Level Chromium (Hexavalent)	U	1495	µg/l	0.10	0.33
Chromium (Trivalent) LL	N	1450	µg/l	1	< 1
Dissolved Organic Carbon Low Level	N	1610	mg/l	N/A	12
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44123
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547299
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10
Dichlorodifluoromethane	N	1760	µg/l	0.10	< 0.10
Chloromethane	N	1760	µg/l	0.10	< 0.10
Vinyl Chloride	N	1760	µg/l	0.10	< 0.10
Bromomethane	N	1760	µg/l	2.0	< 2.0
Chloroethane	N	1760	µg/l	0.20	< 0.20
Trichlorofluoromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Trans 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
1,1-Dichloroethane	N	1760	µg/l	0.10	< 0.10
cis 1,2-Dichloroethene	N	1760	µg/l	0.10	< 0.10
Bromochloromethane	N	1760	µg/l	0.50	< 0.50
Trichloromethane	N	1760	µg/l	0.10	< 0.10
1,1,1-Trichloroethane	N	1760	µg/l	0.10	< 0.10
Tetrachloromethane	N	1760	µg/l	0.10	< 0.10
1,1-Dichloropropene	N	1760	µg/l	0.10	< 0.10
Benzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloroethane	N	1760	µg/l	0.20	< 0.20
Trichloroethene	N	1760	µg/l	0.10	< 0.10
1,2-Dichloropropane	N	1760	µg/l	0.10	< 0.10
Dibromomethane	N	1760	µg/l	0.10	< 0.10
Bromodichloromethane	N	1760	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44123
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547299
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
cis-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
Toluene	N	1760	µg/l	0.10	< 0.10
Trans-1,3-Dichloropropene	N	1760	µg/l	1.0	< 1.0
1,1,2-Trichloroethane	N	1760	µg/l	0.1	< 0.1
Tetrachloroethene	N	1760	µg/l	0.10	< 0.10
1,3-Dichloropropane	N	1760	µg/l	0.20	< 0.20
Dibromochloromethane	N	1760	µg/l	1.0	< 1.0
1,2-Dibromoethane	N	1760	µg/l	0.50	< 0.50
Chlorobenzene	N	1760	µg/l	0.10	< 0.10
1,1,1,2-Tetrachloroethane	N	1760	µg/l	0.20	< 0.20
Ethylbenzene	N	1760	µg/l	0.10	< 0.10
m & p-Xylene	N	1760	µg/l	0.10	< 0.10
o-Xylene	N	1760	µg/l	0.10	< 0.10
Styrene	N	1760	µg/l	0.10	< 0.10
Tribromomethane	N	1760	µg/l	1.0	< 1.0
Isopropylbenzene	N	1760	µg/l	0.10	< 0.10
Bromobenzene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichloropropane	N	1760	µg/l	5	< 5
N-Propylbenzene	N	1760	µg/l	0.10	< 0.10
2-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
1,3,5-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
4-Chlorotoluene	N	1760	µg/l	0.10	< 0.10
Tert-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2,4-Trimethylbenzene	N	1760	µg/l	0.10	< 0.10
Sec-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,3-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
4-Isopropyltoluene	N	1760	µg/l	0.10	< 0.10
1,4-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
N-Butylbenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dichlorobenzene	N	1760	µg/l	0.10	< 0.10
1,2-Dibromo-3-Chloropropane	N	1760	µg/l	5	< 5
1,2,4-Trichlorobenzene	N	1760	µg/l	0.10	< 0.10
Hexachlorobutadiene	N	1760	µg/l	0.10	< 0.10
1,2,3-Trichlorobenzene	N	1760	µg/l	0.20	< 0.20
Methyl Tert-Butyl Ether	N	1760	µg/l	0.10	< 0.10
Perfluorooctyl sulfonate (PFOS) (Subcon)	SN		µg/l	N/A	See Attached
N-Nitrosodimethylamine	N	1790	µg/l	0.50	< 0.50
Phenol	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44123
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547299
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2-Chlorophenol	N	1790	µg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	µg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50
4-Methylphenol	N	1790	µg/l	0.50	< 0.50
Nitrobenzene	N	1790	µg/l	0.50	< 0.50
Isophorone	N	1790	µg/l	0.50	< 0.50
2-Nitrophenol	N	1790	µg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	µg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1790	µg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	µg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	µg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	µg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	µg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	µg/l	0.50	< 0.50
2-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Acenaphthylene	N	1790	µg/l	0.50	< 0.50
Dimethylphthalate	N	1790	µg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Acenaphthene	N	1790	µg/l	0.50	< 0.50
3-Nitroaniline	N	1790	µg/l	0.50	< 0.50
Dibenzofuran	N	1790	µg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	µg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	µg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50
4-Nitroaniline	N	1790	µg/l	0.50	< 0.50

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44123
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547299
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50
Azobenzene	N	1790	µg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	µg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	µg/l	0.50	< 0.50
Pentachlorophenol	N	1790	µg/l	0.50	< 0.50
Phenanthrene	N	1790	µg/l	0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50
Carbazole	N	1790	µg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	µg/l	0.50	< 0.50
Fluoranthene	N	1790	µg/l	0.50	< 0.50
Pyrene	N	1790	µg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	µg/l	0.50	< 0.50
Chrysene	N	1790	µg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	µg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	µg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	µg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	µg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	µg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	µg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	µg/l	0.50	< 0.50
4-Nitrophenol	N	1790	µg/l	0.50	< 0.50
Naphthalene	N	1800	µg/l	0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010

Results - Water

Project: D2027-22 Stansted Terminal (ST2) - Ground Investigation

Client: SOCOTEC			**Chemtest Job No.:**		22-44123
Quotation No.: Q22-27911			**Chemtest Sample ID.:**		1547299
Order No.: D11866			Client Sample Ref.:		151122
			Client Sample ID.:		EW151122-DS13
			Sample Location:		DS13
			Sample Type:		WATER
			Date Sampled:		15-Nov-2022
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20
PCB 81	N	1815	µg/l	0.010	< 0.010
PCB 77	N	1815	µg/l	0.010	< 0.010
PCB 105	N	1815	µg/l	0.010	< 0.010
PCB 114	N	1815	µg/l	0.010	< 0.010
PCB 118	N	1815	µg/l	0.010	< 0.010
PCB 123	N	1815	µg/l	0.010	< 0.010
PCB 126	N	1815	µg/l	0.010	< 0.010
PCB 156	N	1815	µg/l	0.010	< 0.010
PCB 157	N	1815	µg/l	0.010	< 0.010
PCB 167	N	1815	µg/l	0.010	< 0.010
PCB 169	N	1815	µg/l	0.010	< 0.010
PCB 189	N	1815	µg/l	0.010	< 0.010
Total PCBs (12 Congeners)	N	1815	µg/l	0.010	< 0.010
Resorcinol	U	1920	mg/l	0.0050	< 0.0050
Phenol	U	1920	mg/l	0.0050	< 0.0050
Cresols	U	1920	mg/l	0.0050	< 0.0050
Xylenols	U	1920	mg/l	0.0050	< 0.0050
1-Naphthol	N	1920	mg/l	0.0050	< 0.0050
Trimethylphenols	U	1920	mg/l	0.0050	< 0.0050
Total Phenols	U	1920	mg/l	0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1495	Low Level Hexavalent Chromium in Waters	Chromium [VI]	Colorimetric determination of hexavalent chromium expressed as Cr (VI) µg/l in water, using Ion Chromatography and UV-visible spectrophotometry.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1815	Polychlorinated Biphenyls (PCB) ICES7 Congeners in Waters by GC-MS	ICES7 PCB congeners	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: [redacted]

