

SEC Ltd

# Factual Geotechnical Site Investigation Report

At:

9 Crownfields,  
Sevenoaks,  
Kent,  
TN13 1EF

For:

David Melia c/o  
Blackburn Architects

**Private and Confidential**


Ref: 5292 23 05 15 Rpt 01 Rev A RC BB

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Sevenoaks  
Environmental  
Consultancy Ltd

## Quality Assurance Control Sheet

|   |  |  |             |
|---|--|--|-------------|
| <b>This report was produced in accordance with the<br/>Sevenoaks Environmental Consultancy Ltd<br/>Quality Assurance System</b> |  |  |             |
| <b>Report Ref:</b>  | 5292 23 05 15 Rpt 01 Rev A RC BB   |  |             |
|   | <b>Consultants Name</b>  | <b>Consultants Signature</b>   | <b>Date</b> |
| <b>Report written by:</b>   | <b>Rianna Cripps</b><br><i>(Assistant Geo-<br/>Environmental Consultant)</i> |  | 15/05/2023  |
| <b>Report reviewed by:</b>  | <b>Brendan Davis</b><br><i>(Technical Director)</i>                          |  |             |

# Contents

|  |    |
|--|----|
| Quality Assurance Control Sheet Contents | 2  |
| 1.0 Introduction                         | 4  |
| 2.0 Site Location and Description        | 5  |
| 3.0 Geology                              | 6  |
| 4.0 Scope of Works                       | 7  |
| 5.0 Fieldwork and Ground Conditions      | 8  |
| 6.0 Laboratory Test Results              | 9  |
| 7.0 General Limitations and Exceptions   | 10 |

## Appendices

|            |  |
|------------|--|
| Appendix A | Figures  |
| Appendix B | Site Photos  |
| Appendix C | Service Plans  |
| Appendix D | Preliminary UXO Desk Study                                   |
| Appendix E | Exploratory Hole Records                                     |
| Appendix F | In-situ Test Results (SPT Data and Calibration Certificates) |
| Appendix G | Geotechnical Laboratory Data                                 |

## Figures

|          |                                |
|----------|--------------------------------|
| Figure 1 | Site Location Plan             |
| Figure 2 | Existing Site Layout Plan      |
| Figure 3 | Proposed Site Layout Plan      |
| Figure 4 | Exploratory Hole Location Plan |

## 1.0 Introduction

- 1.1 The work covered by this report has been undertaken by Sevenoaks Environmental Consultancy Limited (SEC).
- 1.2 The Client for this project was David Melia c/o Blackburn Architects.
- 1.3 The site under consideration is known as 9 Crownfields, Sevenoaks, Kent, TN13 1EF (Appendix A - Figure 1 Site Location Plan).
- 1.4 The site comprises an irregular shaped plot of land with 1 no. residential development identified centrally to the site. To the rear of the property, the garden had been laid to concrete slab patio and soft landscaping, and to the front the site had been laid to tarmac hardstanding and soft landscaping (Appendix A - Figure 2 Existing Site Layout Plan). Access to the site was via a single lane road off of Crownfields (Appendix B – Site Photos).
- 1.5 We understand that this Factual Geotechnical Report is required to help inform foundation design parameters for the proposed development which involves the demolition of the existing on-site residential property, and the construction of 2 no. new residential properties (Appendix A - Figure 3 Proposed Site Layout Plan).
- 1.6 SEC have not been provided with any previous reports for the site.
- 1.7 Interpretative Geotechnical Reporting was beyond the scope of this investigation and therefore has not been undertaken.

## 2.0 Site Location and Description

2.1 The site was located on the southern side of Crownfields, along a single lane road. The site was located approximately on Ordnance Survey (OS) national grid reference 552758, 154462 (Appendix A - Figure 1 Site Location Plan).

2.2 The site comprised an irregular shaped plot of land, with 1 no. residential property identified centrally, and with garden areas laid to soft landscaping and hardstanding to the front and rear (see Appendix A Figure 2 – Existing Site Layout Plan).

The area locally appeared to be situated within a valley, and the site was identified to be raised within this valley on what appeared to be a peninsula of built up material/Made Ground spanning in an east to west direction, which is potentially indicative of previous earthworks. To the north of this peninsula and the site, a steep drop was noted before rising up to meet the slope of the valley, and the same was identified to the south with a less steep drop. A retaining wall presumably to the end of the peninsula, approximately 2.5m in height, was also evident immediately to the east of the site, and neighbouring properties at the same ground level on the built up peninsula were noted to the west, (Appendix B - Site Photos).

2.3 Offsite in all directions were other residential properties and associated gardens.

## 3.0 Geology

- 3.1 The geological records for the site obtained from the British Geological Survey website indicate that the site is on a geological boundary underlain by bedrock geology comprising the Hythe Formation (Sandstone and [subequal/subordinate] Limestone – interbedded), Sandgate Formation (Sandstone and Mudstone) and the Folkestone Formation (Sandstone) with no overlying superficial deposits.
- 3.2 There were no nearby representative BGS Boreholes to the site.

## 4.0 Scope of Works

- 4.1 Fieldwork was conducted in general accordance with the British Standard 5930:2015, "Code of Practice for Ground Investigations" and Eurocode 7, BSEN ISO 1:2002 and 2:2004.
- 4.2 The scope of work for the site investigation conducted generally included the following:
- Provision of Statutory Service Plans (Appendix C - Service Plans);
  - Production of RAMS, including a Preliminary UXO Desk Study (Appendix D - Preliminary UXO Desk Study);
  - Full time site supervision by an SEC Engineer to record ground conditions to BS5930 / Eurocode 7 and CIRIA 574, collect samples and document the investigation;
  - Mobilisation and site attendance by a UXO Detection Engineer to clear proposed exploratory hole locations;
  - Conduct of hand dug safety starter pits up to 1.2m bgl, including the use of Cable Avoidance Tool (CAT) to help reduce potential risks associated with buried services;
  - Site attendance by a Continuous Dynamic Sampler (CDS) drill rig and crew to undertake mini boreholes up to ~5m bgl with SPTs and collection of disturbed samples;
  - Installation of monitoring pipework within BH01 and BH03 to facilitate groundwater monitoring (although groundwater monitoring was not instructed by the Client);
  - Geotechnical laboratory analysis of samples for a range of parameters including Sulphates and pH, Sieve Analysis, Atterberg Limit (1 Point) and Moisture Content; and
  - Production of a Factual Geotechnical Site Investigation Report.
- 4.3 Exploratory hole locations were prescribed by the Client to investigate ground conditions within the vicinity of the proposed development (Appendix A - Figure 4 Exploratory Hole Location Plan).

## 5.0 Fieldwork and Ground Conditions

- 5.1 SEC attended the site on 13<sup>th</sup> April to conduct the site investigation fieldwork.
- 5.2 Exploratory hole locations are shown on the Exploratory Hole Location Plan (Appendix A - Figure 4 Exploratory Hole Location Plan).
- 5.3 All mini boreholes (BH01, BH02, BH03, BH04 and BH05) reached the target depth of 5.45m bgl (including conduct of SPTs at 1m intervals).
- 5.4 Full details of the ground conditions encountered are presented within the Exploratory Hole Records appended to this report (Appendix E - Exploratory Hole Records). However, the strata encountered have been summarised below.
- 5.5 **Made Ground:**
- Made Ground was encountered in all exploratory holes ranging in depth up to between 2.1m bgl (BH02) and 5.45m bgl (BH03). Made Ground comprised a slightly gravelly Sand within BH01, with fragments of flint and clinker. Topsoil was identified to comprise clayey Sand in BH02, BH04 and BH05, and the Made Ground in BH03 comprised Tarmac and potential Type 1 MOT.
- 5.6 **Natural Strata:**
- Natural deposits encountered beneath the Made Ground generally comprised a gravelly Clay within BH01, BH02 and BH05 or gravelly/clayey Sand within BH02 and BH04.
- 5.7 No groundwater was encountered within the boreholes during drilling.
- 5.8 In-Situ Standard Penetration Tests (SPTs) were undertaken within the CDS mini boreholes during drilling at 1m intervals (Appendix F - In-situ Test Results (SPT Data and Calibration Certificates)).



## 6.0 Laboratory Test Results

### Geotechnical Testing

6.1 The following geotechnical laboratory analysis was conducted at an independent (UKAS accredited) geotechnical laboratory in accordance with British Standards Methods of Test for Soils for Civil Engineering Purposes, BS 1377 (1990) to determine engineering parameters, (Appendix G - Geotechnical Laboratory Data). The Geotechnical Test Schedule was prescribed by SEC on behalf of the Client:

- 11 no. soil samples were analysed for 2:1 Water Soluble Sulphate and pH;
- 9 no. soil samples were analysed for Atterberg Limit (1 Point);
- 3 no. soil samples were analysed for Moisture Content; and
- 2 no. soil samples were analysed for Particle Size Distribution.

### Concrete Aggressive Chemical Tests and pH

#### Soil

6.2 2:1 Water Soluble Sulphate as SO<sub>4</sub> were recorded to range between 110mg/l (BH05 at 4.5m bgl) and 450mg/l (BH03 at 1.0m bgl).

6.3 The pH in soils was found between 7.5 (BH03 at 3.5m bgl) and 7.8 (BH05 at 4.5m bgl).

### Atterberg Limits and Moisture Contents

6.4 1-point Plasticity Indices were identified to range between 12.0% (BH01 at 4.3m bgl) and 29.0% (BH04 at 2.0m bgl).

6.5 Moisture Contents were identified to range between 18.0% (BH04 at 3.5m bgl) and 35.0% (BH03 at 2.5m bgl).

### Particle Size Distribution (Sedimentation Analysis)

6.6 The following provides a summary of the Particle Size Distribution results:

| Exploratory Hole | Depth (m) | Very Coarse % | Gravel % | Sand % | Fines % | D60   | D30   | D10    | Cu  | Cc  |
|------------------|-----------|---------------|----------|--------|---------|-------|-------|--------|-----|-----|
| BH02             | 5.0       | 0.0           | 45.9     | 41.0   | 13.1    | 4.14  | 0.284 | -      | -   | -   |
| BH05             | 1.5       | 0.0           | 1.7      | 90.9   | 7.4     | 0.193 | 0.155 | 0.0717 | 2.7 | 1.7 |

Cu = Coefficient of Uniformity

Cc = Coefficient of Curvature

## 7.0 General Limitations and Exceptions

1. The advice given in this report with respect to contaminated land/pollution is based on the guidelines available at the time of writing.
2. This report does not include for an assessment of above-ground structures on site for the presence of potential asbestos containing materials.
3. The Client is advised that the conditions observed on site by SEC at the time of the investigation or assessment are subject to change. Certain indicators of the presence of hazardous substances may have been latent at the time of the most recent site reconnaissance or investigation and they may subsequently have become observable.
4. Comments made relating to land gas or groundwater conditions are based on observations made at the time of an investigation unless otherwise stated. However, land gas or groundwater conditions may vary as a result of seasonal or other effects. It would be prudent to conduct groundwater monitoring.
5. This assessment may be subject to amendment in light of additional information becoming available.
6. The findings and opinions conveyed in this report are based on information obtained from a variety of sources, including that from chemical testing laboratories, and which SEC has assumed are correct. Nevertheless, SEC cannot and does not guarantee the authenticity or reliability of the information it has relied upon. SEC can accept no responsibility for inaccuracies within the data supplied by other parties.
7. This report is written in the context of an agreed scope of work between SEC and the Client and should not be used in a different context. In light of additional information becoming available, improved practices and changes in legislation, amendment or re-interpretation of the assessment or report in whole or part may be necessary after its original submission.
8. This report is provided for sole use by the Client and is confidential to them. No responsibility whatsoever for the contents of the report will be accepted to anyone other than the Client.
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10. The copyright of written materials supplied shall remain the property of SEC but with a royalty free perpetual licence, granted to the Client on payment in full of any outstanding monies.
11. SEC does not provide legal advice and the advice of the Client's legal advisors may also be required.

12. No allowance has been made in this report for testing which may be required for waste categorisation prior to the removal of any material from site for disposal.
13. The report is issued on the condition that SEC will under no circumstances be liable for any loss arising directly or indirectly from ground conditions between the boreholes or trial pits which have not been shown by the borehole, trial pits or other tests carried out during the investigation.
14. In addition, SEC will not be liable for any loss whatsoever arising directly or indirectly from any opinion given on the possible configuration of strata both between the borehole and/or trial pit positions and/or below the maximum depth of the investigation. Such opinions, where given, are for guidance only.
15. No person other than the client to whom this report is addressed, shall rely on it in any respect and no duty of care shall be owed to any such third party.
16. Copyright of this Report remains with SEC and in addition we will not accept any responsibility for the report and recommendations given until our invoice is settled in full.
17. It should be noted that the Made Ground depth recorded above is that encountered within the trial pits and exploratory holes undertaken during the phase of work to which this report pertains. Owing to the variable nature and unknown deposition criteria of Made Ground it is possible that deeper or more extensive areas of Made Ground may exist at this site which has not been revealed by the current work.

# Appendix A

## Figures



SITE: 9 Crownfields, Sevenoaks, Kent, TN13 1EF

SCALE: NTS

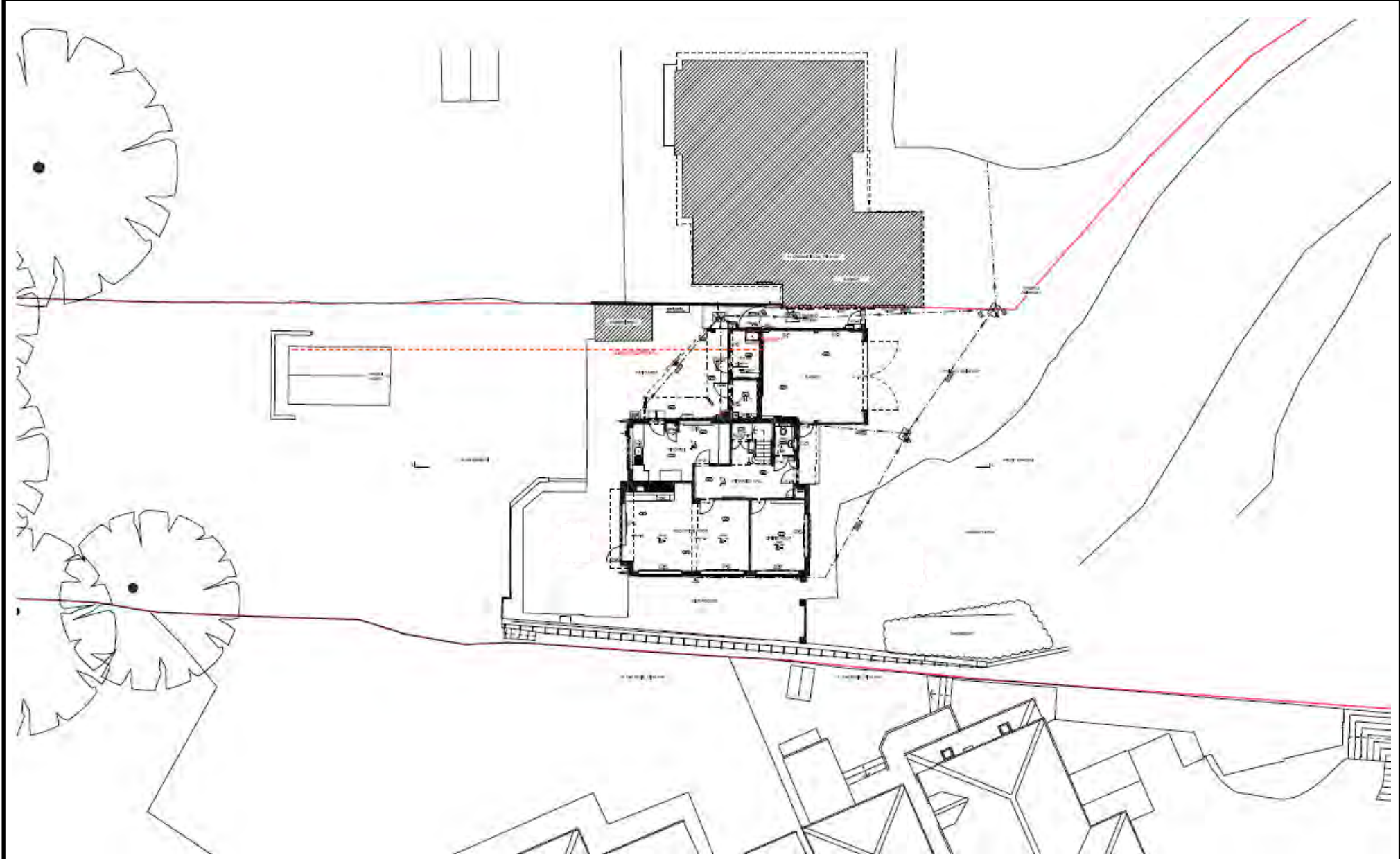
JOB NO: 5292

FIGURE TITLE: Site Location Plan

REV: 01

FIGURE NO: 1





SITE: 9 Crownfields, Sevenoaks, Kent, TN13 1EF

SCALE: NTS

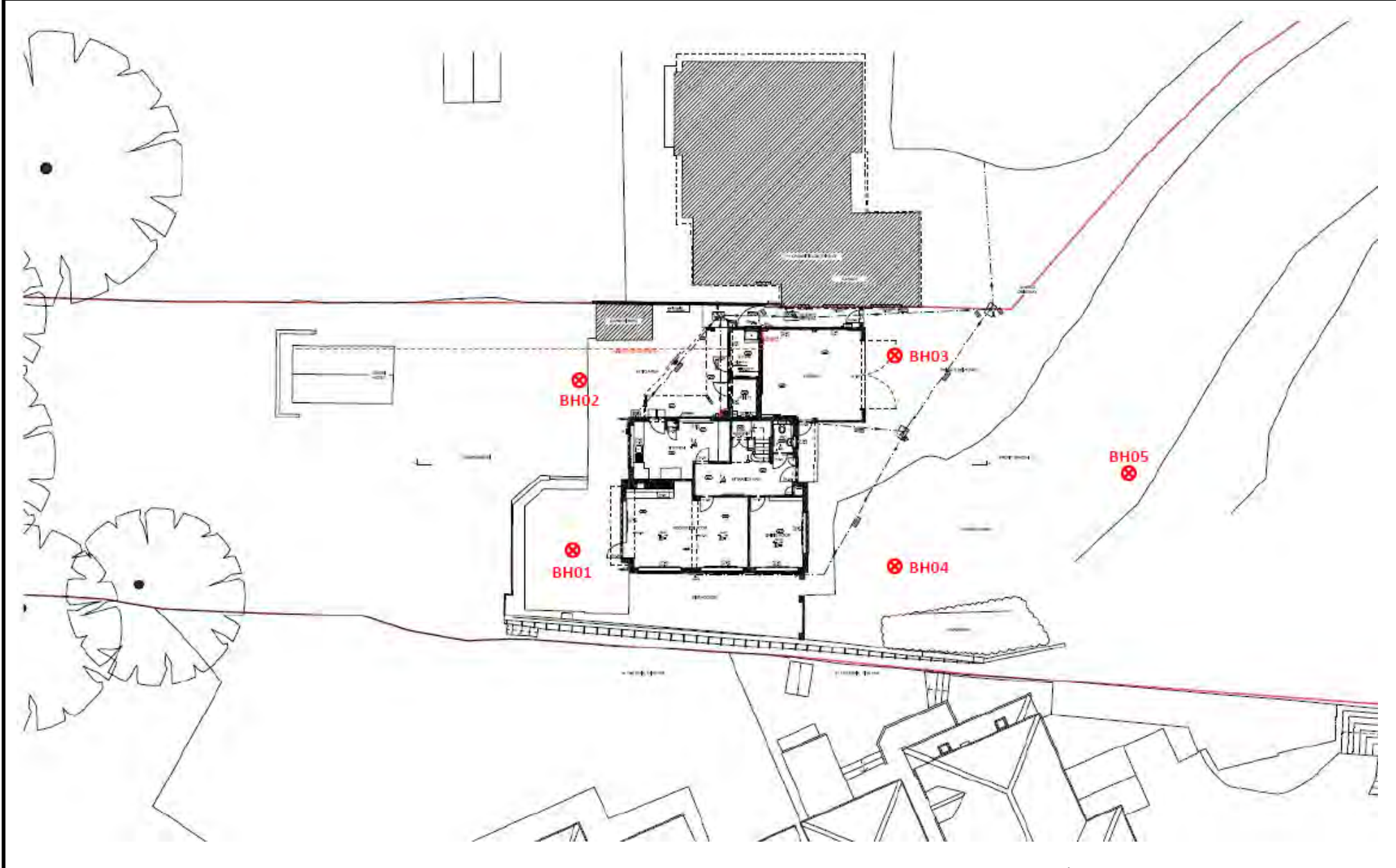
JOB NO: 5292

FIGURE TITLE: Existing Site Layout Plan

REV: 01

FIGURE NO: 2


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CONSULTANCY**



SITE: 9 Crownfields, Sevenoaks, Kent, TN13 1EF

SCALE: NTS

JOB NO: 5292

FIGURE TITLE: Exploratory Hole Location Plan

REV: 01

FIGURE NO: 4


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# Appendix B

## Site Photos





Photo 1—View of entry route to the site



Photo 2—View to the north of the site showing the valley and steep slope away from the building