Chemtest
Willie Snaith Rd
Newmarket
Suffolk
CB8 7SQ

Attention: Subcontracting Lab

CERTIFICATE OF ANALYSIS

Date of report Generation:	23 November 2022
Customer:	Chemtest
Sample Delivery Group (SDG):	221118-115
Your Reference:	22-44123
Location:	Not Specified
Report No:	669507
Order Number:	23170

We received 1 sample on Friday November 18, 2022 and 1 of these samples were scheduled for analysis which was completed on Wednesday November 23, 2022. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:

[redacted]

Sonia McWhan

Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG: 221118-115 **Report Number:** 669507 **Superseded Report:**
Client Ref.: 22-44123 **Location:** Not Specified

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27184026	1547299 EW151122-DS13			15/11/2022

Only received samples which have had analysis scheduled will be shown on the following pages.

CERTIFICATE OF ANALYSIS

SDG: 221118-115 **Report Number:** 669507 **Superseded Report:**
Client Ref.: 22-44123 **Location:** Not Specified

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

	Lab Sample No(s)		27184026
	Customer Sample Reference		1547299 EW151122-DS13
	AGS Reference		
	Depth (m)		
	Container		1lplastic (ALE221)
	Sample Type		GW
PFAS Liquids	All	NDPs: 0 Tests: 1	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 221118-115 **Report Number:** 669507 **Superseded Report:**
Client Ref.: 22-44123 **Location:** Not Specified

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Customer Sample Ref.			1547299 EW151122-DS1 3
Depth (m)			.
Sample Type			Ground Water (GW)
Date Sampled			15/11/2022
Sample Time			.
Date Received			18/11/2022
SDG Ref			221118-115
Lab Sample No.(s)			27184026
AGS Reference			
Component	**LOD/Units**	**Method**	
PFOA (335-67-1)	<0.65 ng/l	TM337	10.7 #
Linear PFOS (1763-23-1)	<0.65 ng/l	TM337	17.2 #
Branched PFOS	<0.65 ng/l	TM337	8.5 #
Total PFOS	<0.65 ng/l	TM337	25.7 #

Table of Results - Appendix

Method No	Reference	Description
TM337	PFAS in Environmental Water Matrices	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 221118-115 **Report Number:** 669507 **Superseded Report:**
Client Ref.: 22-44123 **Location:** Not Specified

Test Completion Dates

Lab Sample No(s)	27184026	
Customer Sample Ref.	1547299 EW15112 2-DS13	
AGS Ref.		
Depth		
Type	Ground Water	
PFAS Liquids	23-Nov-2022	

SDG:	221118-115	**Report Number:**	669507	**Superseded Report:**	
Client Ref:	22-44123	**Location:**	Not Specified		

Appendix

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX G
PHOTOGRAPHS

Photographs (CP inspection pits)	CP03 to CP11
Photographs (CPT inspection pits)	CPT01 to CPT03, CPT05 to CPT15
Photographs (DS/RC and inspection pits)	RC01, RC01A, RC02 to RC04
Photographs (DS and inspection pits)	DS01 to DS20
Photographs (TP)	TP01 to TP14

Photographs

CP03 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP03
	Carried out for	Marriott Civils	

Photographs

CP04 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP04
	Carried out for	Marriott Civils	

Photographs

CP05 GL to 1.50m Inspection Pit

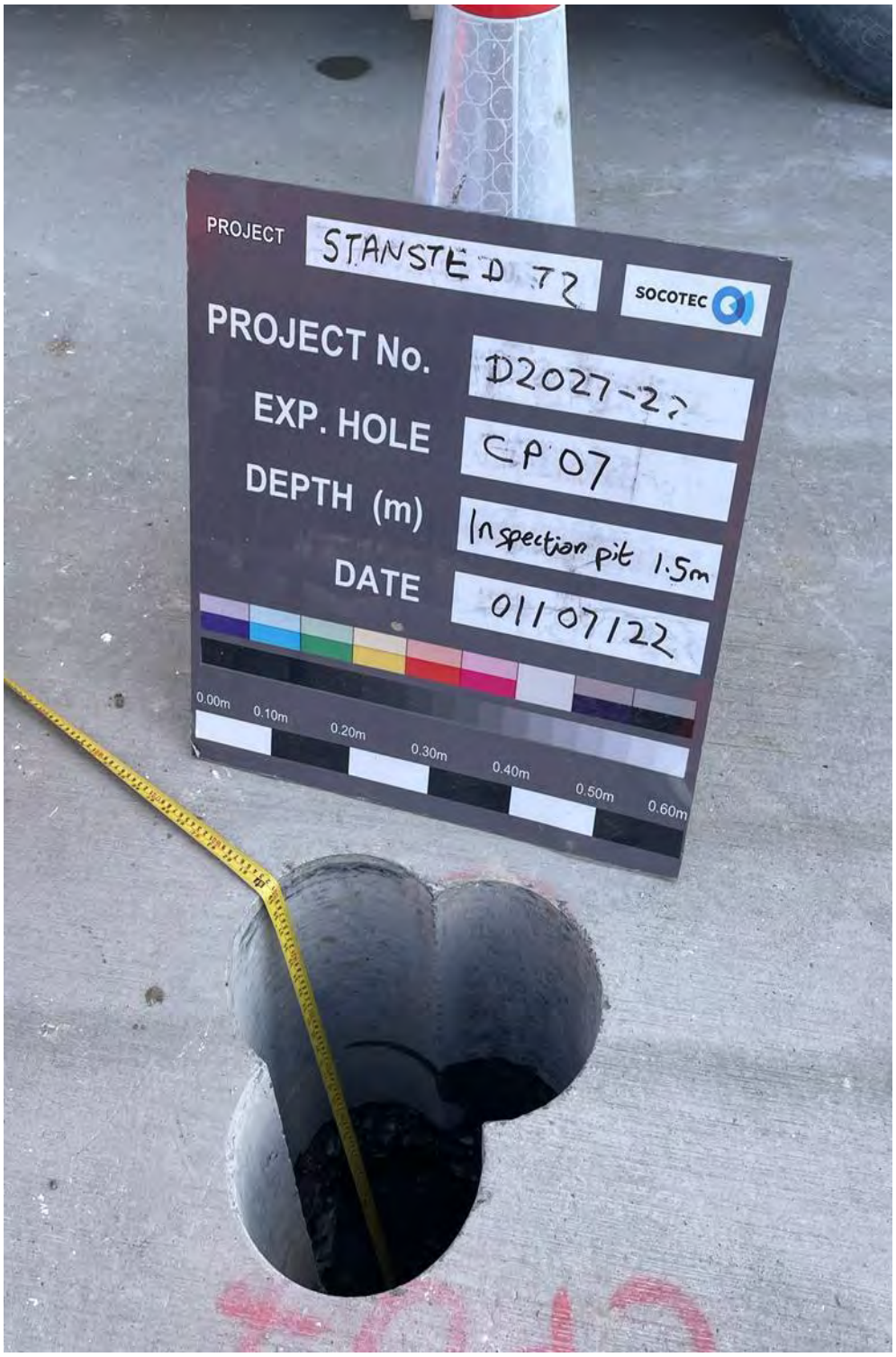
Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP05
	Carried out for	Marriott Civils	