Photo 3—View of the building centrally to the site and retaining wall to the east



Photo 4—View to the south of the site showing the sloped garden



Photo 5—Example of the rig set up at borehole location 5



Photo 6—Example hand dug safety starter pit arisings and cores obtained from drilling



Photo 7—Example view of hand dug safety starter



Photo 8—Example view of borehole with pipe install



Photo 9—Example of SPT arisings



Photo 10—Example of disturbed samples taken



Photo 11—Example backfilled exploratory hole




Photo 12—Example reinstatement of borehole

# Appendix C

## Service Plans

| Enquirer |  |        |              |
|----------|--|--------|--------------|
| Name     | Mr Toby Hill                                   | Phone  | 01892822999  |
| Company  | Sevenoaks Environmental Consultancy Ltd        | Mobile | Not Supplied |
| Address  | 145 Hastings Road Tunbridge Wells Kent TN2 4JU |        |              |
| Email    | t.hill@sevenoaksenvironmental.com              |        |              |

| Enquiry Details      |                       | Site Map  |
|----------------------|-----------------------|---|
| Enquiry type         | Planned Works         |  <p>Please note that the above map only displays the location of the proposed work site and will not display any of the Members' pipes and cables. It is imperative that this area accurately reflects the proposed work site.</p> |
| Work category        | Development Projects  |   |
| Work type            | Commercial/industrial |   |
| Work type buffer*    | 75 metres             |   |
| Start date           | 13/04/2023            |   |
| End date             | 13/04/2023            |   |
| Scheme/Reference     | 5292                  |   |
| Search location      | tn13 1ef              |   |
| Confirmed location   | 552751 154452         |   |
| Site size            | 3290 metres square    |   |
| Site Contact Name    | Rianna                |   |
| Site Phone No.       | 07854918827           |   |
| Description of Works |                       |   |

\* The WORK TYPE BUFFER is a distance added to your search area based on the Work type you have chosen.

| Affected LSBUD members<br>(LSBUD Members who have assets registered on LSBUD within the vicinity of your search area.) |             |                |                |
|--|-------------|----------------|----------------|
| Asset Owner  | Phone/Email | Emergency Only | Status         |
| SGN  | 08009121722 | 0800111999     | Await response |
| UK Power Networks  | 08000565866 | 08000565866    | Await response |

### Status explanation

**Await Response** means that the asset owner will contact you. This is typically by sending the plan response but they may ask for further information before being able to do so, particularly if any payments or authorisations are required.

**Email Additional Info** means that the asset owner needs further information about your works to assess your enquiry before providing a response. Please provide any details you have available including plans, method statements etc. if available.



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This information includes how to provide additional information to the LSBUD Members who request it to provide a response to your enquiry.

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**List of not affected LSBUD members  
 (LSBUD Members who do not have assets registered on the LSBUD service within the vicinity of your search area.)**

|  |  |  |
|--|--|--|
| Angus Energy   | AWE Pipeline   | B & D Energy Limited                           |
| Balfour Beatty Investments Limited                               | BOC Limited (A Member of the Linde Group)                              | Box Broadband                                  |
| BP Exploration Operating Company Limited                         | BPA  | Cadent Gas                                     |
| Cambridgeshire County Council Climate Change and Energy Services | Carrington Gas Pipeline  | CATS Pipeline c/o Wood Group PSN               |
| Cemex  | Centrica Storage Ltd   | CNG Services Ltd                               |
| Concept Solutions People Ltd                                     | ConocoPhillips (UK) Teesside Operator Ltd                              | D.S.Smith                                      |
| Diamond Transmission Corporation                                 | DIO (MOD Abandoned Pipelines)  | DIO (MOD Live Pipelines)                       |
| E.ON UK CHP Limited  | EDF Energy Renewables Ltd  | EirGrid  |
| Eleclink Limited   | Electricity North West Limited   | Energy Assets Networks                         |
| ENI & Himor c/o Penspen Ltd                                      | EnQuest NNS Limited  | EP Langage Limited                             |
| ESP Utilities Group  | ESSAR  | Esso Petroleum Company Limited                 |
| euNetworks Fiber UK Ltd  | EXA Infrastructure   | Exolum Pipeline System                         |
| Fulcrum Electricity Assets Limited                               | Fulcrum Pipelines Limited  | Gamma  |
| Gas Networks Ireland (UK)  | Gateshead Energy Company   | Gigaclear Ltd                                  |
| Harbour Energy   | Heathrow Airport LTD   | Humbly Grove Energy                            |
| IGas Energy  | INEOS FPS Pipelines  | INEOS Manufacturing (Scotland and TSEP)        |
| INOVYN ChlorVinyls Limited                                       | INOVYN Enterprises Limited   | Intergen (Coryton Energy or Spalding Energy)   |
| Jurassic Fibre Ltd   | Last Mile  | Mainline Pipelines Limited                     |
| Manchester Jetline Limited                                       | Manx Cable Company   | Marchwood Power Ltd (Gas Pipeline)             |
| Melbourn Solar Limited   | Moray East Offshore Windfarm   | MUA Group Limited                              |
| National Gas Transmission  | National Grid Electricity Distribution                                 | National Grid Electricity Transmission         |
| Neos Networks  | Northern Gas Networks Limited  | Northumbrian Water Group                       |
| NPower CHP Pipelines   | NTT Global Data Centers EMEA UK Ltd                                    | NYnet Ltd                                      |
| Ogi  | Oikos Storage Limited  | Ørsted   |
| Palm Paper Ltd   | Perenco UK Limited (Purbeck Southampton Pipeline)                      | Petroineos                                     |
| Phillips 66  | Portsmouth Water   | Premier Transmission Ltd (SNIP)                |
| Redundant Pipelines - LPDA                                       | RWE - Great Yarmouth Pipeline (Bacton to Great Yarmouth Power Station) | RWEnpower (Little Barford and South Haven)     |
| SABIC UK Petrochemicals  | SAS Utility Services Ltd   | Scottish and Southern Electricity Networks     |
| Scottish Power Generation  | Seabank Power Ltd  | SES Water                                      |
| Shell  | Shell NOP  | SP Energy Networks                             |
| Squire Energy Networks   | SSE Generation Ltd   | SSE Transmission                               |
| SSE Utility Solutions Limited                                    | Storengy   | Tata Communications (c/o JSM Construction Ltd) |



## Enquiry Confirmation

LSBUD Ref: 29125129

Date of enquiry: 11/04/2023

Time of enquiry: 16:08

|                           |   |                                       |
|---------------------------|---|---------------------------------------|
| Total Colnbrook Pipelines | Total Finaline Pipelines                        | Transmission Capital                  |
| Uniper UK Ltd             | University of Cambridge Granta Backbone Network | Vattenfall                            |
| Veolia ES SELCHP Limited  | Veolia ES Sheffield Ltd                         | Voneus Limited                        |
| VPI Power Limited         | Wales and West Utilities                        | West of Duddon Sands Transmission Ltd |
| Westminster City Council  | Zayo Group UK Ltd c/o JSM Group Ltd             |                                       |

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|----------------------------------|--|---------------|--------------|
| BT                               | <a href="https://www.swns.bt.com/pls/mbe/welcome.home">https://www.swns.bt.com/pls/mbe/welcome.home</a>      | 08000232023   | Not Notified |
| CityFibre                        | <a href="mailto:asset.team@cityfibre.com">asset.team@cityfibre.com</a>                                       | 033 3150 7282 | Not Notified |
| Colt                             | <a href="mailto:plantenquiries@catelecomuk.com">plantenquiries@catelecomuk.com</a>                           | 01227768427   | Not Notified |
| Equans                           | <a href="mailto:nrswa.uk@equans.com">nrswa.uk@equans.com</a>   | 0800 130 3600 | Not Notified |
| GTC                              | <a href="https://pe.gtc-uk.co.uk/PlantEnqMembership">https://pe.gtc-uk.co.uk/PlantEnqMembership</a>          | 01359240363   | Not Notified |
| Lumen Technologies               | <a href="mailto:plantenquiries@instalcom.co.uk">plantenquiries@instalcom.co.uk</a>                           | 02087314613   | Not Notified |
| Mobile Broadband Network Limited | <a href="mailto:mbnl.plant.enquiries@turntown.com">mbnl.plant.enquiries@turntown.com</a>                     | 01212 621 100 | Not Notified |
| Network Rail                     | <a href="mailto:OPBuriedServicesEnquiries@networkrail.co.uk">OPBuriedServicesEnquiries@networkrail.co.uk</a> | 01904523401   | Not Notified |
| Sky UK Limited                   | <a href="mailto:nrswa@sky.uk">nrswa@sky.uk</a>   | 02070323234   | Not Notified |
| Sota                             | <a href="mailto:SOTA.plantenquiries@instalcom.co.uk">SOTA.plantenquiries@instalcom.co.uk</a>                 |               | Not Notified |
| South East Water                 | <a href="mailto:water.maps@southeastwater.co.uk">water.maps@southeastwater.co.uk</a>                         | 0333 000 0059 | Not Notified |
| Thames Water                     | <a href="http://www.digdat.co.uk">http://www.digdat.co.uk</a>  | 08450709145   | Not Notified |
| Utility assets Ltd               | <a href="mailto:assetrecords@utilityassets.co.uk">assetrecords@utilityassets.co.uk</a>                       |               | Not Notified |
| Verizon Business                 | <a href="mailto:osp-team@uk.verizonbusiness.com">osp-team@uk.verizonbusiness.com</a>                         | 01293611736   | Not Notified |
| Virgin Media                     | <a href="http://www.digdat.co.uk">http://www.digdat.co.uk</a>  | 08708883116   | Not Notified |
| Vodafone                         | <a href="mailto:osm.enquiries@atkingglobal.com">osm.enquiries@atkingglobal.com</a>                           | 01454662881   | Not Notified |

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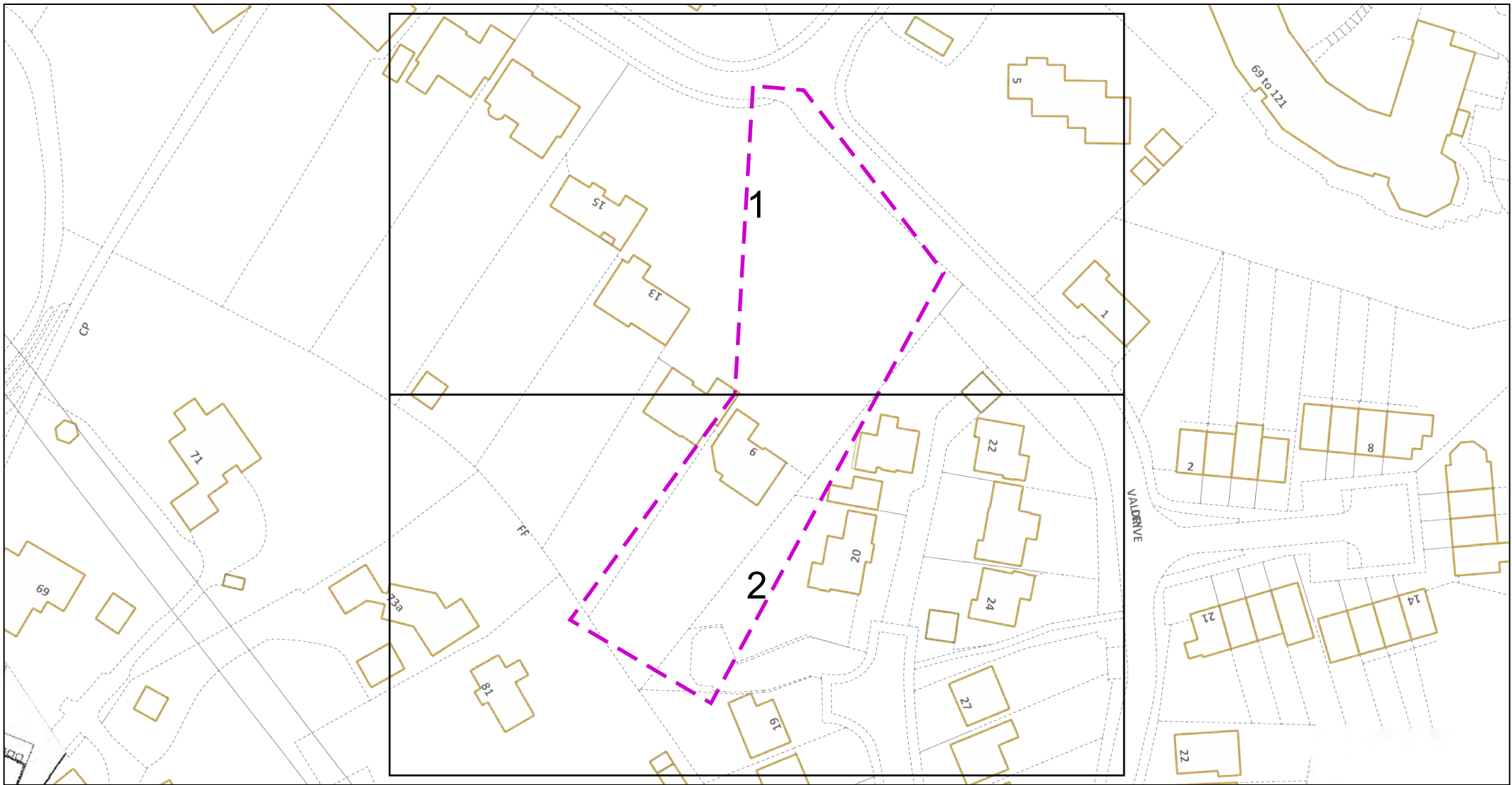
**Buyer Information**

MR D A S JONES  
t.hill@sevenoaksenvironmental.com

# Sales Receipt

11/04/2023

| Description                 | Unit Price    | Qty | Amount |
|-----------------------------|---------------|-----|--------|
| UKPN Plan Request: 29125129 | £41.67        | 1   | £41.67 |
|                             | <b>Tax:</b>   |     | £8.33  |
|                             | <b>Total:</b> |     | £50.00 |



Dig Sites Area:  Line: 

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 11/04/2023  
 Job Reference: 29125129  
 Site Location: 552718 154414  
 Requested by:  
 Mr Toby Hill  
 Your Scheme/Reference: 5292  
 Scale: 1:1025 (When plotted at A4)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all the cables have been determined.
4. It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
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8. Please be aware the Low Voltage Overhead power lines are not currently displayed for the Eastern Region via this service, if you require records on the location of these please contact our Plan Provision team directly via plans@ukpowernetworks.co.uk.