Photographs

CP06 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP06
	Carried out for	Marriott Civils	

Photographs



CP07 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP07
	Carried out for	Marriott Civils	

Photographs

CP08 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP08
	Carried out for	Marriott Civils	

Photographs

CP09 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP09
	Carried out for	Marriott Civils	

Photographs

CP10 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP10
	Carried out for	Marriott Civils	

Photographs

CP11 Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CP11
	Carried out for	Marriott Civils	

Photographs

CPT01 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT01
	Carried out for	Marriott Civils	

Photographs

CPT02 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT02
	Carried out for	Marriott Civils	

Photographs

CPT03 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT03
	Carried out for	Marriott Civils	

Photographs

CPT05 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT05
	Carried out for	Marriott Civils	

Photographs

CPT06 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT06
	Carried out for	Marriott Civils	

Photographs

CPT07 GL to 1.50m Inspection Pit

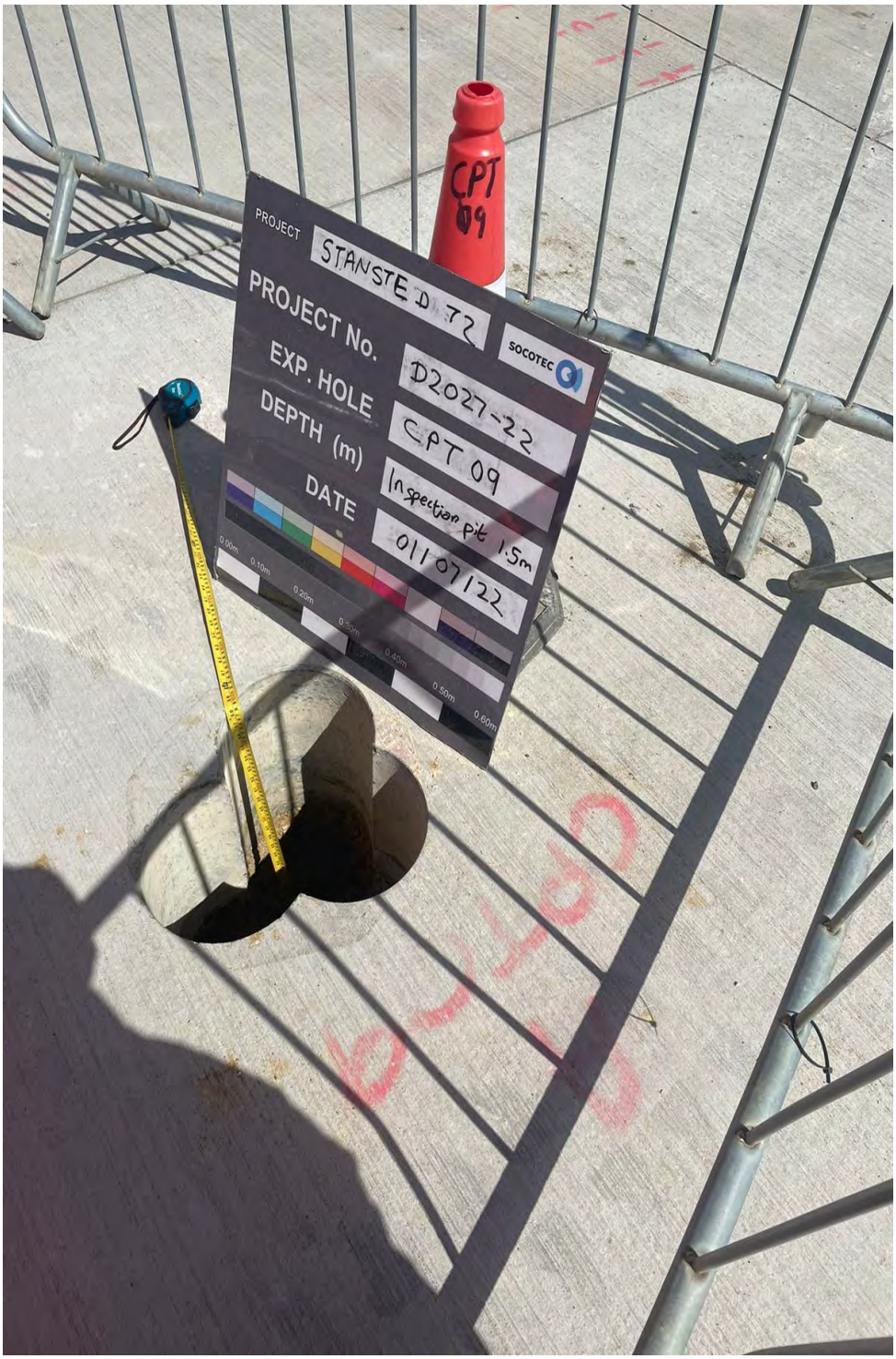
Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT07
	Carried out for	Marriott Civils	

Photographs

CPT08 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT08
	Carried out for	Marriott Civils	

Photographs



CPT09 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT09
	Carried out for	Marriott Civils	

Photographs

CPT10 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT10
	Carried out for	Marriott Civils	

Photographs

CPT11 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT11
	Carried out for	Marriott Civils	

Photographs

CPT12 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT12
	Carried out for	Marriott Civils	

Photographs

CPT13 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT13
	Carried out for	Marriott Civils	

Photographs

CPT14 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT14
	Carried out for	Marriott Civils	

Photographs

CPT15 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	CPT15
	Carried out for	Marriott Civils	

Photographs

RC01 GL to 1.50m Inspection Pit

RC01 1.50m to 4.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01
	Carried out for	Marriott Civils	

Photographs

RC01 4.50m to 6.50m

RC01 6.50m to 9.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01
	Carried out for	Marriott Civils	

Photographs

RC01 9.50m to 12.50m

RC01 14.00m to 17.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01
	Carried out for	Marriott Civils	

Photographs

RC01 17.50m to 20.00m

RC01 20.00m to 23.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01
	Carried out for	Marriott Civils	

Photographs

RC01 23.00m to 25.00m

RC01 25.00m to 26.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01
	Carried out for	Marriott Civils	

Photographs

RC01A 1.50m to 4.00m

RC01A 4.00m to 6.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC01A
	Carried out for	Marriott Civils	