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2. UK Power Networks does not exclude or limit its liability if it causes the death of any persons or causes personal injury to a person.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and must return it to the sender of the letter.
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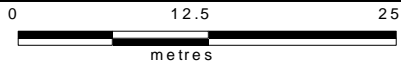
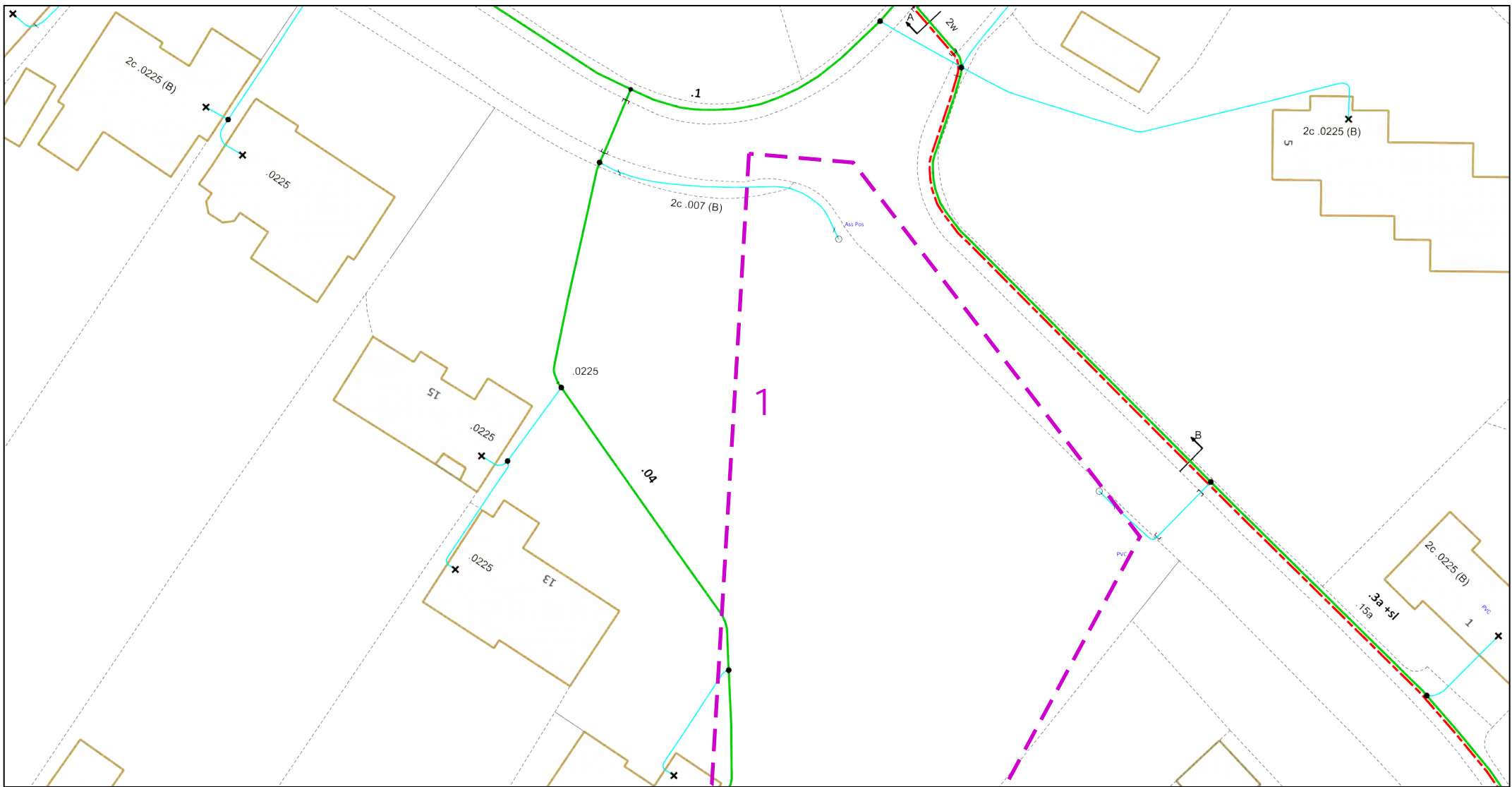


IF IN DOUBT - ASK! PHONE  
 0800 056 5866  
 EMERGENCY - If you damage a  
 cable or line  
 Phone 0800 783 8838 (24hrs)  
 URGENTLY



ALWAYS LOOK UP  
 BEFORE  
 YOU START WORK  
 Refer to HSE Guidance  
 note GS6

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.



Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.  
 Date Requested: 11/04/2023  
 Job Reference: 29125129  
 Site Location: 552718 154414  
 Requested by: Mr Toby Hill  
 Your Scheme/Reference: 5292  
 Scale: 1:500 (When plotted at A4)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
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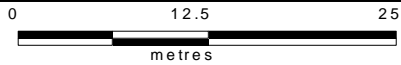
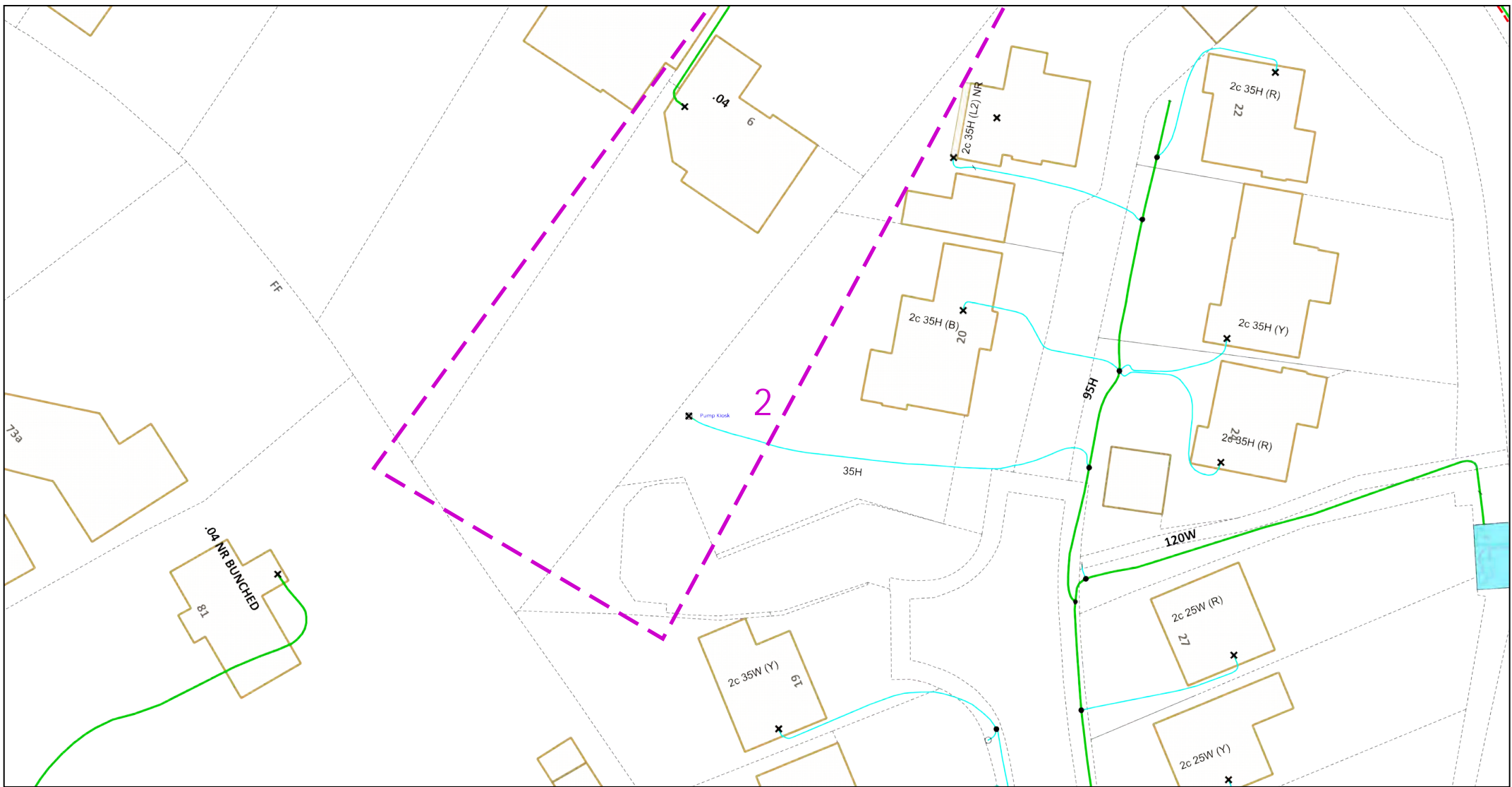


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Dig Sites Area: [dashed magenta box] Line: [dashed magenta line]

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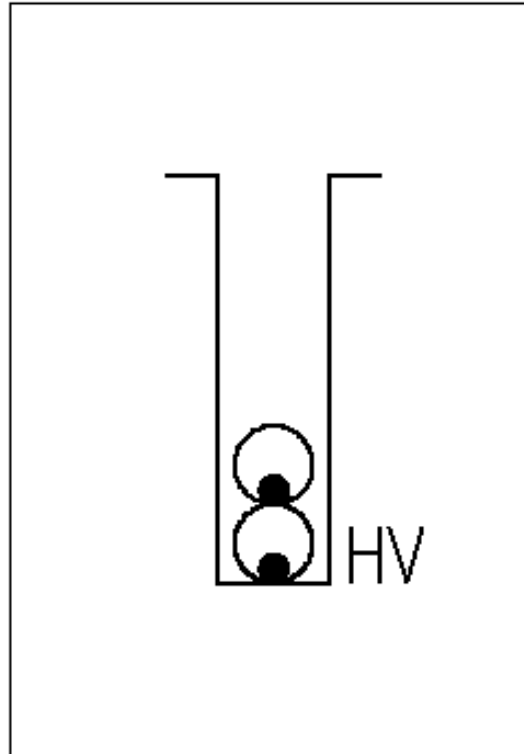
IF IN DOUBT - ASK! PHONE  
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 note GS6

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## Cross Section : A



## Cross Section A

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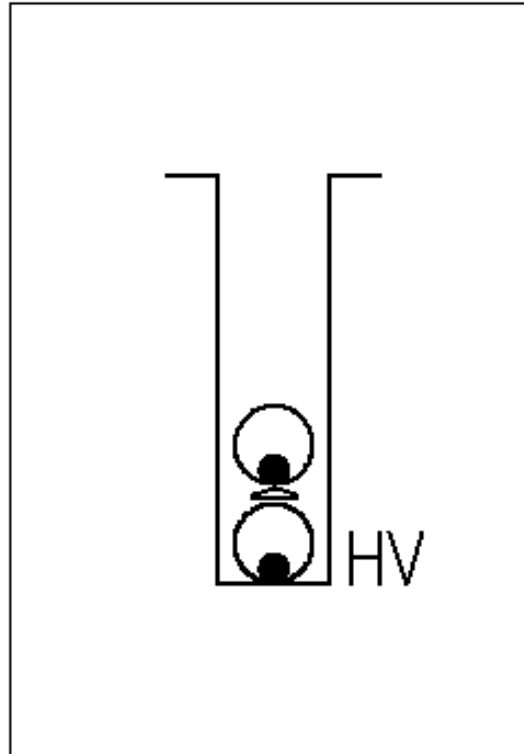
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## Cross Section : B



## Cross Section B

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## UK Power Networks Feedback Tool

Please help UK Power Networks improve the accuracy of their network records and help make it safer for all those working around them in future.

All you need to do is:

1. Use your phone camera to scan the QR code:
2. Provide feedback on what you have found on site (good or bad)
3. Upload a photo if needed

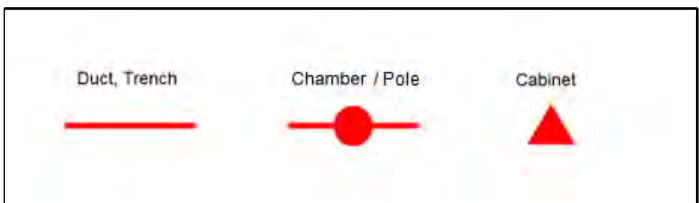


Thank you for making the area a safer place to dig.

**UK Power Networks, working with LSBUD**



(c) Crown copyright and database rights 2023 Ordnance Survey 100019209      Scale: 1:500      Date: 11/04/23      Telecoms Plan A4  
 Data updated: 03/04/23      Map Centre: 552752,154472      Our Ref: 1142029 - 1      Powered by digdat

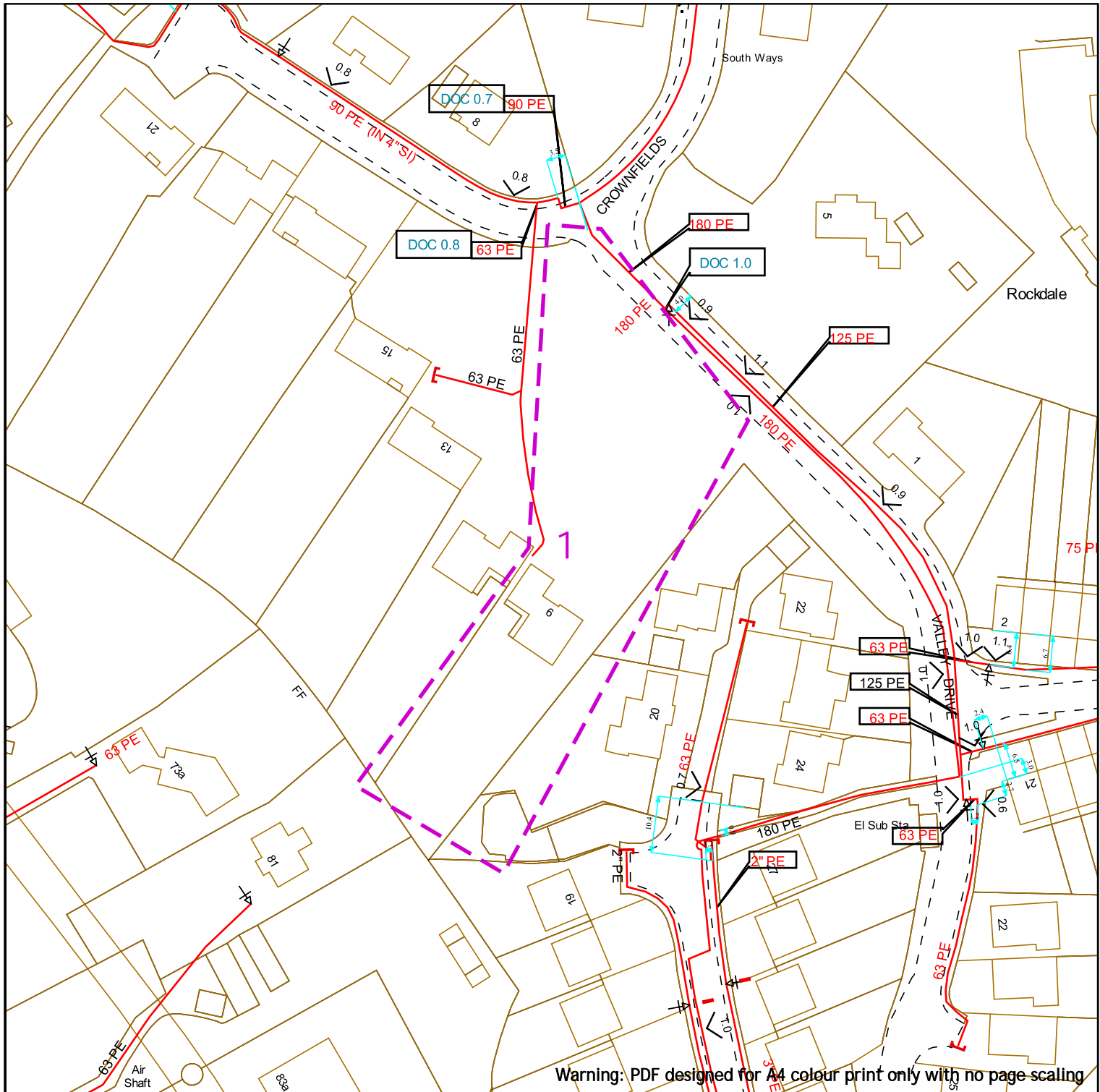


t.hill@sevenoaksenvironmental.com

5292



Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the "Affected Postcodes.pdf", which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2023 Ordnance Survey 100019209.



Warning: PDF designed for A4 colour print only with no page scaling



**Contact Us**  
**SGN Safety Admin Team:**  
 0800 912 1722  
**Email:**  
 plantlocation@sgn.co.uk

|                              |  |                 |  |
|------------------------------|--|-----------------|--|
| Low Pressure Mains           |  | Digsite:        |  |
| Medium Pressure Mains        |  | Line:           |  |
| Intermediate Pressure Mains  |  | Area:           |  |
| High Pressure Mains          |  | LAs             |  |
| Some Examples Of Plant Items |  | GTs             |  |
| Valve                        |  | SSSIs           |  |
| Syphon                       |  | Diameter Change |  |
| Depth of Cover               |  | Material Change |  |

This information is given as a guide only and its accuracy cannot be guaranteed.



This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc. are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Safety Admin Team on 0800 912 1722 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons (whether direct labour or sub-contractors) working for you on or near gas apparatus. Information included on this plan should not be referred to beyond a period of 28 days from the date of issue.

**Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA**  
**0800 111 999**

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Date Requested: 11/04/2023  
 Job Reference: 29125129  
 Site Location: 552751 154452  
 Requested by: Mr Toby Hill  
 Your Scheme/Reference: 5292  
 Scale: 1:1000 (When plotted at A4)

# VAT Receipt



Toby Hill  
Sevenoaks Environmental Consultancy Ltd  
145A  
Hastings Road  
Pembury  
Tunbridge Wells  
TN2 4JU

digdat  
Osprey House  
1 Percy Road  
Huntingdon  
Cambridgeshire  
PE29 6SZ

**CUSTOMER REF** t.hill@sevenoaksenvironmental.com    **VAT RECEIPT NUMBER** DP1063333  
**ORDER REF** 1142029    **TAX POINT** 11 Apr 2023  
**PAYMENT METHOD** Credit/Debit Card

| DESCRIPTION                                 | QTY | UNIT PRICE | VAT CODE | %   | NET VALUE |
|---|-----|------------|----------|-----|-----------|
| Telecoms supplied by Virgin Media (A4 Plan) | x1  | £45.55     | A        | 20% | £45.55    |

| VAT Analysis |                   |        |       |
|--------------|-------------------|--------|-------|
| Code         | VAT %             | NET    | VAT   |
| A            | 20% Standard Rate | £45.55 | £9.11 |

|                     |        |
|---------------------|--------|
| <b>NET VALUE</b>    | £45.55 |
| <b>VAT</b>          | £9.11  |
| <b>TOTAL AMOUNT</b> | £54.66 |

If you have any queries about this service, please contact us on **0800 085 8060** or email [support@digdat.co.uk](mailto:support@digdat.co.uk)  
All prices are subject to change. Prices stated will be honoured for 14 days from the order date shown above.

digdat is a trading name of Anglian Water Services Limited  
Registered Office: Lancaster House, Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire, PE29 6XU  
Company Registration Number: 2366656    VAT Registration Number: 514060002

v703082012

# Appendix D

## Preliminary UXO Desk Study

## Pre-Desk Study Assessment

|   |  |
|---|--|
| <b>Site:</b>  | 9 Crowfields, Sevenoaks, Kent  |
| <b>Client:</b>  | Sevenoaks Environmental Consultancy  |
| <b>Contact:</b>   | Toby Hill  |
| <b>Date:</b>  | 11 <sup>th</sup> April 2023  |
| <b>Pre-WWI Military Activity on or Affecting the Site</b>   | None identified.   |
| <b>WWI Military Activity on or Affecting the Site</b>       | None identified.   |
| <b>WWI Strategic Targets (within 5km of Site)</b>           | The following strategic targets were located in the vicinity of the Site: <ul style="list-style-type: none"> <li>■ Transport infrastructure and public utilities.</li> <li>■ Military camps and training areas.</li> </ul>   |
| <b>WWI Bombing</b>  | None identified on the Site.   |
| <b>Interwar Military Activity on or Affecting the Site</b>  | None identified.   |
| <b>WWII Military Activity on or Affecting the Site</b>      | None identified.   |
| <b>WWII Strategic Targets (within 5km of Site)</b>          | The following strategic targets were located in the vicinity of the Site: <ul style="list-style-type: none"> <li>■ Transport infrastructure and public utilities.</li> <li>■ Military camps and training areas.</li> <li>■ Anti-Aircraft (AA) defences.</li> </ul>   |
| <b>WWII Bombing Decoys (within 5km of Site)</b>             | None.  |
| <b>WWII Bombing</b>   | During WWII, the Site was located in the Urban District (UD) of Sevenoaks which officially recorded 109No. High Explosive (HE) bombs, with a bombing density of 29.3 bombs per 405 hectares (ha).<br><br>Readily available records have been found to indicate that several HE bombs fell in close proximity to the Site.  |
| <b>Post-WWII Military Activity on or Affecting the Site</b> | None identified.   |
| <b>Recommendation</b>                                       | It is recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.  |
| <b>Further information</b>                                  | For information about Zetica’s detailed UXO desk studies and other UXO services, please visit our website: <a href="http://www.zeticauxo.com">www.zeticauxo.com</a> .<br><br>Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found <a href="#">here</a> .<br><br>If you have any further queries, please don’t hesitate to get in contact with us at <a href="mailto:uxo@zetica.com">uxo@zetica.com</a> or 01993 886 682. |

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

























It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

# Appendix E

## Exploratory Hole Records

## BOREHOLE LOG

|   |                         |                  |                 |                                       |  |
|---|-------------------------|------------------|-----------------|---------------------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No</b><br><br><b>WS01</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () | <b>Sheet</b><br><br><b>1 of 2</b>     |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 |                                       |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA   |  | Geology | Instrument/Backfill   |
|-----------------|---------|-------------|-------|---------------|---|-------------------|--|--|---------|---|
| Depth           | Type No | Test Result |       |               |   |                   | DESCRIPTION  |  |         |   |
| 0.15            | D       |             |       |               |    | (0.30)            | MADE GROUND: Loose light brown slightly gravelly Sand. Sand is medium. Gravels comprise rare fine to coarse subangular to angular flint and clinker.   |  |         |    |
| 0.35            | D       |             |       |               |    | 0.30              | MADE GROUND: Loose black sandy Gravel. Sand is medium. Gravels comprise frequent fine to coarse angular flint and clinker.   |  |         |    |
| 0.50            | D       |             |       |               |    | 0.40              | MADE GROUND: Firm light brown gravelly Clay. Gravels comprise frequent fine to coarse subangular to angular brick and flint fragments.   |  |         |    |
| 1.00            | D       |             |       |               |    |                   | @ 1.4m bgl becomes with rare angular cobbles of brick<br>@ 1.6m bgl became without cobbles of brick<br>@ 1.8m-2.0m bgl becomes brown mottled black Clay<br>@ 2.3m-2.5m bgl becomes brown mottled black Clay<br>@ 2.5m bgl becomes with rare angular cobbles of brick |  |         |    |
| 1.20            | SPT     | 8           |       |               |   |                   |  |  |         |   |
| 1.50            | D       |             |       |               |  | (2.20)            |  |  |         |  |
| 2.00            | D       |             |       |               |  |                   |  |  |         |  |
| 2.00            | SPT     | 9           |       |               |  |                   |  |  |         |  |
| 2.50            | D       |             |       |               |  | 2.60              | Firm brown slightly gravelly CLAY. Gravels comprise rare fine to coarse subangular to angular flint fragments.   |  |         |  |
| 3.00            | D       |             |       |               |  |                   | @ 3.0m bgl becomes very stiff<br>@ 4.3m-4.4m bgl becomes with a band of cobbles of subangular to angular flint   |  |         |  |
| 3.00            | SPT     | 8           |       |               |  |                   | Borehole completed at 5.45m bgl.   |  |         |  |
| 3.50            | D       |             |       |               |  |                   |  |  |         |  |

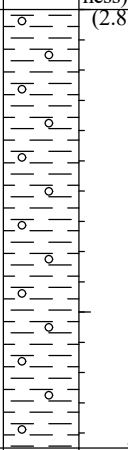
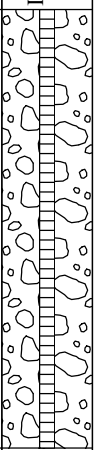
Report ID: AGS4 UK.BH || Project: 5292 9 CROWNFIELDS.GPJ || Library: GINT STD AGS 4.0.GLB || Date: 28 April 2023

| Boring Progress and Water Observations |      |      |                             |                |             | Chiselling  |    |       | Water Added            |    | GENERAL REMARKS            |
|--|------|------|-----------------------------|----------------|-------------|---|----|-------|------------------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth                | Casing Dia. mm | Water Depth | From  | To | Hours | From                   | To |                            |
|  |      |      |                             |                |             |   |    |       |                        |    | No groundwater encountered |
| All dimensions in metres<br>Scale 1:25 |      |      | Client <b>Ben Blackburn</b> |                |             | Method/ Hand Digging Tools + CDS<br>Plant Used <b>Rig</b> |    |       | Logged By<br><b>RC</b> |    |                            |



## BOREHOLE LOG

|   |                         |                  |                 |                                  |  |
|---|-------------------------|------------------|-----------------|----------------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No<br/><br/>WS01</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () |                                  |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 | Sheet<br><b>2 of 2</b>           |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA  |  | Geology | Instrument/Backfill   |
|-----------------|---------|-------------|-------|---------------|---|-------------------|---|--|---------|---|
| Depth           | Type No | Test Result |       |               |   |                   | DESCRIPTION   |  |         |   |
| 4.00            | D       | 21          |       |               |  | (2.85)            | Firm brown slightly gravelly CLAY. Gravels comprise rare fine to coarse subangular to angular flint fragments.<br><br>@ 3.0m bgl becomes very stiff<br><br>@ 4.3m-4.4m bgl becomes with a band of cobbles of subangular to angular flint<br><br>Borehole completed at 5.45m bgl. <i>(continued)</i> |  |         |  |
| 4.00            | SPT     |             |       |               |   |                   |   |  |         |   |
| 4.30            | D       |             |       |               |   |                   |   |  |         |   |
| 4.70            | D       | 31          |       |               |   | 5.45              |   |  |         |   |
| 5.00            | SPT     |             |       |               |   |                   |   |  |         |   |


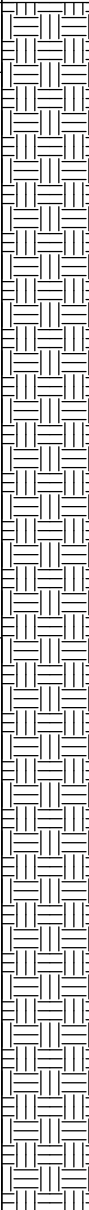
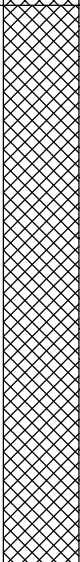









Report ID: AGS4 UK.BH || Project: 5292 9 CROWNFIELDS.GPJ || Library: GINT STD AGS 4.0.GLB || Date: 28 April 2023

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |
|  |      |      |              |                |             |            |    |       |             |    |                            |

|  |                             |  |                     |
|--|-----------------------------|--|---------------------|
| All dimensions in metres<br>Scale 1:25 | Client <b>Ben Blackburn</b> | Method/ Plant Used <b>Hand Digging Tools + CDS Rig</b> | Logged By <b>RC</b> |
|--|-----------------------------|--|---------------------|

## BOREHOLE LOG

|   |                         |                  |                 |                                       |  |
|---|-------------------------|------------------|-----------------|---------------------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No</b><br><br><b>WS02</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () | <b>Sheet</b><br><br><b>1 of 2</b>     |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 |                                       |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA  |  | Geology | Instrument/Backfill  |
|-----------------|---------|-------------|-------|---------------|---|-------------------|---|--|---------|--|
| Depth           | Type No | Test Result |       |               |   |                   | DESCRIPTION   |  |         |  |
| 0.10            | D       |             |       |               |    | (0.23)<br>0.23    | MADE GROUND: Loose brown slightly clayey Sand with frequent fine rootlets (Topsoil). Sand is medium.  |  |         |  |
| 0.50            | D       |             |       |               |   | (1.87)            | MADE GROUND: Firm greyish brown slightly sandy gravelly Clay. Sand is medium to coarse. Gravels comprise frequent fine to cobble sized brick and flint fragments.<br><br>@ 1.2m bgl becomes stiff<br><br>@ 1.5m bgl becomes mottled black   |  |         |  |
| 1.00            | D       |             |       |               |  | (2.10)            | Stiff orangish brown slightly gravelly CLAY. Gravels comprise occasional fine to coarse flint and sandstone fragments.<br><br>@ 3.0m bgl becomes firm<br><br>@ 4.0m bgl becomes very stiff<br><br>@ 4.1m bgl becomes very gravelly with medium to coarse subangular sandstone fragments and without flint |  |         |  |
| 1.20            | SPT     | 9           |       |               |  |                   |   |  |         |  |
| 1.50            | D       |             |       |               |  |                   |   |  |         |  |
| 2.00            | D       |             |       |               |  |                   |   |  |         |  |
| 2.00            | SPT     | 12          |       |               |  |                   |   |  |         |  |
| 2.50            | D       |             |       |               |  |                   |   |  |         |  |
| 3.00            | D       |             |       |               |  |                   |   |  |         |  |
| 3.00            | SPT     | 8           |       |               |  | (2.50)            |   |  |         |  |
| 3.50            | D       |             |       |               |  |                   |   |  |         |  |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

 All dimensions in metres  
Scale 1:25

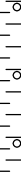
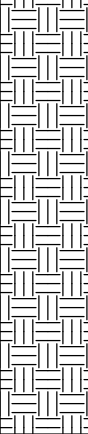
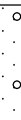
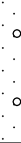
 Client **Ben Blackburn**

 Method/ Plant Used **Hand Digging Tools + CDS Rig**

 Logged By **RC**

## BOREHOLE LOG

|  |                  |                  |                 |                                       |  |
|--|------------------|------------------|-----------------|---------------------------------------|--|
| Project<br>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF |                  |                  |                 | <b>BOREHOLE No</b><br><br><b>WS02</b> |  |
| Job No<br>5292   | Date<br>13-04-23 | Ground Level (m) | Co-Ordinates () |                                       |  |
| Contractor<br>Sevenoaks Environmental Consultancy Ltd                |                  |                  |                 | Sheet<br>2 of 2                       |  |

| SAMPLES & TESTS |          |             | Water | Reduced Level | Legend  | Depth (Thickness)  | STRATA   |  | Geology | Instrument/Backfill   |
|-----------------|----------|-------------|-------|---------------|---|--------------------|--|--|---------|---|
| Depth           | Type No  | Test Result |       |               |   |                    | DESCRIPTION  |  |         |   |
| 4.00<br>4.00    | D<br>SPT | 21          |       |               |  |                    |  |  |         |  |
| 4.50            | D        |             |       |               |  | 4.60               | Dense orangeish gravelly SAND. Sand is medium to coarse. Gravels comprise frequent fine to coarse angular sandstone fragments. |  |         |   |
| 5.00<br>5.00    | D<br>SPT | 47          |       |               |  | (0.85)<br><br>5.45 | Borehole completed at 5.45m bgl.   |  |         |   |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

 All dimensions in metres  
Scale 1:25

 Client **Ben Blackburn**

 Method/ Plant Used **Hand Digging Tools + CDS Rig**

 Logged By **RC**

## BOREHOLE LOG

|   |                         |                  |                 |                                       |  |
|---|-------------------------|------------------|-----------------|---------------------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No</b><br><br><b>WS03</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () | <b>Sheet</b><br><br><b>1 of 2</b>     |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 |                                       |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend | Depth (Thickness) | STRATA  |  | Geology | Instrument/Backfill |
|-----------------|---------|-------------|-------|---------------|--------|-------------------|---|--|---------|---------------------|
| Depth           | Type No | Test Result |       |               |        |                   | DESCRIPTION   |  |         |                     |
| 0.02            | D       |             |       |               |        | 0.04              | MADE GROUND: Tarmac.  |  |         |                     |
| 0.20            | D       |             |       |               |        | (0.51)            | MADE GROUND: Dense light grey sandy Gravel (Type 1 MOT). Sand is medium. Gravels comprise frequent fine to coarse subangular to angular flint fragments.<br><br>@ 0.15m bgl becomes light brown and with coarse subangular brick fragments  |  |         |                     |
| 0.50            | D       |             |       |               |        | 0.55              | MADE GROUND: Soft brown gravelly Clay. Gravels comprise frequent fine to coarse subangular to angular brick and clinker fragments.<br><br>@ 0.9m-1.0m bgl becomes mottled black<br><br>@ 1.4m bgl gravels become rare and without brick   |  |         |                     |
| 0.70            | D       |             |       |               |        |                   |   |  |         |                     |
| 1.00            | D       |             |       |               |        |                   |   |  |         |                     |
| 1.20            | SPT     | 2           |       |               |        | (1.25)            |   |  |         |                     |
| 1.50            | D       |             |       |               |        |                   |   |  |         |                     |
| 2.00            | D       |             |       |               |        | 1.80              | MADE GROUND: Soft green mottled black slightly gravelly Clay. Gravels comprise rare fine to medium subangular clinker fragments. Olfactory observations of a slight organic odour were noted.<br><br>@ 2.0m bgl becomes firm<br><br>@ 3.2m-3.3m bgl becomes with a band of fine to coarse subangular brick and flint gravel<br><br>@ 4.0m bgl becomes very stiff<br><br>@ 4.5m-4.6m bgl becomes with a band of subangular to angular flint fragments<br><br>@ 5.0m bgl becomes firm |  |         |                     |
| 2.00            | SPT     | 6           |       |               |        |                   |   |  |         |                     |
| 2.50            | D       |             |       |               |        |                   |   |  |         |                     |
| 3.00            | D       |             |       |               |        |                   |   |  |         |                     |
| 3.00            | SPT     | 12          |       |               |        |                   |   |  |         |                     |
| 3.50            | D       |             |       |               |        | (3.65)            | Borehole completed at 5.45m bgl.  |  |         |                     |

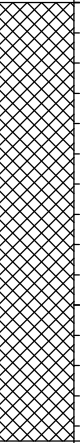
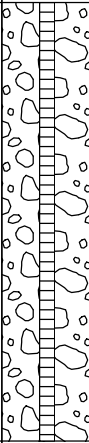
Report ID: AGS4 UK.BH || Project: 5292 9 CROWNFIELDS.GPJ || Library: GINT STD AGS 4.0.GLB || Date: 28 April 2023

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

|  |                             |   |                        |
|--|-----------------------------|---|------------------------|
| All dimensions in metres<br>Scale 1:25 | Client <b>Ben Blackburn</b> | Method/ Plant Used<br><b>Hand Digging Tools + CDS Rig</b> | Logged By<br><b>RC</b> |
|--|-----------------------------|---|------------------------|

## BOREHOLE LOG

|   |                         |                  |                 |                             |  |
|---|-------------------------|------------------|-----------------|-----------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No<br/>WS03</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () |                             |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 | Sheet<br><b>2 of 2</b>      |  |

| SAMPLES & TESTS |          |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA  |  | Geology   | Instrument/Backfill |
|-----------------|----------|-------------|-------|---------------|---|-------------------|---|--|---|---------------------|
| Depth           | Type No  | Test Result |       |               |   |                   | DESCRIPTION   |  |   |                     |
| 4.00<br>4.00    | D<br>SPT | 5           |       |               |  |                   | MADE GROUND: Soft green mottled black slightly gravelly Clay. Gravels comprise rare fine to medium subangular clinker fragments. Olfactory observations of a slight organic odour were noted. |  |  |                     |
| 4.50            | D        |             |       |               |   |                   | @ 2.0m bgl becomes firm<br>@ 3.2m-3.3m bgl becomes with a band of fine to coarse subangular brick and flint gravel<br>@ 4.0m bgl becomes very stiff   |  |   |                     |
| 5.00<br>5.00    | D<br>SPT | 20          |       |               |   |                   | @ 4.5m-4.6m bgl becomes with a band of subangular to angular flint fragments<br>@ 5.0m bgl becomes firm   |  |   |                     |
|                 |          |             |       |               |   | 5.45              | Borehole completed at 5.45m bgl. <i>(continued)</i>   |  |   |                     |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

 All dimensions in metres  
Scale 1:25


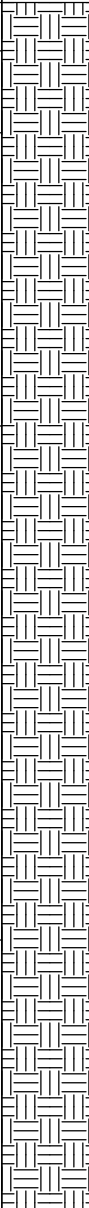










 Client **Ben Blackburn**

 Method/ Hand Digging Tools + CDS  
Plant Used **Rig**

 Logged By  
**RC**

## BOREHOLE LOG

|   |                         |                  |                 |                             |  |
|---|-------------------------|------------------|-----------------|-----------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No<br/>WS04</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () |                             |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 | Sheet<br><b>1 of 2</b>      |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA  |  | Geology | Instrument/Backfill  |
|-----------------|---------|-------------|-------|---------------|---|-------------------|---|--|---------|--|
| Depth           | Type No | Test Result |       |               |   |                   | DESCRIPTION   |  |         |  |
| 0.10            | D       |             |       |               |    | 0.16              | MADE GROUND: Very loose dark brown slightly clayey Sand with frequent fine rootlets (Topsoil). Sand is medium.  |  |         |  |
| 0.30            | D       |             |       |               |    | (0.27)<br>0.43    | MADE GROUND: Very loose yellow Sand with rare fine rootlets. Sand is medium to coarse.  |  |         |  |
| 1.00            | D       |             |       |               |    | (0.97)            | MADE GROUND: Soft light brown/yellow slightly gravelly sandy Clay. Sand is medium to coarse. Gravels comprise occasional fine to coarse subangular to angular brick and sandstone.<br><br>@ 0.8m bgl becomes slightly clayey Sand   |  |         |  |
| 1.20            | SPT     | 3           |       |               |    | 1.40              |   |  |         |  |
| 1.50            | D       |             |       |               |    |                   | Firm grey mottled orange slightly gravelly CLAY. Gravels comprise frequent fine to coarse subrounded to angular flint and sandstone fragments.<br><br>@ 2.8m-3.1m becomes mottled black and very gravelly. Gravels comprise frequent fine to cobble sized angular brick fragments and with wood chippings. An olfactory observation of decomposition of wood chippings was noted within this layer. |  |         |  |
| 2.00            | D       |             |       |               |    | (1.70)            |   |  |         |  |
| 2.00            | SPT     | 6           |       |               |    |                   | @ 3.0m bgl becomes stiff  |  |         |  |
| 2.50            | D       |             |       |               |    |                   |   |  |         |  |
| 3.00            | D       |             |       |               |    | 3.10              |   |  |         |  |
| 3.00            | SPT     | 12          |       |               |   |                   | Stiff reddish brown slightly gravelly CLAY. Gravels comprise occasional fine to coarse subround to subangular sandstone fragments.<br><br>@ 4.0m bgl becomes firm   |  |         |  |
| 3.50            | D       |             |       |               |  |                   |   |  |         |  |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