Photographs

RC02 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

Photographs

RC02 1.50m to 4.20m

RC02 4.20m to 6.40m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

Photographs

RC02 6.40m to 9.40m

RC02 9.40m to 12.40m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

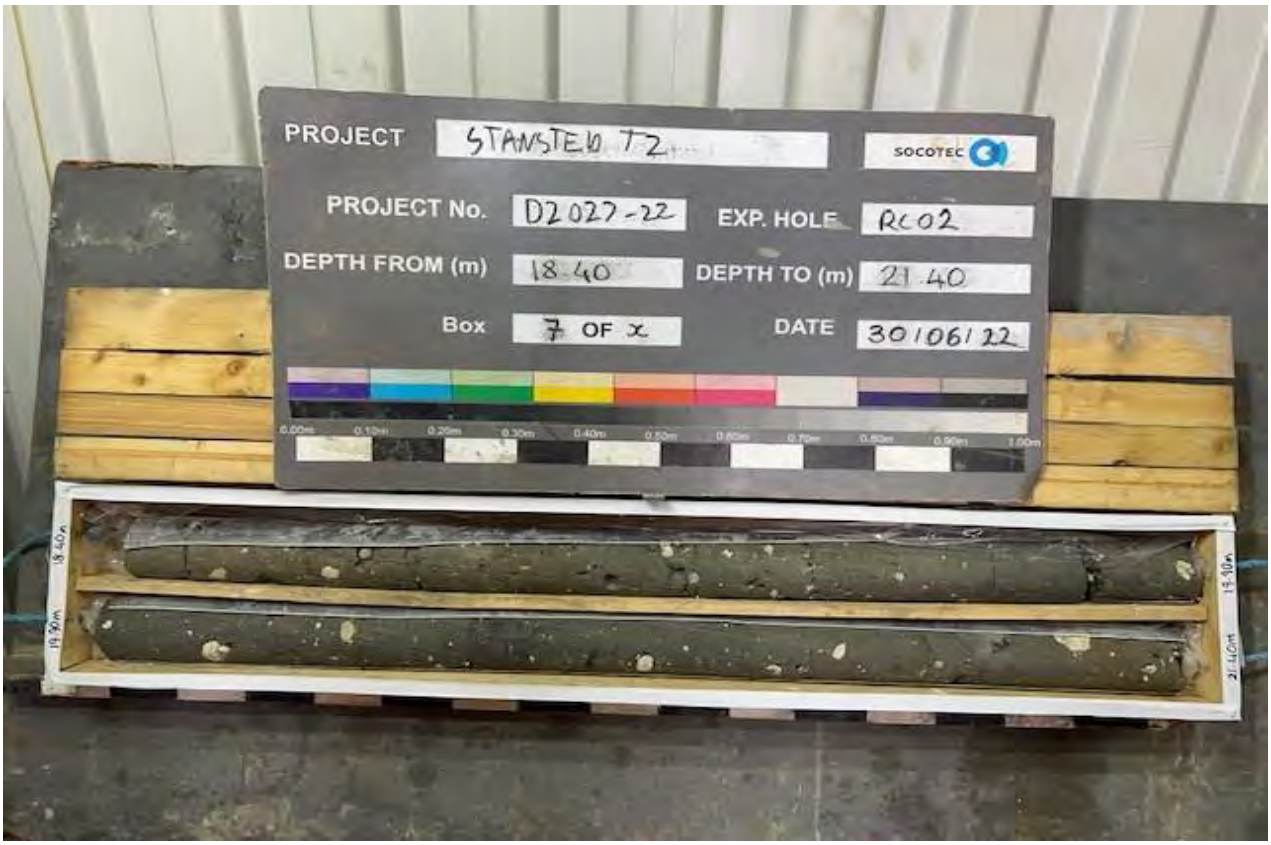
Photographs

RC02 12.40m to 15.40m

RC02 15.40m to 18.40m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

Photographs

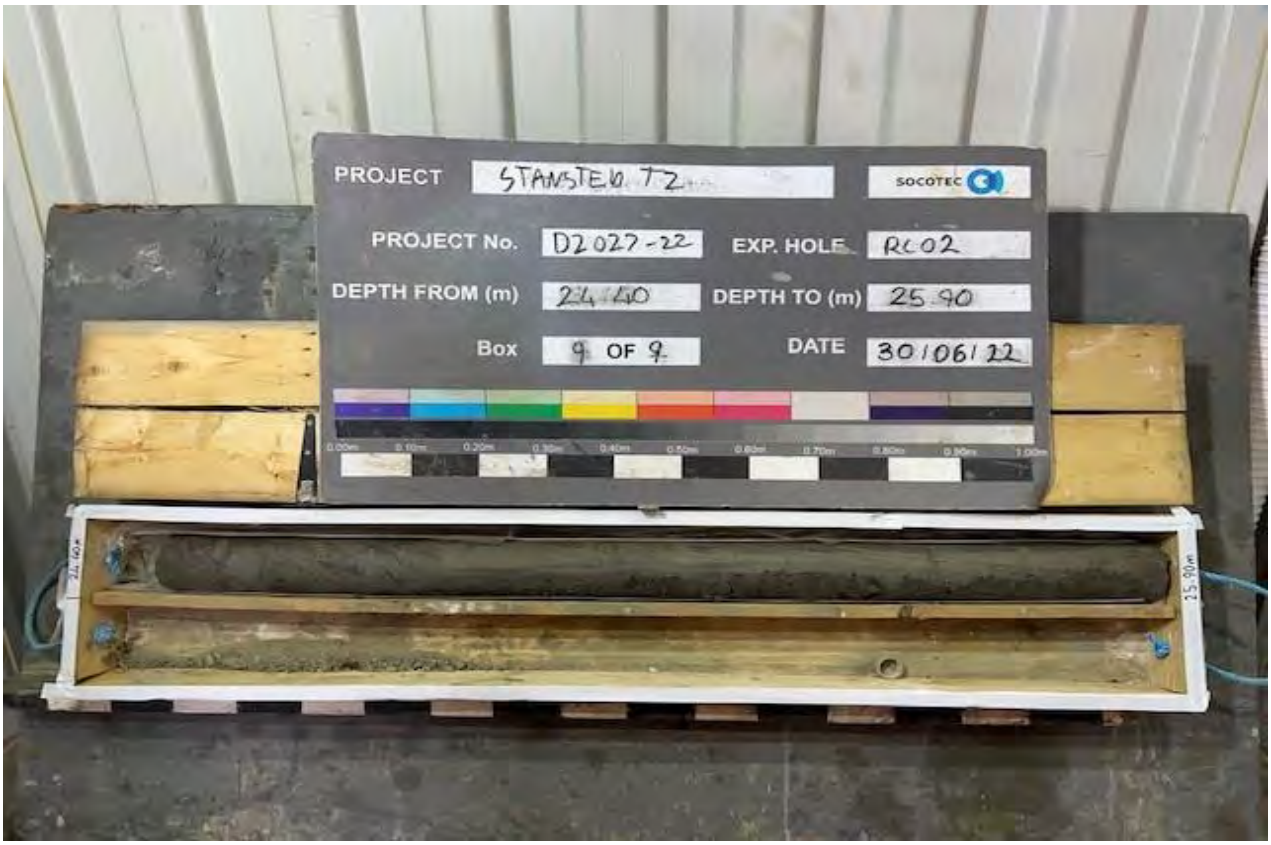


RC02 18.40m to 21.40m

RC02 21.40m to 24.40m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

Photographs



RC02 24.40m to 25.90m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC02
	Carried out for	Marriott Civils	