 All dimensions in metres  
Scale 1:25

 Client **Ben Blackburn**

 Method/ Hand Digging Tools + CDS  
Plant Used **Rig**

 Logged By  
**RC**

## BOREHOLE LOG

|   |                         |                  |                 |                             |  |
|---|-------------------------|------------------|-----------------|-----------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No<br/>WS04</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () |                             |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 | Sheet<br><b>2 of 2</b>      |  |


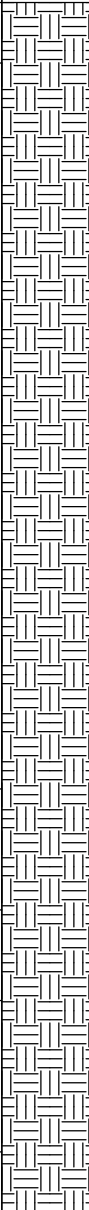












| SAMPLES & TESTS |          |             | Water | Reduced Level | Legend | Depth (Thickness)  | STRATA      |  | Geology   | Instrument/Backfill |
|-----------------|----------|-------------|-------|---------------|--------|--|-------------|--|-----------|---------------------|
| Depth           | Type No  | Test Result |       |               |        |  | DESCRIPTION |  |           |                     |
| 4.00<br>4.00    | D<br>SPT | 5           |       |               | (1.80) | Stiff reddish brown slightly gravelly CLAY. Gravels comprise occasional fine to coarse subround to subangular sandstone fragments.<br><br>@ 4.0m bgl becomes firm ( <i>continued</i> ) |             |  | [Pattern] |                     |
| 4.50            | D        |             |       |               | 4.90   |  |             |  | [Pattern] |                     |
| 5.00<br>5.00    | D<br>SPT | 20          |       |               | (0.55) | Very stiff yellow sandy CLAY. Sand is medium.  |             |  | [Pattern] |                     |
|                 |          |             |       |               | 5.45   |  |             |  | [Pattern] |                     |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

|  |                             |   |                        |
|--|-----------------------------|---|------------------------|
| All dimensions in metres<br>Scale 1:25 | Client <b>Ben Blackburn</b> | Method/ Plant Used<br><b>Hand Digging Tools + CDS Rig</b> | Logged By<br><b>RC</b> |
|--|-----------------------------|---|------------------------|

## BOREHOLE LOG

|   |                         |                  |                 |                             |  |
|---|-------------------------|------------------|-----------------|-----------------------------|--|
| Project<br><b>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF</b> |                         |                  |                 | <b>BOREHOLE No<br/>WS05</b> |  |
| Job No<br><b>5292</b>   | Date<br><b>13-04-23</b> | Ground Level (m) | Co-Ordinates () |                             |  |
| Contractor<br><b>Sevenoaks Environmental Consultancy Ltd</b>                |                         |                  |                 | Sheet<br><b>1 of 2</b>      |  |

| SAMPLES & TESTS |         |             | Water | Reduced Level | Legend  | Depth (Thickness) | STRATA   |  | Geology | Instrument/Backfill  |
|-----------------|---------|-------------|-------|---------------|---|-------------------|--|--|---------|--|
| Depth           | Type No | Test Result |       |               |   |                   | DESCRIPTION  |  |         |  |
| 0.10            | D       |             |       |               |    | (0.20)<br>0.20    | MADE GROUND: Grass over very soft dark brown sandy Clay with frequent fine rootlets (Topsoil).   |  |         |  |
| 0.50            | D       |             |       |               |    |                   | MADE GROUND: Very soft yellow slightly gravelly Sand. Sand is medium to coarse. Gravels comprise occasional fine to coarse subangular to angular sandstone fragments.<br><br>@ 1.4m bgl becomes orangish brown |  |         |  |
| 1.00            | D       |             |       |               |    |                   |  |  |         |  |
| 1.20            | SPT     | 0           |       |               |    | (2.40)            |  |  |         |  |
| 1.50            | D       |             |       |               |    |                   |  |  |         |  |
| 2.00            | D       |             |       |               |    |                   |  |  |         |  |
| 2.00            | SPT     | 1           |       |               |    |                   |  |  |         |  |
| 2.50            | D       |             |       |               |   | 2.60              |  |  |         |  |
| 2.90            | D       |             |       |               |  | (0.40)            | MADE GROUND: Soft black slightly gravelly Clay. Gravels comprise occasional fine to coarse subangular to angular brick and clinker fragments. Olfactory observations of a slight organic odour were noted.     |  |         |  |
| 3.00            | SPT     | 3           |       |               |  | 3.00              |  |  |         |  |
| 3.20            | D       |             |       |               |  | (0.30)<br>3.30    | Very loose brown SAND. Sand is medium to coarse.   |  |         |  |
| 3.50            | D       |             |       |               |  | (0.50)<br>3.80    | Soft dark brown slightly sandy CLAY. Sand is medium to coarse.   |  |         |  |
|                 |         |             |       |               |  | (0.30)            |  |  |         |  |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

 All dimensions in metres  
Scale 1:25

 Client **Ben Blackburn**


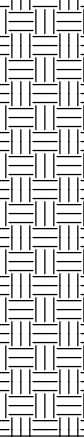

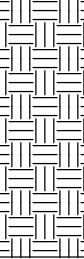
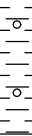
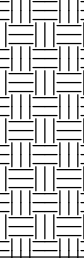
 Method/ Plant Used **Hand Digging Tools + CDS Rig**

 Logged By **RC**



## BOREHOLE LOG

|  |                  |                  |                 |                                       |  |
|--|------------------|------------------|-----------------|---------------------------------------|--|
| Project<br>Geotechnical Site Investigation - 9 Crownfields, TN13 1EF |                  |                  |                 | <b>BOREHOLE No</b><br><br><b>WS05</b> |  |
| Job No<br>5292   | Date<br>13-04-23 | Ground Level (m) | Co-Ordinates () |                                       |  |
| Contractor<br>Sevenoaks Environmental Consultancy Ltd                |                  |                  |                 | Sheet<br>2 of 2                       |  |

| SAMPLES & TESTS |          |             | Water | STRATA  |                            |   | Geology | Instrument/<br>Backfill   |
|-----------------|----------|-------------|-------|---|----------------------------|---|---------|---|
| Depth           | Type No  | Test Result |       | Reduced Level   | Legend                     | Depth (Thickness)   |         |   |
| 4.00<br>4.00    | D<br>SPT | 13          |       |  | 4.10<br><br>(0.50)<br>4.60 | Stiff reddish brown slightly gravelly CLAY. Gravels comprise occasional fine to coarse subangular to angular sandstone fragments. <i>(continued)</i><br>Medium dense orange SAND. |         |  |
| 4.50            | D        |             |       |  |                            | Firm orangish brown slightly gravelly CLAY. Gravels comprise occasional fine to coarse subangular to angular sandstone fragments.   |         |  |
| 5.00<br>5.00    | D<br>SPT | 7           |       |  | (0.85)<br><br>5.45         |   |         |  |

| Boring Progress and Water Observations |      |      |              |                |             | Chiselling |    |       | Water Added |    | GENERAL REMARKS            |
|--|------|------|--------------|----------------|-------------|------------|----|-------|-------------|----|----------------------------|
| Depth                                  | Date | Time | Casing Depth | Casing Dia. mm | Water Depth | From       | To | Hours | From        | To |                            |
|  |      |      |              |                |             |            |    |       |             |    | No groundwater encountered |

|  |                         |  |                 |
|--|-------------------------|--|-----------------|
| All dimensions in metres<br>Scale 1:25 | Client<br>Ben Blackburn | Method/<br>Plant Used<br>Hand Digging Tools + CDS<br>Rig | Logged By<br>RC |
|--|-------------------------|--|-----------------|

Report ID: AGS4 UK BH || Project: 5292 9 CROWNFIELDS.GPJ || Library: GINT STD AGS 4.0.GLB || Date: 28 April 2023

# Appendix F

## In-situ Test Results (SPT Data and Calibration Certificates)



|                               |  |       |
|-------------------------------|--|-------|
| <b>Results</b>                | Windowless Sample SPT/CPT Calibration: | 72.0% |
| Job Number: 5292              |  |       |
| Site: 9 Crownfields, TN13 1EF |  |       |

| Location: BH01 |      | No. of blows |   |            |   |   |   | Penetration (mm) | Total blows (N value) |
|----------------|------|--------------|---|------------|---|---|---|------------------|-----------------------|
| Depth (m bgl)  | Test | Seating      |   | Test Drive |   |   |   |                  |                       |
| 1.2            | SPT  | 1            | 1 | 2          | 2 | 2 | 2 | 8                |                       |
| 2              | SPT  | 3            | 2 | 2          | 3 | 2 | 2 | 9                |                       |
| 3              | SPT  | 2            | 1 | 2          | 2 | 2 | 2 | 8                |                       |
| 4              | SPT  | 5            | 5 | 4          | 4 | 6 | 7 | 21               |                       |
| 5              | SPT  | 4            | 7 | 7          | 7 | 9 | 8 | 31               |                       |

| Location: BH02 |      | No. of blows |   |            |    |    |    | Penetration (mm) | Total blows (N value) |
|----------------|------|--------------|---|------------|----|----|----|------------------|-----------------------|
| Depth (m bgl)  | Test | Seating      |   | Test Drive |    |    |    |                  |                       |
| 1.2            | SPT  | 2            | 2 | 2          | 2  | 2  | 3  | 9                |                       |
| 2              | SPT  | 3            | 2 | 3          | 3  | 2  | 4  | 12               |                       |
| 3              | SPT  | 1            | 1 | 2          | 2  | 1  | 3  | 8                |                       |
| 4              | SPT  | 3            | 2 | 3          | 6  | 6  | 6  | 21               |                       |
| 5              | SPT  | 8            | 8 | 9          | 12 | 15 | 11 | 47               |                       |

| Location: BH03 |      | No. of blows |   |            |   |   |   | Penetration (mm) | Total blows (N value) |
|----------------|------|--------------|---|------------|---|---|---|------------------|-----------------------|
| Depth (m bgl)  | Test | Seating      |   | Test Drive |   |   |   |                  |                       |
| 1.2            | SPT  | 0            | 0 | 0          | 1 | 1 | 0 | 2                |                       |
| 2              | SPT  | 1            | 1 | 2          | 1 | 2 | 1 | 6                |                       |
| 3              | SPT  | 0            | 0 | 1          | 2 | 2 | 2 | 7                |                       |
| 4              | SPT  | 0            | 0 | 6          | 4 | 4 | 3 | 17               |                       |
| 5              | SPT  | 2            | 2 | 2          | 1 | 2 | 2 | 7                |                       |

| Location: BH04 |      | No. of blows |   |            |   |   |   | Penetration (mm) | Total blows (N value) |
|----------------|------|--------------|---|------------|---|---|---|------------------|-----------------------|
| Depth (m bgl)  | Test | Seating      |   | Test Drive |   |   |   |                  |                       |
| 1.2            | SPT  | 1            | 0 | 1          | 1 | 1 | 0 | 3                |                       |
| 2              | SPT  | 1            | 0 | 1          | 1 | 2 | 2 | 6                |                       |
| 3              | SPT  | 2            | 3 | 3          | 3 | 3 | 3 | 12               |                       |
| 4              | SPT  | 1            | 1 | 1          | 1 | 1 | 2 | 5                |                       |
| 5              | SPT  | 6            | 6 | 6          | 4 | 4 | 6 | 20               |                       |

| Location: BH05 |      | No. of blows |   |            |   |   |   | Penetration (mm) | Total blows (N value) |
|----------------|------|--------------|---|------------|---|---|---|------------------|-----------------------|
| Depth (m bgl)  | Test | Seating      |   | Test Drive |   |   |   |                  |                       |
| 1.2            | SPT  | 0            | 0 | 0          | 0 | 0 | 0 | 0                |                       |
| 2              | SPT  | 0            | 0 | 0          | 1 | 0 | 0 | 1                |                       |
| 3              | SPT  | 0            | 0 | 1          | 0 | 1 | 1 | 3                |                       |
| 4              | SPT  | 3            | 4 | 4          | 3 | 3 | 3 | 13               |                       |
| 5              | SPT  | 0            | 0 | 0          | 2 | 3 | 2 | 7                |                       |

# 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: DART311  
Test Date: 16/02/2023  
Report Date: 17/02/2023  
File Name: DART311.spt  
Test Operator: NPB

## Instrumented Rod Data

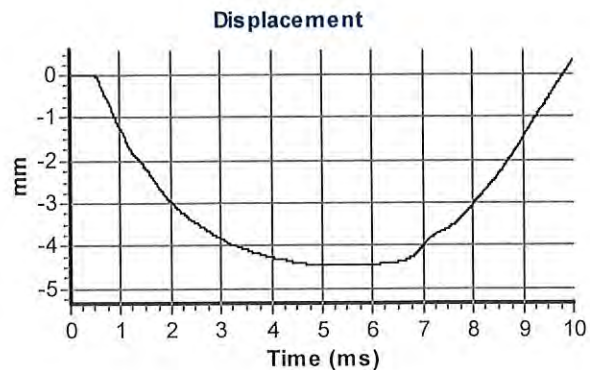
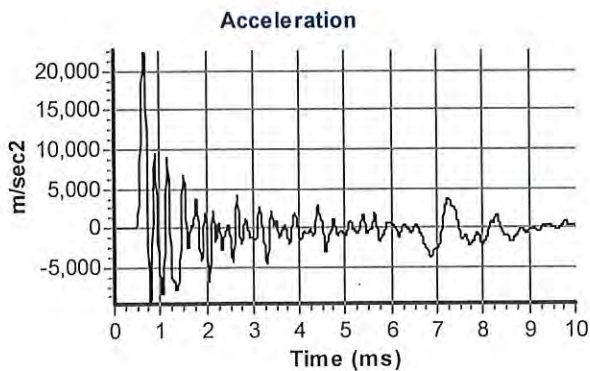
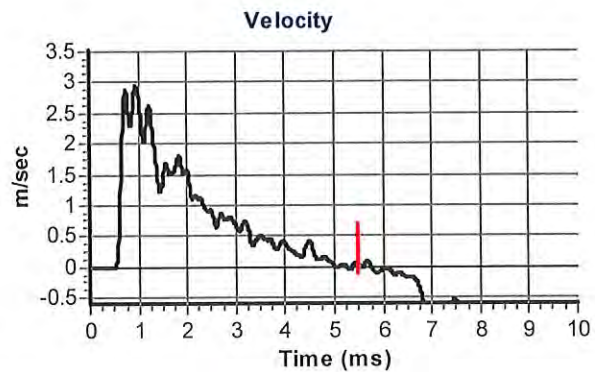
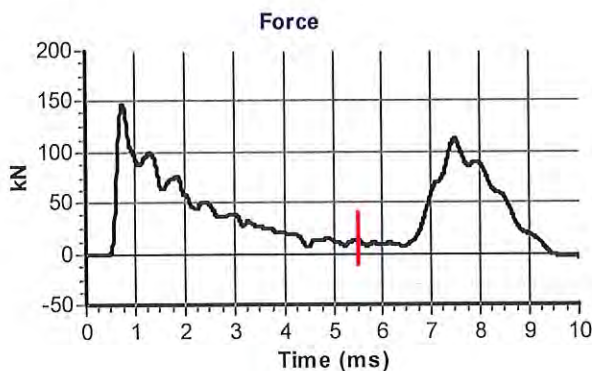
Diameter  $d_r$  (mm): 54  
Wall Thickness  $t_r$  (mm): 6.7  
Assumed Modulus  $E_a$  (GPa): 208  
Accelerometer No.1: 64786  
Accelerometer No.2: 64789

## SPT Hammer Information

Hammer Mass  $m$  (kg): 63.5  
Falling Height  $h$  (mm): 760  
SPT String Length  $L$  (m): 14.7

## Comments / Location

CHARLWOODS



## Calculations

Area of Rod A ( $\text{mm}^2$ ): 996  
Theoretical Energy  $E_{\text{theor}}$  (J): 473  
Measured Energy  $E_{\text{meas}}$  (J): 338

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

Signed: Bob Stewart

Title: Technician

The recommended calibration interval is 12 months

# Appendix G

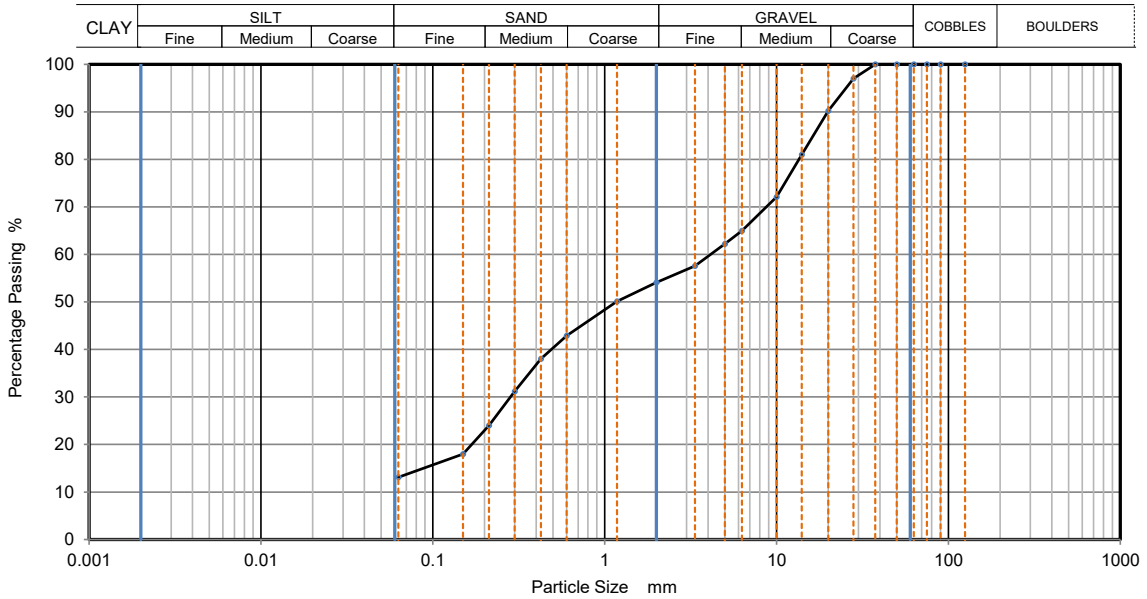
## Geotechnical Laboratory Data



## PARTICLE SIZE DISTRIBUTION

|                  |   |                  |                 |                    |            |
|------------------|---|------------------|-----------------|--------------------|------------|
|                  |   | Job Ref          | 33371           |                    |            |
|                  |   | Borehole/Pit No. | BH02            |                    |            |
| Site Name        | 9 Crownfields   |                  | Sample No.      | -                  |            |
| Project No.      | 5292  | Client           | Sevenoaks       | Depth Top          | 5.00 m     |
| Soil Description | Brown clayey very sandy GRAVEL (gravel is fmc and sub-angular to sub-rounded) |                  |                 | Depth Base         | - m        |
|                  |   |                  |                 | Sample Type        | D          |
|                  |   |                  |                 | Samples received   | 27/04/2023 |
|                  |   |                  |                 | Schedules received | 28/04/2023 |
| Test Method      | BS1377:Part 2: 1990, clause 9.0   |                  | Project started | 02/05/2023         |            |
|                  |   |                  | Date tested     | 09/05/2023         |            |