Photographs

RC03 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

RC03 1.50m to 4.10m

RC03 4.10m to 6.60m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

RC03 6.60m to 9.60m

RC03 9.60m to 12.60m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

RC03 12.60m to 15.60m

RC03 15.60m to 18.60m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

RC03 18.60m to 21.60m

RC03 21.60m to 24.60m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

RC03 24.60m to 26.10m

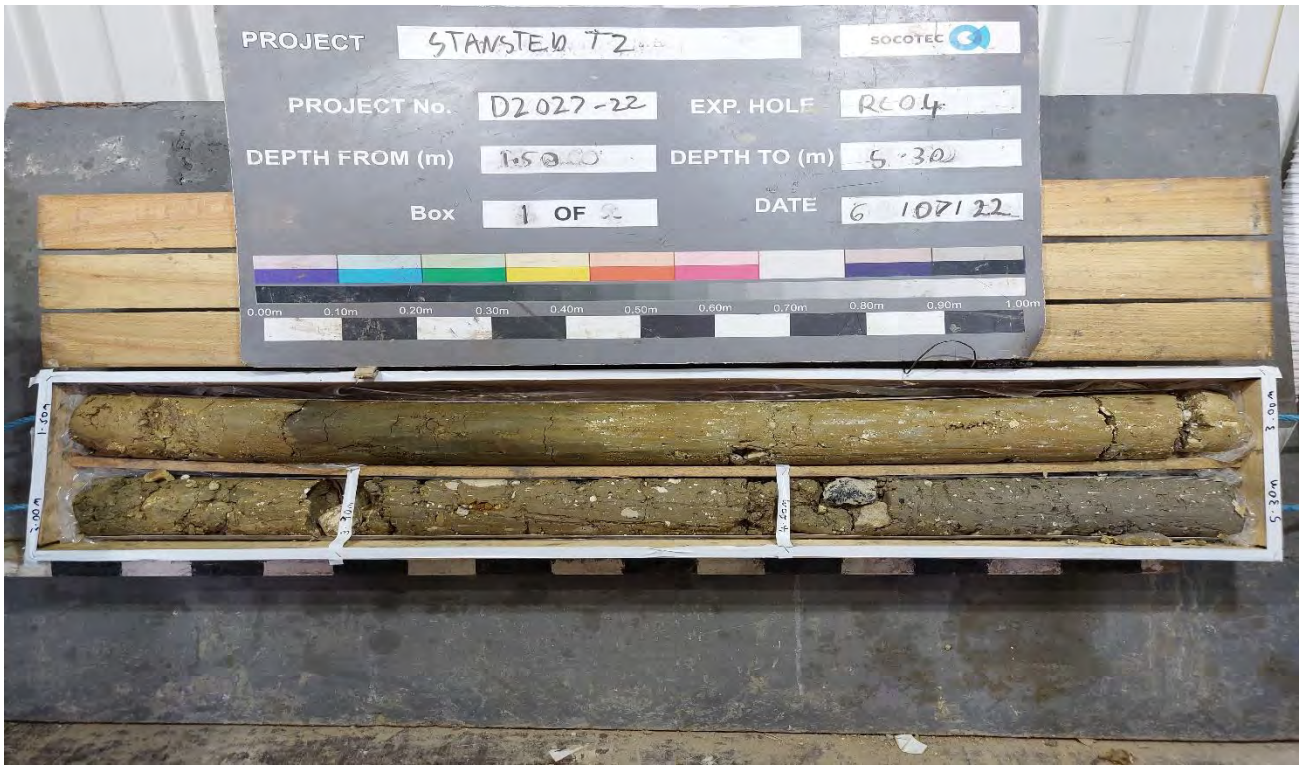
Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC03
	Carried out for	Marriott Civils	

Photographs

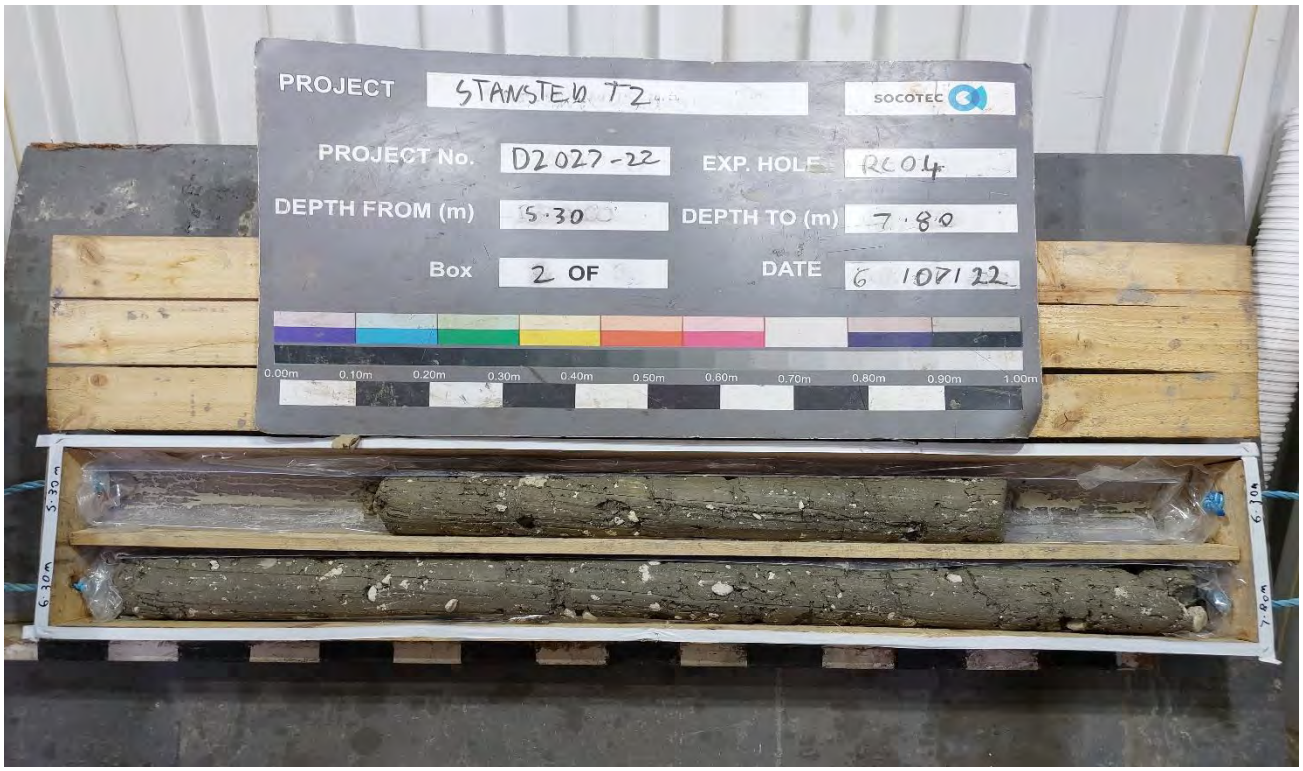
RC04 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC04
	Carried out for	Marriott Civils	

Photographs



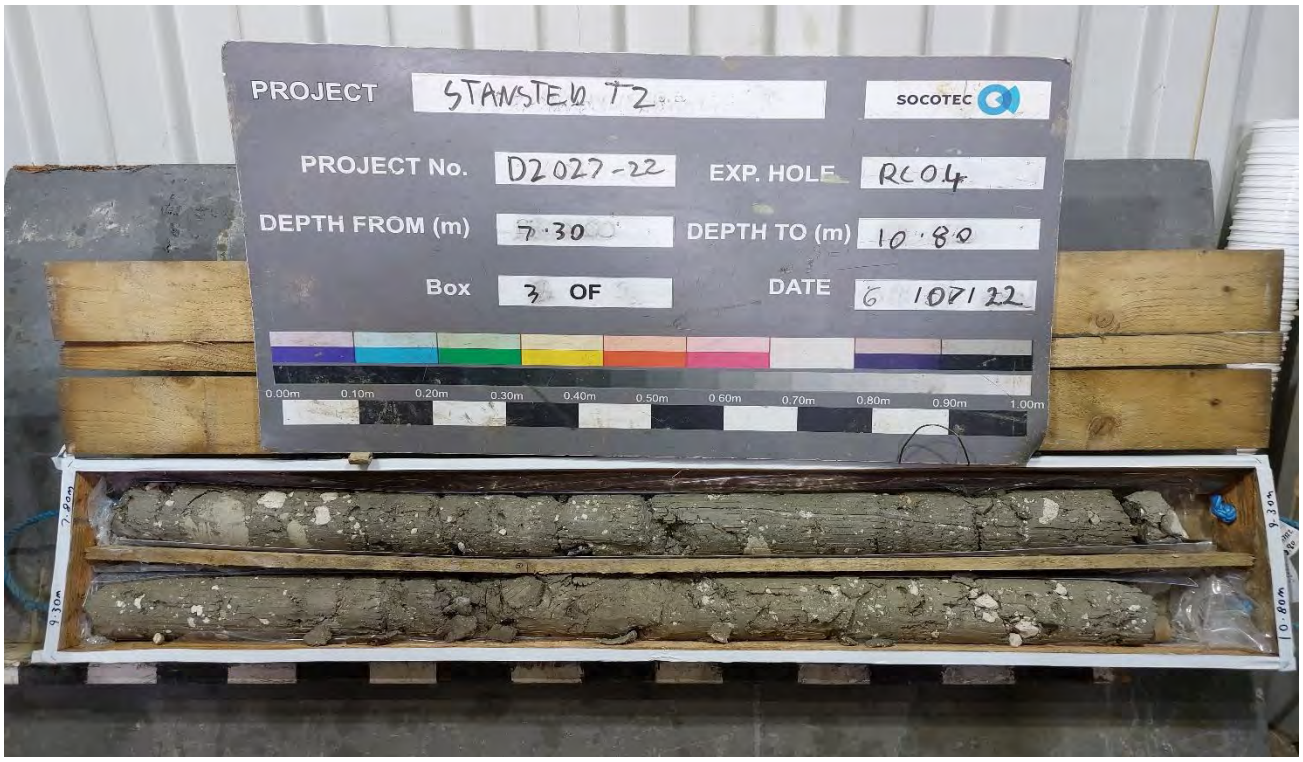
RC04 1.50m to 5.30m



RC04 5.30m to 7.80m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC04
	Carried out for	Marriott Civils	

Photographs



RC04 7.30m to 10.80m

RC04 10.80m to 13.80m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC04
	Carried out for	Marriott Civils	

Photographs

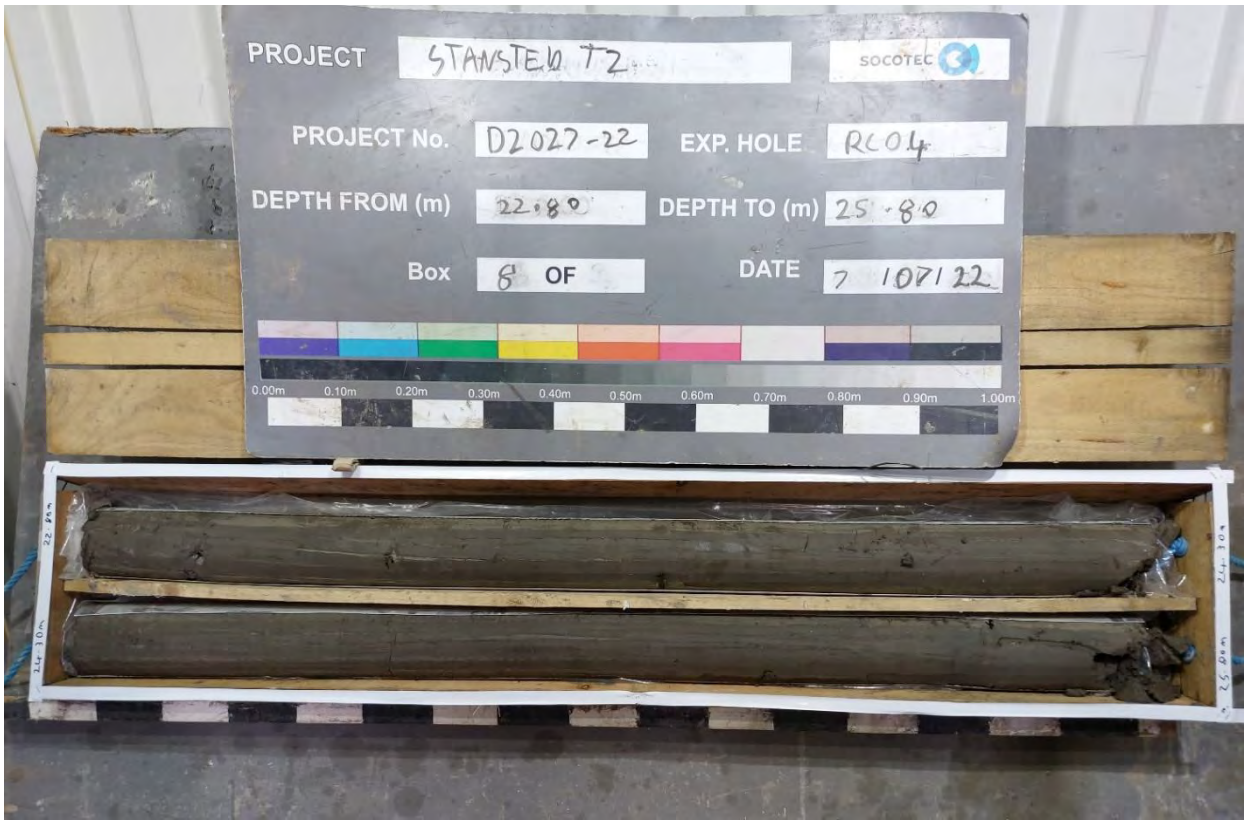
RC04 13.80m to 16.80m

RC04 16.80m to 19.80m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC04
	Carried out for	Marriott Civils	

Photographs

RC04 19.80m to 22.80m



RC04 22.80m to 25.80m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	RC04
	Carried out for	Marriott Civils	

Photographs

DS01 GL to 1.50m Inspection Pit

DS01 1.50m to 2.30m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS01
	Carried out for	Marriott Civils	

Photographs

DS02 GL to 1.50m Inspection Pit

DS02 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS02
	Carried out for	Marriott Civils	

Photographs

DS03 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS03
	Carried out for	Marriott Civils	

Photographs

DS03 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS03
	Carried out for	Marriott Civils	

Photographs

DS04 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS04
	Carried out for	Marriott Civils	

Photographs

DS04 1.50m to 3.50m

DS04 3.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS04
	Carried out for	Marriott Civils	

Photographs

DS05 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS05
	Carried out for	Marriott Civils	

Photographs

DS05 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS05
	Carried out for	Marriott Civils	

Photographs

DS06 1.50m to 4.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS06
	Carried out for	Marriott Civils	