*These results only apply to the items tested*



| Sieving          |           | Sedimentation    |           |
|------------------|-----------|------------------|-----------|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125              | 100       |                  |           |
| 90               | 100       |                  |           |
| 75               | 100       |                  |           |
| 63               | 100       |                  |           |
| 50               | 100       |                  |           |
| 37.5             | 100       |                  |           |
| 28               | 97        |                  |           |
| 20               | 90        |                  |           |
| 14               | 81        |                  |           |
| 10               | 72        |                  |           |
| 6.3              | 65        |                  |           |
| 5                | 62        |                  |           |
| 3.35             | 58        |                  |           |
| 2                | 54        |                  |           |
| 1.18             | 50        |                  |           |
| 0.6              | 43        |                  |           |
| 0.425            | 38        |                  |           |
| 0.3              | 31        |                  |           |
| 0.212            | 24        |                  |           |
| 0.15             | 18        |                  |           |
| 0.063            | 13        |                  |           |

| Sample Proportions | % dry mass |
|--------------------|------------|
| Very coarse        | 0.0        |
| Gravel             | 45.9       |
| Sand               | 41.0       |
| Fines <0.063mm     | 13.1       |

| Grading Analysis       |    |       |
|------------------------|----|-------|
| D100                   | mm |       |
| D60                    | mm | 4.14  |
| D30                    | mm | 0.284 |
| D10                    | mm |       |
| Uniformity Coefficient |    |       |
| Curvature Coefficient  |    |       |

Remarks  
Preparation and testing in accordance with BS1377 unless noted below

*NOTE: The report shall not be reproduced except in full without approval of the laboratory*



### K4 Soils Laboratory

Unit 8, Olds Close, Watford, Herts, WD18 9RU  
Email: james@k4soils.com  
Tel: 01923 711288

#### Checked and Approved

Initials: J.P  
Date: 15/05/2023

2519

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

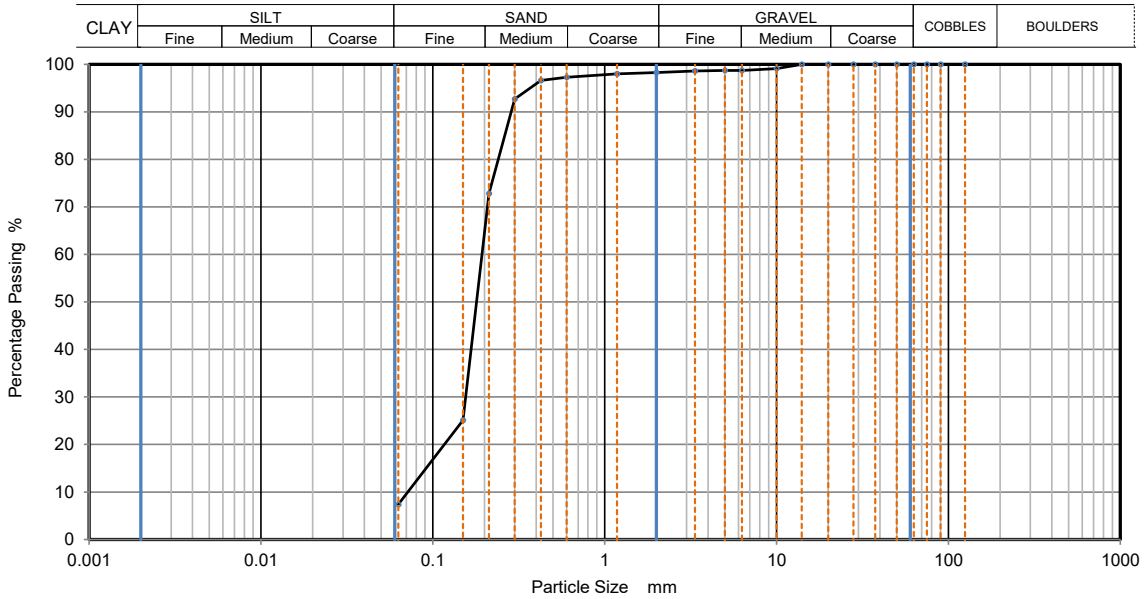
MSF-5-R3



## PARTICLE SIZE DISTRIBUTION

|                  |  |                  |                 |                    |            |
|------------------|--|------------------|-----------------|--------------------|------------|
|                  |  | Job Ref          | 33371           |                    |            |
|                  |  | Borehole/Pit No. | BH05            |                    |            |
| Site Name        | 9 Crownfields  |                  | Sample No.      | -                  |            |
| Project No.      | 5292   | Client           | Sevenoaks       | Depth Top          | 1.50 m     |
| Soil Description | Yellowish brown silty SAND with rare fm sub-angular gravel |                  |                 | Depth Base         | - m        |
|                  |  |                  |                 | Sample Type        | D          |
|                  |  |                  |                 | Samples received   | 27/04/2023 |
|                  |  |                  |                 | Schedules received | 28/04/2023 |
| Test Method      | BS1377:Part 2: 1990, clause 9.0                            |                  | Project started | 02/05/2023         |            |
|                  |  |                  | Date tested     | 11/05/2023         |            |

*These results only apply to the items tested*



| Sieving          |           | Sedimentation    |           |
|------------------|-----------|------------------|-----------|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125              | 100       |                  |           |
| 90               | 100       |                  |           |
| 75               | 100       |                  |           |
| 63               | 100       |                  |           |
| 50               | 100       |                  |           |
| 37.5             | 100       |                  |           |
| 28               | 100       |                  |           |
| 20               | 100       |                  |           |
| 14               | 100       |                  |           |
| 10               | 99        |                  |           |
| 6.3              | 99        |                  |           |
| 5                | 99        |                  |           |
| 3.35             | 99        |                  |           |
| 2                | 98        |                  |           |
| 1.18             | 98        |                  |           |
| 0.6              | 97        |                  |           |
| 0.425            | 97        |                  |           |
| 0.3              | 93        |                  |           |
| 0.212            | 73        |                  |           |
| 0.15             | 25        |                  |           |
| 0.063            | 7         |                  |           |

| Sample Proportions | % dry mass |
|--------------------|------------|
| Very coarse        | 0.0        |
| Gravel             | 1.7        |
| Sand               | 90.9       |
| Fines <0.063mm     | 7.4        |

| Grading Analysis       |    |        |
|------------------------|----|--------|
| D100                   | mm |        |
| D60                    | mm | 0.193  |
| D30                    | mm | 0.155  |
| D10                    | mm | 0.0717 |
| Uniformity Coefficient |    | 2.7    |
| Curvature Coefficient  |    | 1.7    |

Remarks  
Preparation and testing in accordance with BS1377 unless noted below

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|  |   |   |
|--|---|---|
|  | <b>K4 Soils Laboratory</b><br>Unit 8, Olds Close, Watford, Herts, WD18 9RU<br>Email: james@k4soils.com<br>Tel: 01923 711288 | Checked and Approved<br>Initials: J.P<br>Date: 15/05/2023 |
|  | Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)  |   |
|  | 2519  | MSF-5-R3  |

| Hole No.   |  | Sample   |      |   | Soil description | Dry Mass passing 2mm %  | SO4 Content mg/l | pH  | Remarks  |     |
|--|--|--|------|---|------------------|---|------------------|-----|--|-----|
|  |  |  |      |   |                  |   |                  |     |  | Ref |
| BH01   |  | -  | 0.35 | - | D                | Brown sandy clayey GRAVEL with occasional ash particles (gravel is fm and sub-angular)  | 45               | 180 | 7.6  |     |
| BH01   |  | -  | 2.50 | - | D                | Brown and dark grey slightly gravelly slightly sandy slightly organic silty CLAY with occasional brick fragments and occasional rootlets (gravel is fm and sub-rounded) | 85               | 380 | 7.6  |     |
| BH01   |  | -  | 3.50 | - | D                | Orangish brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular)   | 95               | 160 | 7.7  |     |
| BH02   |  | -  | 1.50 | - | D                | Yellowish brown slightly mottled bluish grey slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular to sub-rounded chalk)                            | 85               | 290 | 7.6  |     |
| BH02   |  | -  | 3.00 | - | D                | Brown slightly sandy silty CLAY   | 100              | 200 | 7.7  |     |
| BH03   |  | -  | 1.00 | - | D                | Greenish brown slightly sandy slightly gravelly silty CLAY with occasional fm brick fragments (gravel is fm and sub-angular)  | 75               | 450 | 7.6  |     |
| BH03   |  | -  | 3.50 | - | D                | Dark brown sandy silty CLAY   | 100              | 190 | 7.5  |     |
| BH04   |  | -  | 1.00 | - | D                | Yellowish brown gravelly clayey SAND with fm brick fragments (gravel is fm and sub-angular)   | 82               | 150 | 7.7  |     |
| BH04   |  | -  | 3.00 | - | D                | Dark greyish brown slightly gravelly sandy silty CLAY with fm brick fragments (gravel is fm and sub-angular)  | 80               | 250 | 7.6  |     |
| BH04   |  | -  | 4.50 | - | D                | Brown sandy silty CLAY  | 100              | 180 | 7.7  |     |
| BH05   |  | -  | 4.50 | - | D                | Brown clayey sandy GRAVEL (gravel is fmc and sub-angular)   | 60               | 110 | 7.8  |     |
| <p style="text-align: center;"><b>Test Report by K4 SOILS LABORATORY</b><br/> Unit 8 Olds Close Olds Approach<br/> Watford Herts WD18 9RU<br/> Tel: 01923 711 288<br/> Email: James@k4soils.com</p> <p style="text-align: center;"><small>These results only apply to the items tested</small></p> <p style="text-align: center;"><small>NOTE: The report shall not be reproduced except in full without authority of the laboratory</small></p> |  |  |      |   |                  |   |                  |     | <p style="text-align: center;"><b>Checked and Approved</b></p> <p style="text-align: center;">Initials      J.P</p> <p style="text-align: center;">Date:      15/05/2023</p> |     |
| 2519   |  | Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) |      |   |                  |   |                  |     | MSF-5-R29  |     |



**Sulphate Content (Gravimetric Method) for 2:1 Soil: Water Extract and pH Value - Summary of Results**  
**Tested in accordance with BS1377 : Part 3 : 2018, Clause 7.6 & Clause 12**

|                     |                               |                   |            |
|---------------------|-------------------------------|-------------------|------------|
| Job No.<br>33371    | Project Name<br>9 Crownfields | Programme         |            |
|                     |                               | Samples received  | 27/04/2023 |
|                     |                               | Schedule received | 28/04/2023 |
| Project No.<br>5292 | Client<br>Sevenoaks           | Project started   | 02/05/2023 |
|                     |                               | Testing Started   | 09/05/2023 |

| Hole No. |  | Sample |      |   | Soil description | Dry Mass passing 2mm %  | SO4 Content mg/l | pH  | Remarks |     |
|----------|--|--------|------|---|------------------|---|------------------|-----|---------|-----|
|          |  |        |      |   |                  |   |                  |     |         | Ref |
| BH01     |  | -      | 0.35 | - | D                | Brown sandy clayey GRAVEL with occasional ash particles (gravel is fm and sub-angular)  | 45               | 180 | 7.6     |     |
| BH01     |  | -      | 2.50 | - | D                | Brown and dark grey slightly gravelly slightly sandy slightly organic silty CLAY with occasional brick fragments and occasional rootlets (gravel is fm and sub-rounded) | 85               | 380 | 7.6     |     |
| BH01     |  | -      | 3.50 | - | D                | Orangish brown slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular)   | 95               | 160 | 7.7     |     |
| BH02     |  | -      | 1.50 | - | D                | Yellowish brown slightly mottled bluish grey slightly sandy slightly gravelly silty CLAY (gravel is fm and sub-angular to sub-rounded chalk)                            | 85               | 290 | 7.6     |     |
| BH02     |  | -      | 3.00 | - | D                | Brown slightly sandy silty CLAY   | 100              | 200 | 7.7     |     |
| BH03     |  | -      | 1.00 | - | D                | Greenish brown slightly sandy slightly gravelly silty CLAY with occasional fm brick fragments (gravel is fm and sub-angular)  | 75               | 450 | 7.6     |     |
| BH03     |  | -      | 3.50 | - | D                | Dark brown sandy silty CLAY   | 100              | 190 | 7.5     |     |
| BH04     |  | -      | 1.00 | - | D                | Yellowish brown gravelly clayey SAND with fm brick fragments (gravel is fm and sub-angular)   | 82               | 150 | 7.7     |     |
| BH04     |  | -      | 3.00 | - | D                | Dark greyish brown slightly gravelly sandy silty CLAY with fm brick fragments (gravel is fm and sub-angular)  | 80               | 250 | 7.6     |     |
| BH04     |  | -      | 4.50 | - | D                | Brown sandy silty CLAY  | 100              | 180 | 7.7     |     |
| BH05     |  | -      | 4.50 | - | D                | Brown clayey sandy GRAVEL (gravel is fmc and sub-angular)   | 60               | 110 | 7.8     |     |

|  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|
|  | <p style="text-align: center;"><b>Test Report by K4 SOILS LABORATORY</b><br/> Unit 8 Olds Close Olds Approach<br/> Watford Herts WD18 9RU<br/> Tel: 01923 711 288<br/> Email: James@k4soils.com</p> <p style="text-align: center;"><small>These results only apply to the items tested</small></p> <p style="text-align: center;"><small>NOTE: The report shall not be reproduced except in full without authority of the laboratory</small></p> |  |  |  |  |  |  | <p style="text-align: center;"><b>Checked and Approved</b></p> <p style="text-align: center;">Initials      J.P</p> <p style="text-align: center;">Date:      15/05/2023</p> |
|  | 2519   | Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) |  |  |  |  |  |  |





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

|                     |                               |                   |            |
|---------------------|-------------------------------|-------------------|------------|
| Job No.<br>33371    | Project Name<br>9 Crownfields | Programme         |            |
|                     |                               | Samples received  | 27/04/2023 |
| Project No.<br>5292 | Client<br>Sevenoaks           | Schedule received | 28/04/2023 |
|                     |                               | Project started   | 02/05/2023 |
|                     |                               | Testing Started   | 11/05/2023 |

| Hole No. | Sample |          |           |      | Soil Description   | NMC<br>% | Passing<br>425µm<br>% | LL<br>% | PL<br>% | PI<br>% | Remarks |
|----------|--------|----------|-----------|------|--|----------|-----------------------|---------|---------|---------|---------|
|          | Ref    | Top<br>m | Base<br>m | Type |  |          |                       |         |         |         |         |
| BH01     | -      | 1.50     | -         | D    | Brown, orangish brown and grey slightly gravelly slightly sandy silty CLAY with brick fragments (gravel is fmc and sub-angular to sub-rounded) | 21       | 90                    | 45      | 20      | 25      |         |
| BH01     | -      | 3.00     | -         | D    | Brown, orangish brown and dark orangish brown mottled sandy silty CLAY with rare fm gravel   | 21       |                       |         |         |         |         |
| BH01     | -      | 4.30     | -         | D    | Brown gravelly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)   | 19       | 50                    | 28      | 16      | 12      |         |
| BH02     | -      | 2.50     | -         | D    | Brown and dark brown mottled sandy silty CLAY with rare fm gravel  | 20       |                       |         |         |         |         |
| BH02     | -      | 3.50     | -         | D    | Brown slightly sandy silty CLAY with rare fine gravel  | 20       | 99                    | 36      | 18      | 18      |         |
| BH03     | -      | 2.50     | -         | D    | Grey and light brown mottled slightly gravelly slightly sandy silty CLAY (gravel is fm and sub-angular)  | 35       | 95                    | 54      | 26      | 28      |         |
| BH03     | -      | 4.50     | -         | D    | Light brown and light grey mottled sandy silty CLAY with rare fm gravel  | 26       |                       |         |         |         |         |
| BH04     | -      | 2.00     | -         | D    | Brown and dark brown mottled slightly gravelly sandy silty CLAY with brick fragments (gravel is fmc and sub-angular to sub-rounded)            | 23       | 85                    | 48      | 19      | 29      |         |
| BH04     | -      | 3.50     | -         | D    | Brown sandy silty CLAY with rare fm gravel   | 18       | 98                    | 32      | 17      | 15      |         |
| BH04     | -      | 5.00     | -         | D    | Brown and light brown mottled slightly gravelly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)                                | 21       | 95                    | 33      | 19      | 14      |         |
| BH05     | -      | 3.50     | -         | D    | Brown and orangish brown mottled sandy silty CLAY with rare fm gravel  | 24       | 98                    | 30      | 15      | 15      |         |
| BH05     | -      | 5.00     | -         | D    | Brown slightly gravelly slightly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)   | 27       | 95                    | 43      | 23      | 20      |         |

|  |  |   |   |
|--|--|---|---|
|  | <b>Test Methods: BS1377: Part 2: 1990:</b><br>Natural Moisture Content : clause 3.2<br>Atterberg Limits: clause 4.3 and 5.0<br><i>These results only apply to the items tested</i> | <b>Test Report by K4 SOILS LABORATORY</b><br>Unit 8 Olds Close Olds Approach<br>Watford Herts WD18 9RU<br><br>Tel: 01923 711 288<br>Email: <a href="mailto:James@k4soils.com">James@k4soils.com</a> | <b>Checked and Approved</b><br><br>Initials     J.P<br><br>Date:         15/05/2023 |
|  | NOTE: The report shall not be reproduced except in full without authority of the laboratory  |   | Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)                        |



# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH01

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 1.50

Soil Description Brown, orangish brown and grey slightly gravelly slightly sandy silty CLAY with brick fragments (gravel is fmc and sub-angular to sub-rounded)