Photographs

DS07 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS07
	Carried out for	Marriott Civils	

Photographs

DS07 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS07
	Carried out for	Marriott Civils	

Photographs

DS08 1.50m to 2.50m

DS08 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (STG) Ground Investigation	Figure
	Project No.	D2027-22	DS08
	Carried out for	Marriott Civils	

Photographs

DS08 3.50m to 4.50m

DS08 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (STG) Ground Investigation	Figure
	Project No.	D2027-22	DS08
	Carried out for	Marriott Civils	

Photographs

DS09 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS09
	Carried out for	Marriott Civils	

Photographs

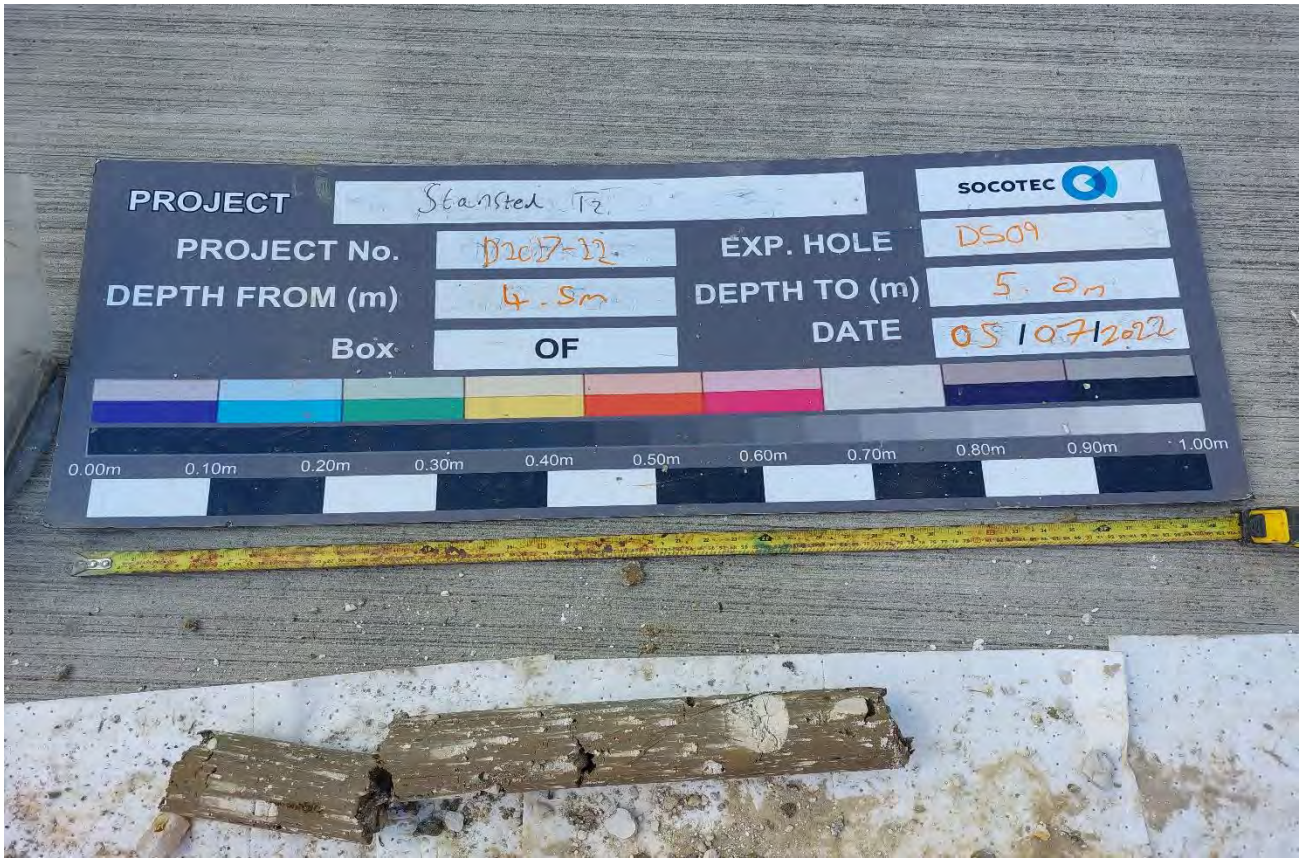
DS09 1.50m to 2.50m

DS09 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS09
	Carried out for	Marriott Civils	

Photographs

DS09 3.50m to 4.50m



DS09 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS09
	Carried out for	Marriott Civils	

Photographs

DS10 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS10
	Carried out for	Marriott Civils	

Photographs

DS10 1.50m to 2.50m

NO PHOTO TAKEN

DS10 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS10
	Carried out for	Marriott Civils	

Photographs

DS10 3.50m to 4.50m

DS10 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS10
	Carried out for	Marriott Civils	

Photographs

DS11 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS11
	Carried out for	Marriott Civils	

Photographs

DS11 1.50m to 2.50m

NO PHOTO TAKEN

DS11 2.50m to 3.50m

Notes:	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure**
	Project No.	**D2027-22**	**DS11**
	Carried out for	**Marriott Civils**	

Photographs

DS11 3.50m to 4.50m

DS11 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS11
	Carried out for	Marriott Civils	