Depth Base m -

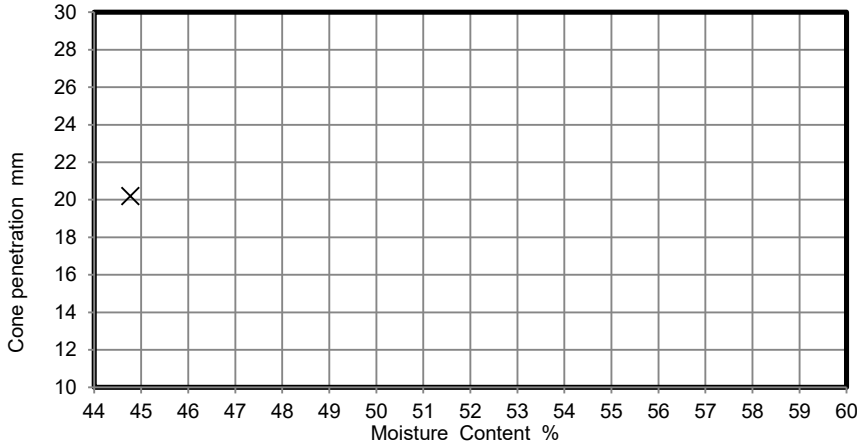
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023



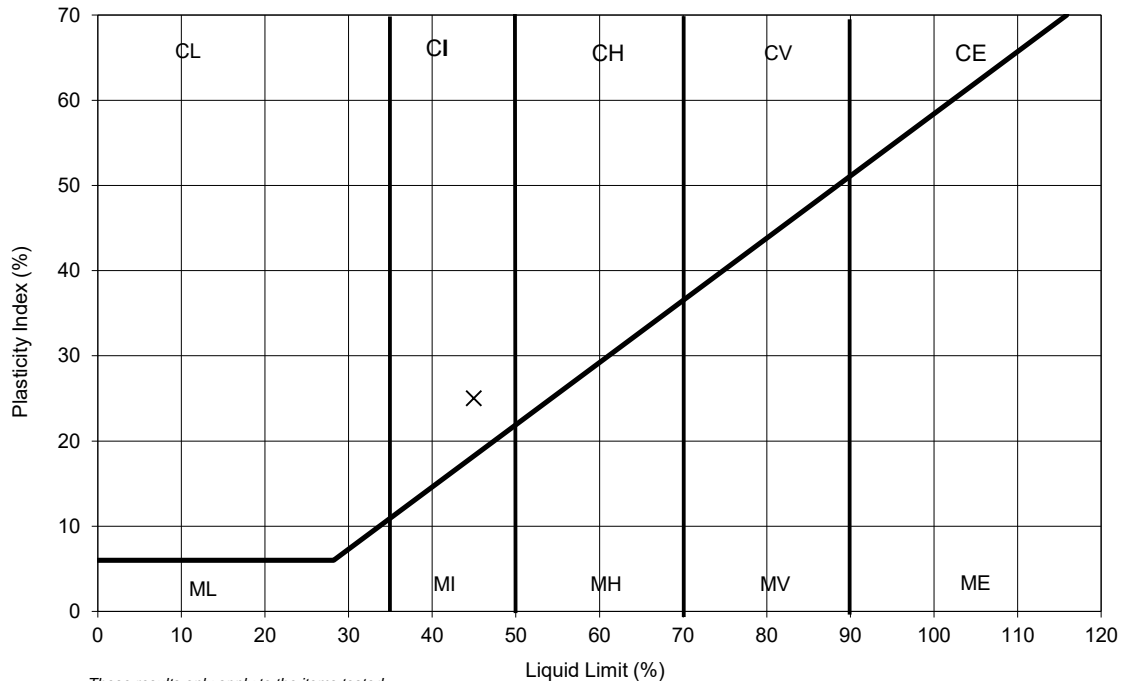
|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 21 | % |
| % PASSING 425µm SIEVE    | 90 | % |
| LIQUID LIMIT             | 45 | % |
| PLASTIC LIMIT            | 20 | % |
| PLASTICITY INDEX         | 25 | % |

### Remarks

Empty box for remarks.

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



These results only apply to the items tested

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#### TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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

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Checked and Approved

Initials: J.P

Date: 15/05/2023



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

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH01

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 4.30

Soil Description Brown gravelly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)

Depth Base m -

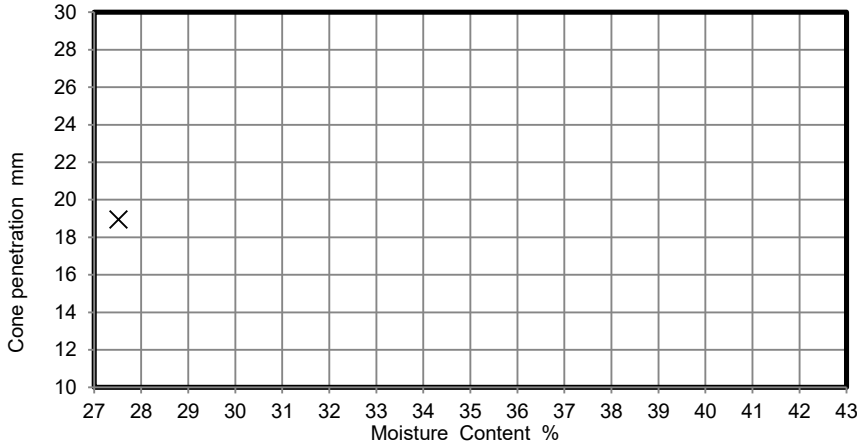
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023



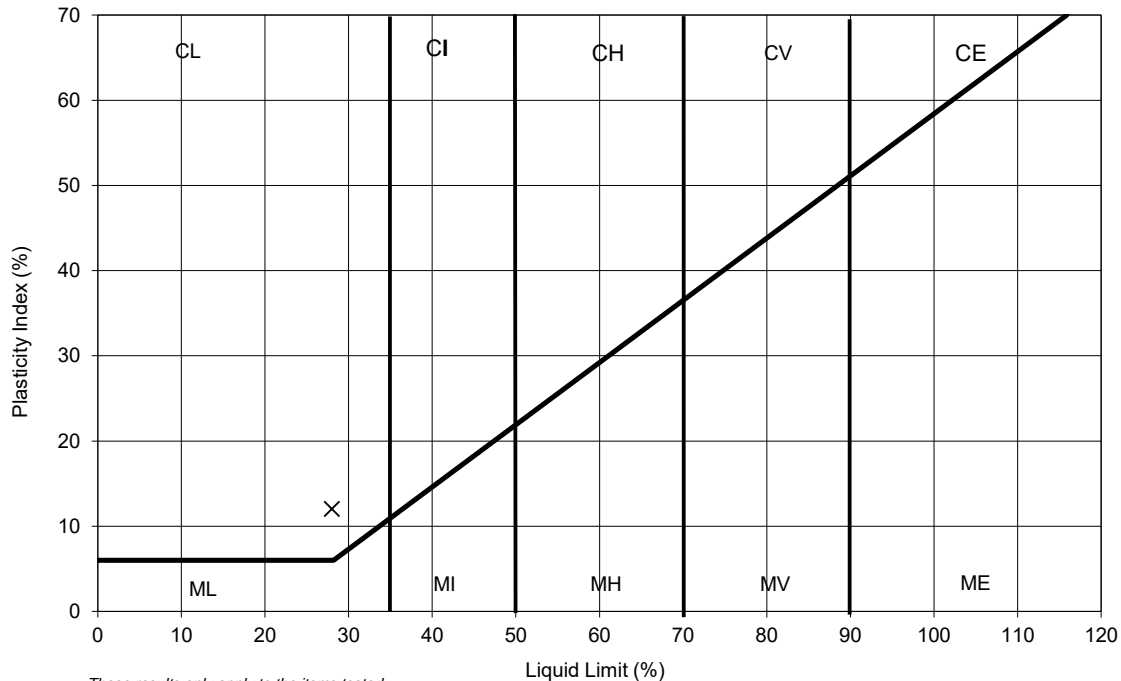
|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 19 | % |
| % PASSING 425µm SIEVE    | 50 | % |
| LIQUID LIMIT             | 28 | % |
| PLASTIC LIMIT            | 16 | % |
| PLASTICITY INDEX         | 12 | % |

### Remarks

Empty box for remarks.

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



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#### TEST METHOD

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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH02

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 3.50

Soil Description Brown slightly sandy silty CLAY with rare fine gravel

Depth Base m -

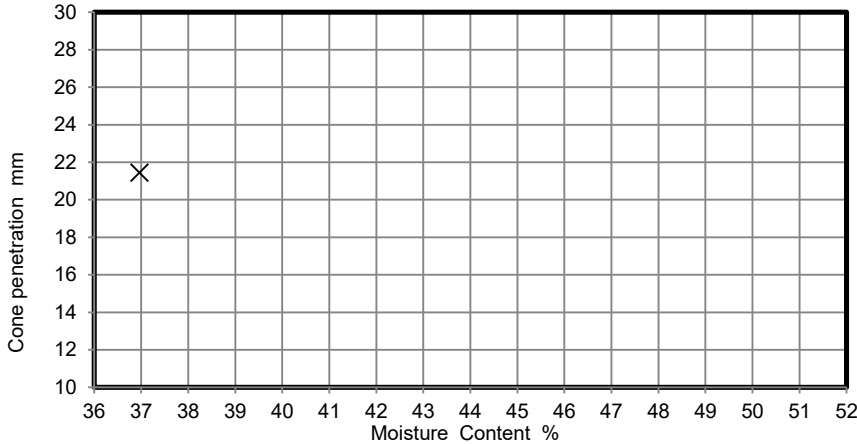
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023

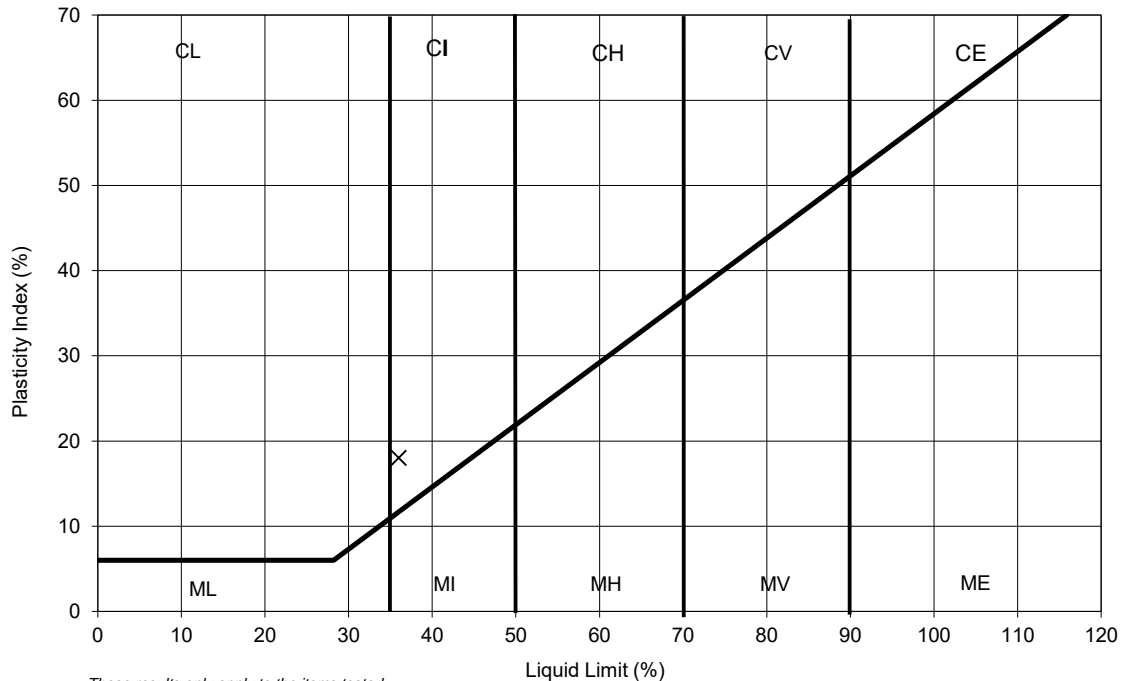


|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 20 | % |
| % PASSING 425µm SIEVE    | 99 | % |
| LIQUID LIMIT             | 36 | % |
| PLASTIC LIMIT            | 18 | % |
| PLASTICITY INDEX         | 18 | % |

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

## PLASTICITY INDEX



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### TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH03

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 2.50

Soil Description Grey and light brown mottled slightly gravelly slightly sandy silty CLAY (gravel is fm and sub-angular)

Depth Base m -

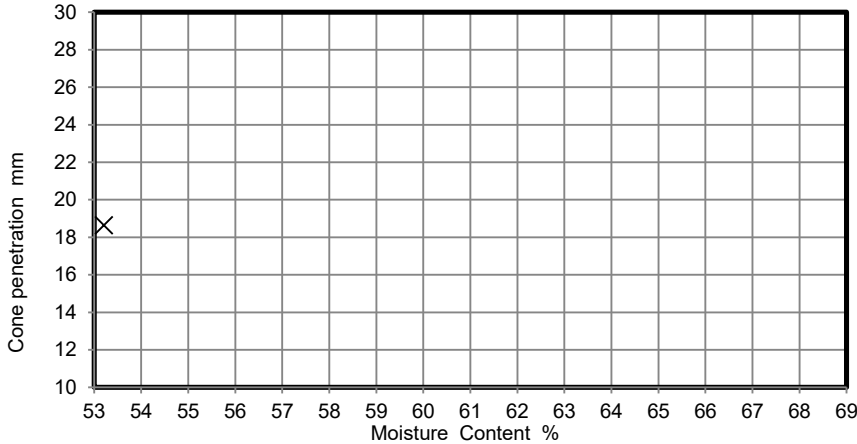
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023

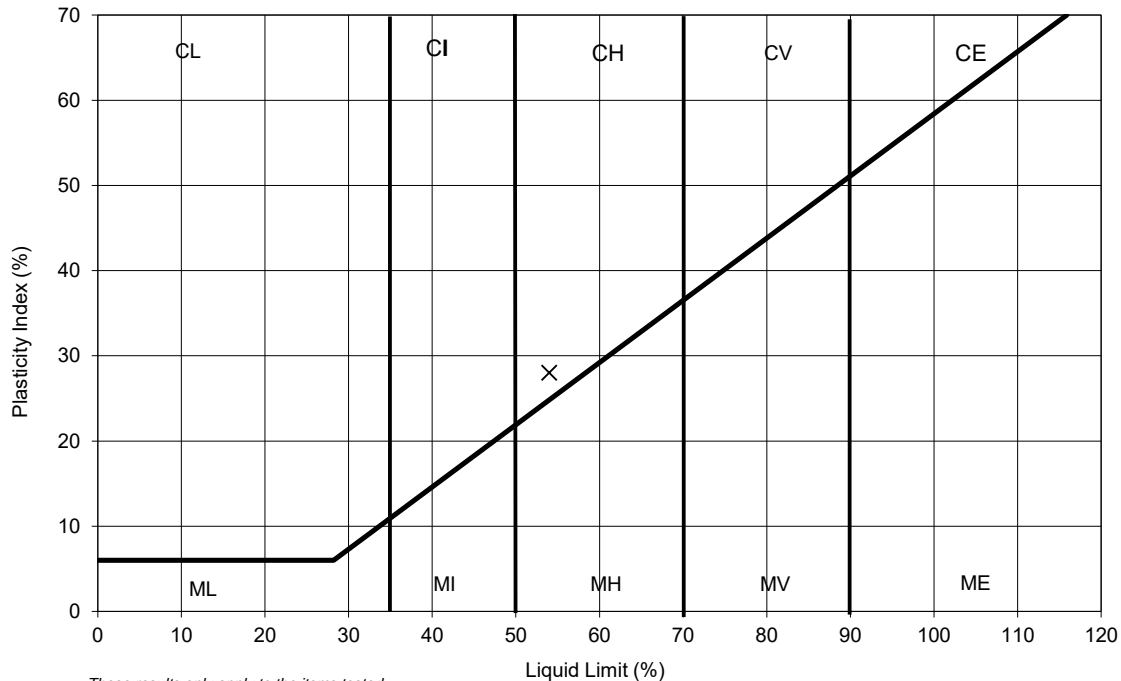


|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 35 | % |
| % PASSING 425µm SIEVE    | 95 | % |
| LIQUID LIMIT             | 54 | % |
| PLASTIC LIMIT            | 26 | % |
| PLASTICITY INDEX         | 28 | % |

### Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



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#### TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH04

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 2.00

Soil Description Brown and dark brown mottled slightly gravelly sandy silty CLAY with brick fragments (gravel is fmc and sub-angular to sub-rounded)

Depth Base m -

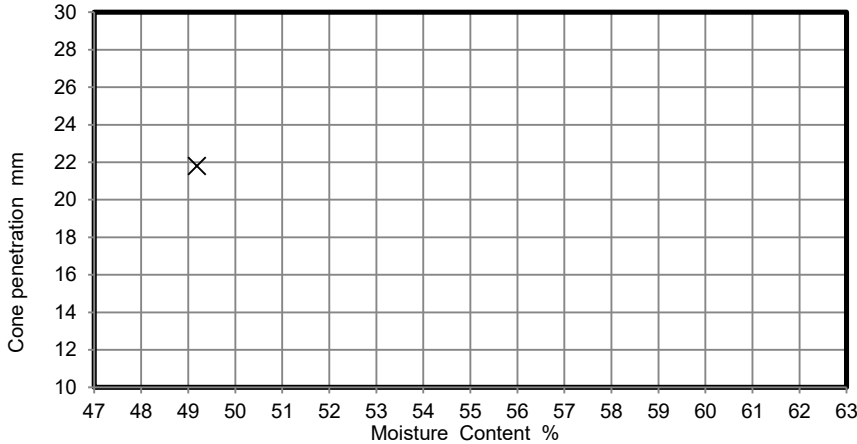
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023