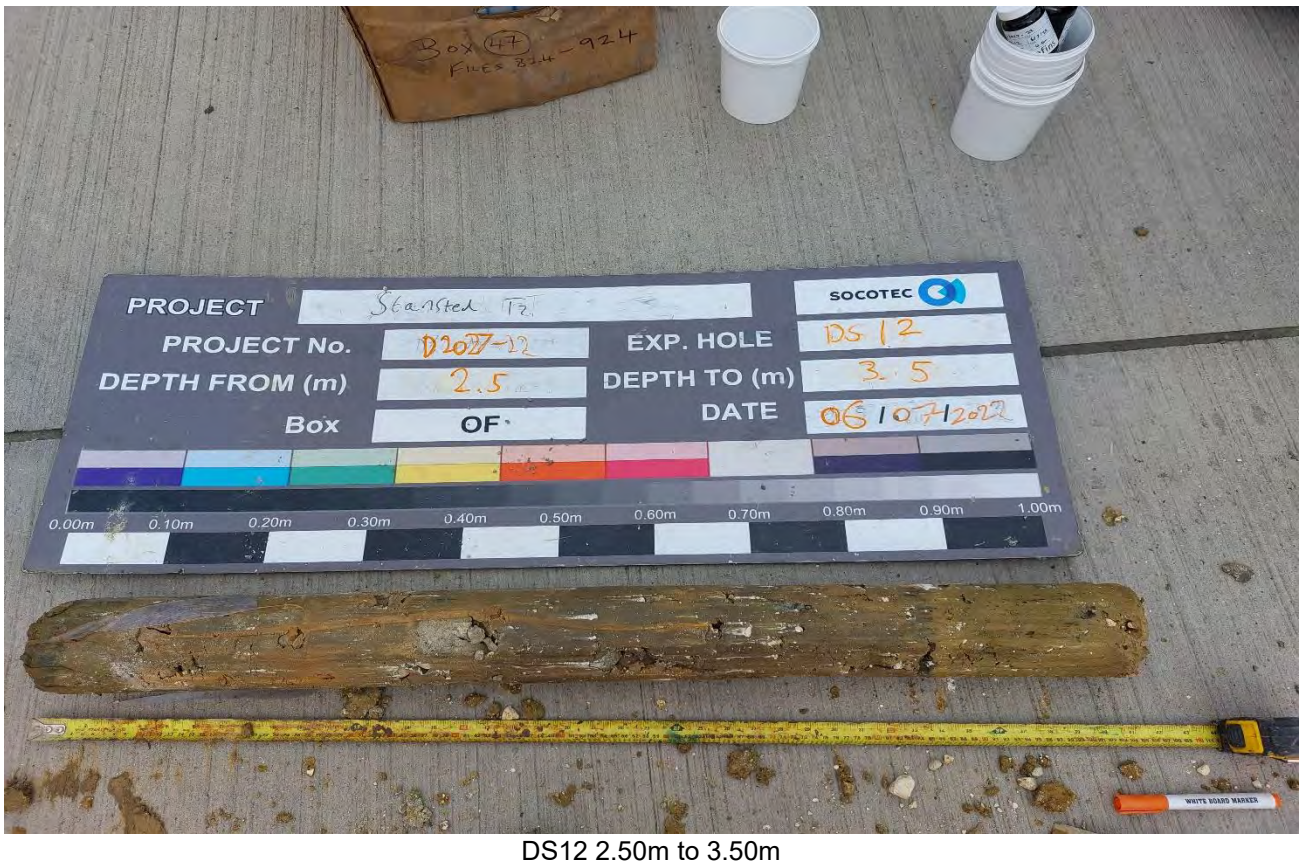
Photographs

DS12 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS12
	Carried out for	Marriott Civils	

Photographs

DS12 1.50m to 2.50m



DS12 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS12
	Carried out for	Marriott Civils	

Photographs

DS12 3.50m to 4.50m

DS12 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS12
	Carried out for	Marriott Civils	

Photographs

DS13 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS13
	Carried out for	Marriott Civils	

Photographs

DS13 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS13
	Carried out for	Marriott Civils	

Photographs

DS14 GL to 1.50m Inspection Pit

DS14 1.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS14
	Carried out for	Marriott Civils	

Photographs

DS15 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS15
	Carried out for	Marriott Civils	

Photographs

DS15 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS15
	Carried out for	Marriott Civils	

Photographs

DS16 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS16
	Carried out for	Marriott Civils	

Photographs

DS16 1.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS16
	Carried out for	Marriott Civils	

Photographs

DS18 – Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS17
	Carried out for	Marriott Civils	

Photographs

DS17 1.50m – 5.00m

Notes:	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure**
	Project No.	**D2027-22**	**DS17**
	Carried out for	**Marriott Civils**	

Photographs

DS18 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS18
	Carried out for	Marriott Civils	

Photographs

DS18 1.50m to 2.50m

DS18 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS18
	Carried out for	Marriott Civils	

Photographs

DS18 3.50m to 4.40m

DS18 4.40m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS18
	Carried out for	Marriott Civils	

Photographs

DS19 GL to 1.50m Inspection Pit

DS19 1.50m to 2.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS19
	Carried out for	Marriott Civils	

Photographs

DS19 2.50m to 3.50m

DS19 3.50m to 4.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS19
	Carried out for	Marriott Civils	

Photographs

DS19 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS19
	Carried out for	Marriott Civils	

Photographs

DS20 GL to 1.50m Inspection Pit

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS20
	Carried out for	Marriott Civils	

Photographs

DS20 1.50m to 2.50m

DS20 2.50m to 3.50m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS20
	Carried out for	Marriott Civils	

Photographs

DS20 3.50m to 4.50m

DS20 4.50m to 5.00m

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	DS20
	Carried out for	Marriott Civils	

Photographs

TP01 GL to 4.00m Face A

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
See log for orientation of Faces	Project No.	D2027-22	TP01
	Carried out for	Marriott Civils	

Photographs

TP01 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP01**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP01 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP01
	Carried out for	Marriott Civils	

Photographs

TP02 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project** **Project No.** **Carried out for**	**Stansted Terminal 2 (ST2) Ground Investigation** **D20227-22** **Marriott Civils**	**Figure** **TP02**

Photographs

TP02 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP02**
	Project No.	**D20227-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP02 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D20227-22	TP02
	Carried out for	Marriott Civils	

Photographs

TP03 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP03**
	Project No.	**D20227-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP03 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP03**
	Project No.	**D20227-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP03 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D20227-22	TP03
	Carried out for	Marriott Civils	

Photographs

TP04 GL to 4.00m Face A

TP04 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP04**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP04 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP04
	Carried out for	Marriott Civils	

Photographs

TP05 GL to 4.00m Face A

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
See log for orientation of Faces	Project No.	D2027-22	TP05
	Carried out for	Marriott Civils	

Photographs

TP05 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP05**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP06 GL to 4.00m Face A

TP06 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project** Stansted Terminal 2 (ST2) Ground Investigation **Project No.** D2027-22 **Carried out for** Marriott Civils	**Figure** **TP06**

Photographs

TP07 GL to 4.00m Face A

TP07 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project** Stansted Terminal 2 (ST2) Ground Investigation **Project No.** D2027-22 **Carried out for** Marriott Civils	**Figure** **TP07**

Photographs

TP08 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP08**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP08 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project** **Project No.** **Carried out for**	**Stansted Terminal 2 (ST2) Ground Investigation** **D2027-22** **Marriott Civils**	**Figure** **TP08**

Photographs

TP08 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP08
	Carried out for	Marriott Civils	

Photographs

TP09 GL to 4.00m Face A

TP09 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project** Stansted Terminal 2 (ST2) Ground Investigation **Project No.** D2027-22 **Carried out for** Marriott Civils	**Figure** **TP09**

Photographs

TP10 GL to 2.50m Face A

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP10**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP10 GL to 2.50m Face B

Notes: See log for orientation of Faces	**Project** Stansted Terminal 2 (ST2) Ground Investigation **Project No.** D2027-22 **Carried out for** Marriott Civils	**Figure** **TP10**

Photographs

TP10 GL to 2.50m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP10
	Carried out for	Marriott Civils	

Photographs

TP11 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP11**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP11 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP11**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP11 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP11
	Carried out for	Marriott Civils	

Photographs

TP12 GL to 4.00m Face C

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP12**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP12 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP12**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP12 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP12
	Carried out for	Marriott Civils	

Photographs

TP13 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP13**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	

Photographs

TP13 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project** **Project No.** **Carried out for**	**Stansted Terminal 2 (ST2) Ground Investigation** **D2027-22** **Marriott Civils**	**Figure** **TP13**

Photographs

TP13 GL to 4.00m Spoil

Notes:	Project	Stansted Terminal 2 (ST2) Ground Investigation	Figure
	Project No.	D2027-22	TP13
	Carried out for	Marriott Civils	

Photographs

TP14 GL to 4.00m Face A

Notes: See log for orientation of Faces	**Project** **Project No.** **Carried out for**	**Stansted Terminal 2 (ST2) Ground Investigation** **D2027-22** **Marriott Civils**	**Figure** **TP14**

Photographs

TP14 GL to 4.00m Face B

Notes: See log for orientation of Faces	**Project**	**Stansted Terminal 2 (ST2) Ground Investigation**	**Figure** **TP14**
	Project No.	**D2027-22**	
	Carried out for	**Marriott Civils**	