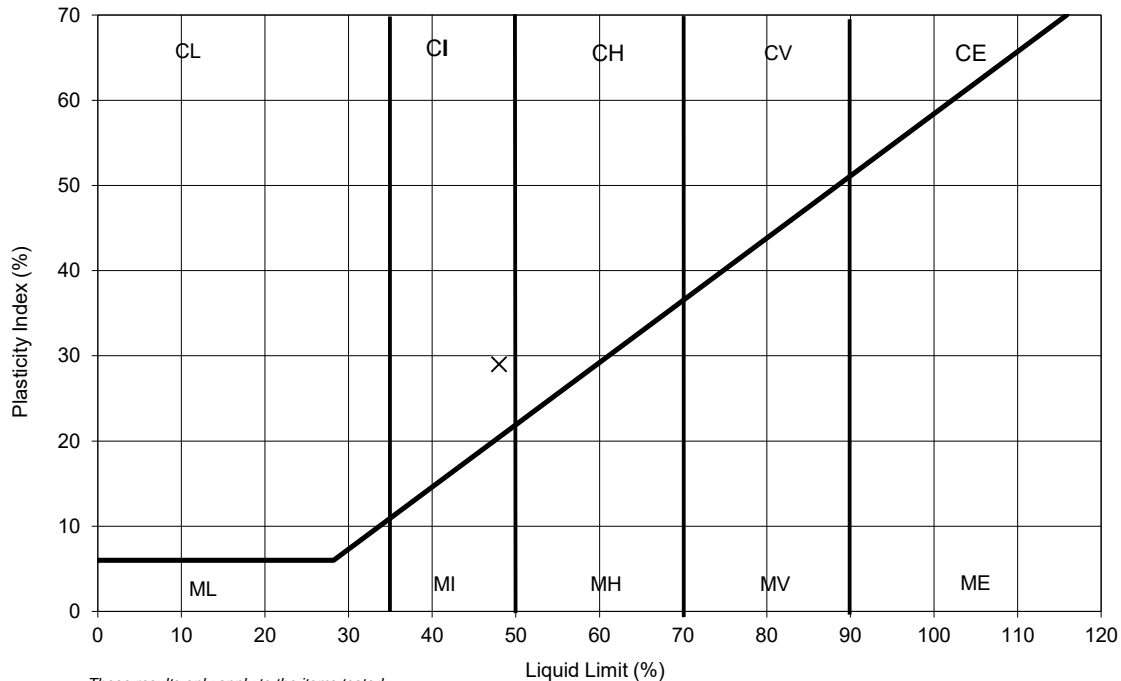


|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 23 | % |
| % PASSING 425µm SIEVE    | 85 | % |
| LIQUID LIMIT             | 48 | % |
| PLASTIC LIMIT            | 19 | % |
| PLASTICITY INDEX         | 29 | % |

### Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH04

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 3.50

Soil Description Brown sandy silty CLAY with rare fm gravel

Depth Base m -

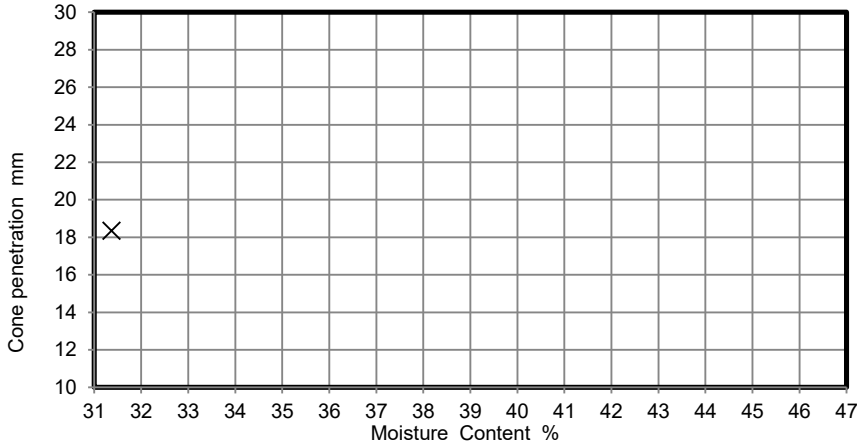
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023

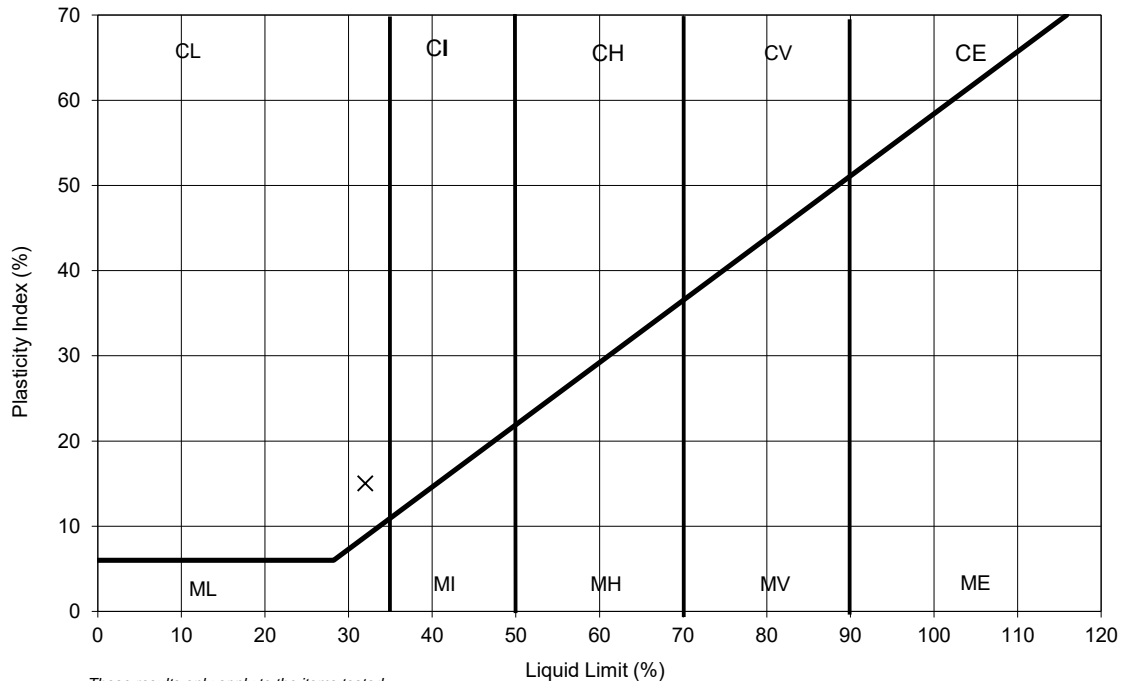


|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 18 | % |
| % PASSING 425µm SIEVE    | 98 | % |
| LIQUID LIMIT             | 32 | % |
| PLASTIC LIMIT            | 17 | % |
| PLASTICITY INDEX         | 15 | % |

### Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH04

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 5.00

Soil Description Brown and light brown mottled slightly gravelly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)

Depth Base m -

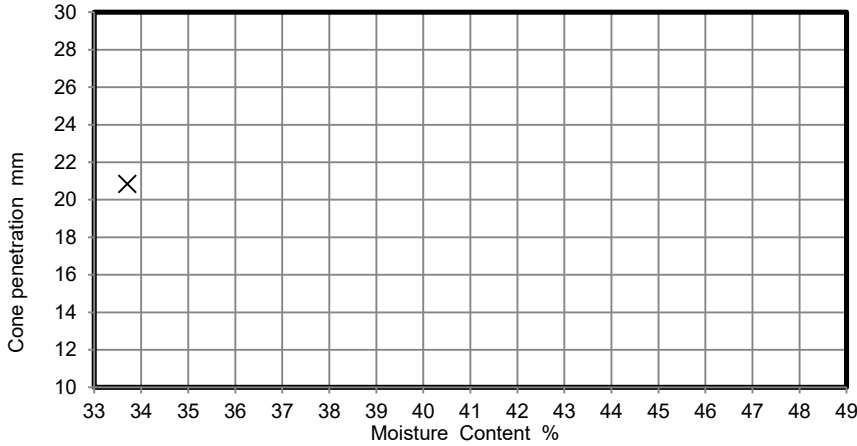
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023



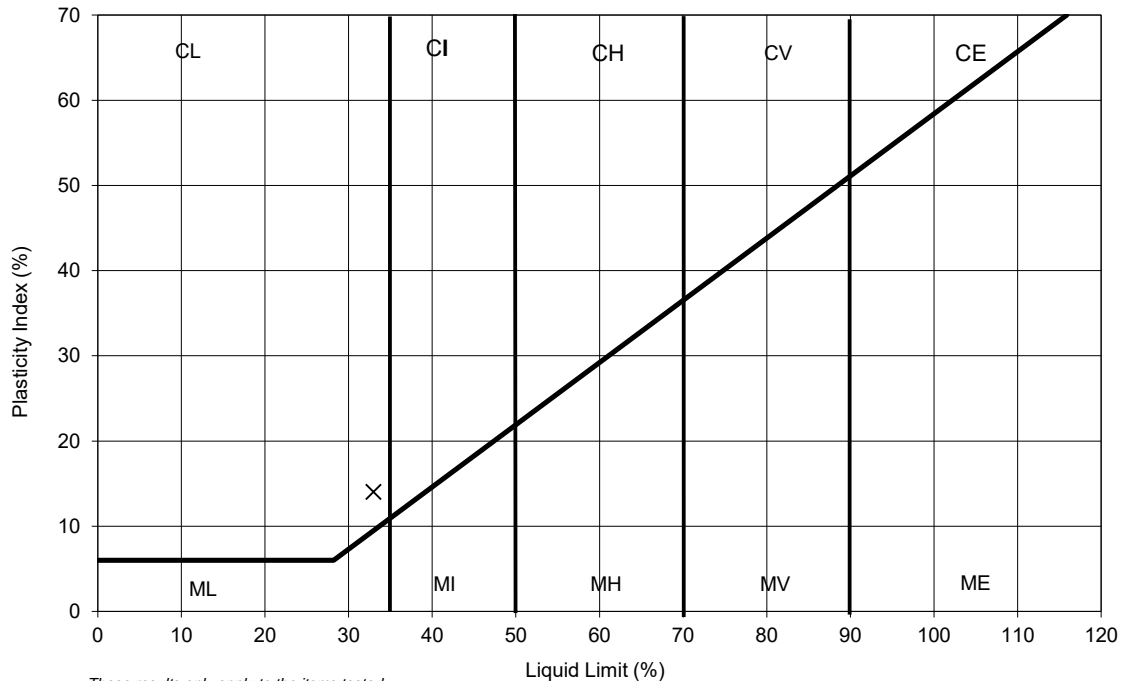
|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 21 | % |
| % PASSING 425µm SIEVE    | 95 | % |
| LIQUID LIMIT             | 33 | % |
| PLASTIC LIMIT            | 19 | % |
| PLASTICITY INDEX         | 14 | % |

### Remarks

Empty box for remarks.

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



These results only apply to the items tested

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#### TEST METHOD

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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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

MSF-5 R2





# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH05

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 3.50

Soil Description Brown and orangish brown mottled sandy silty CLAY with rare fm gravel

Depth Base m -

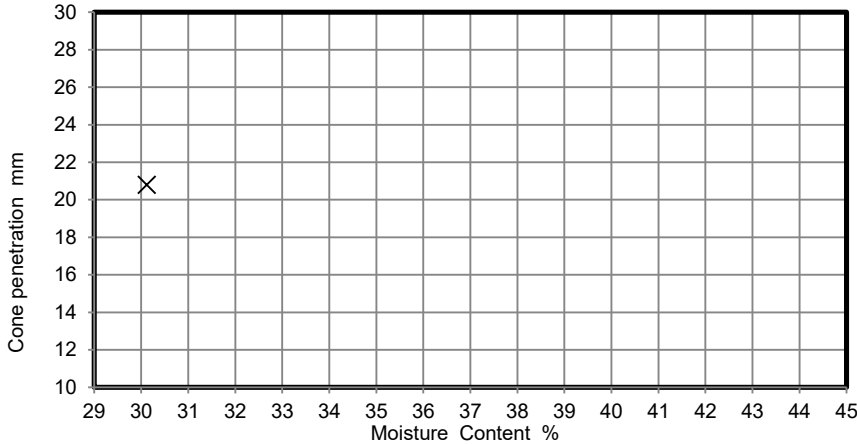
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023

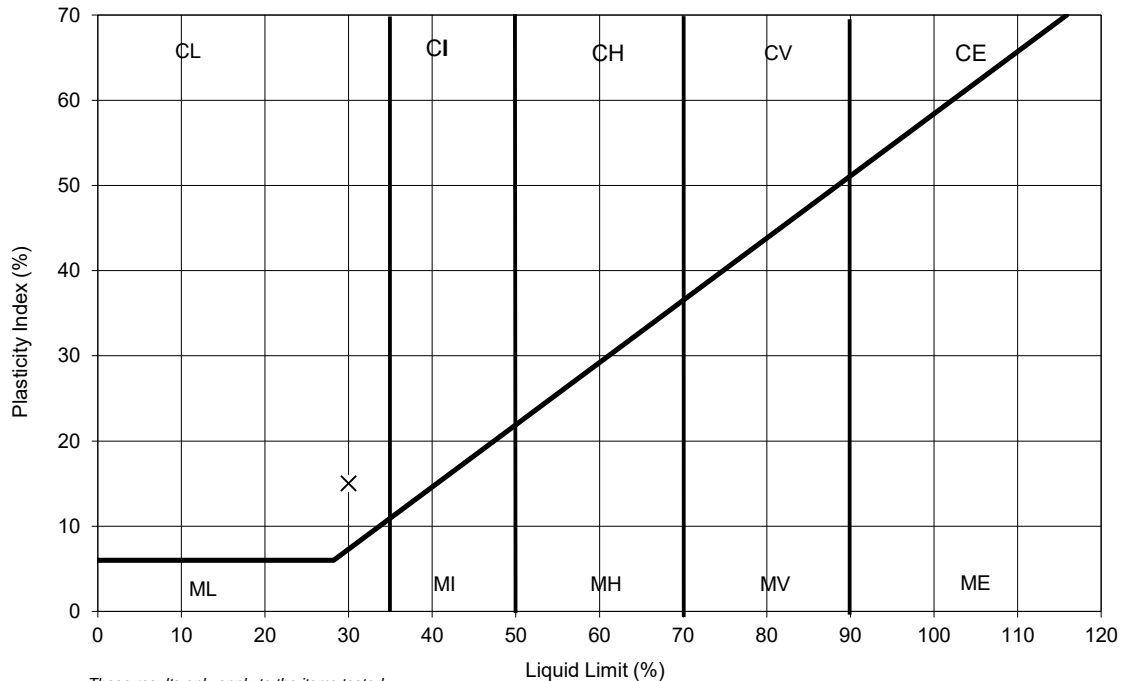


|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 24 | % |
| % PASSING 425µm SIEVE    | 98 | % |
| LIQUID LIMIT             | 30 | % |
| PLASTIC LIMIT            | 15 | % |
| PLASTICITY INDEX         | 15 | % |

### Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



These results only apply to the items tested

NOTE: The report shall not be reproduced except in full without authority of the laboratory

#### TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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

Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 15/05/2023



2519

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

MSF-5 R2



# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33371

Borehole/Pit No. BH05

Site Name 9 Crownfields

Sample No. -

Project No. 5292 Client Sevenoaks

Depth Top m 5.00

Soil Description Brown slightly gravelly slightly sandy silty CLAY (gravel is fmc and sub-angular to sub-rounded)

Depth Base m -

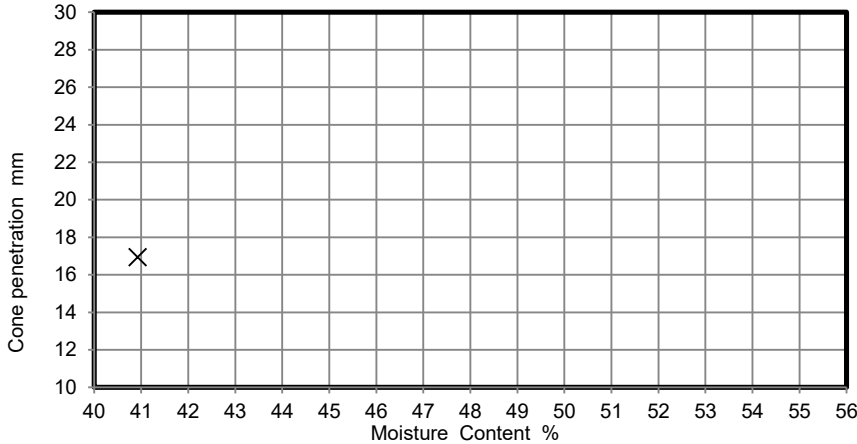
Sample Type D

Samples received 27/04/2023

Schedules received 28/04/2023

Project Started 02/05/2023

Date Tested 11/05/2023



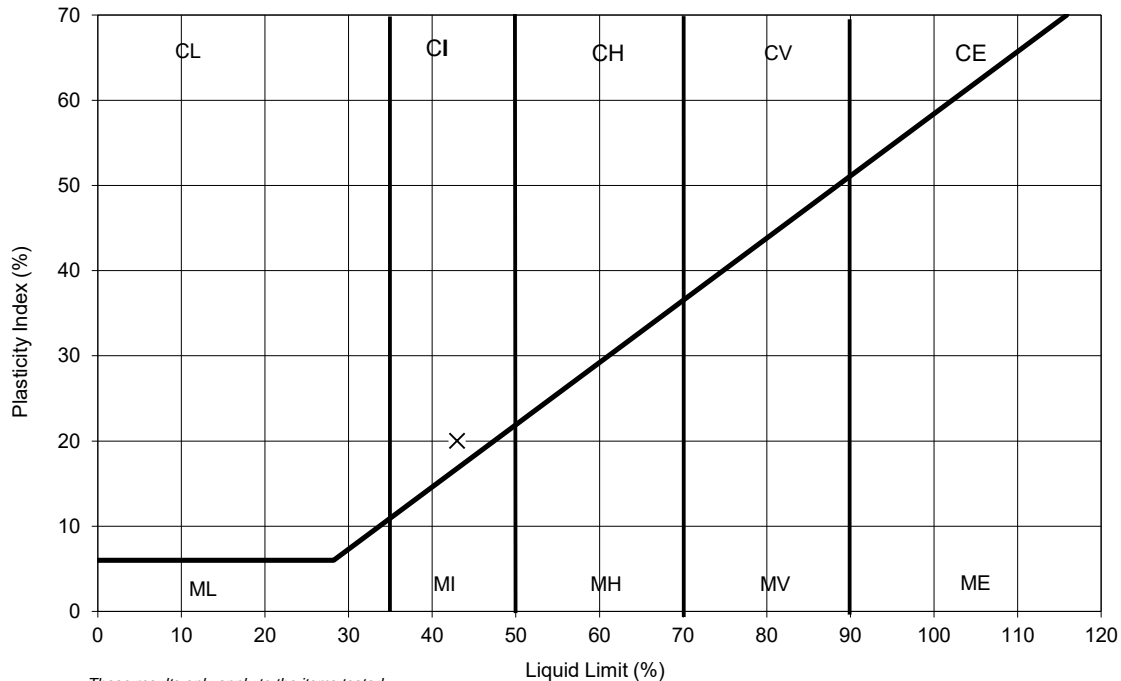
|                          |    |   |
|--------------------------|----|---|
| NATURAL MOISTURE CONTENT | 27 | % |
| % PASSING 425µm SIEVE    | 95 | % |
| LIQUID LIMIT             | 43 | % |
| PLASTIC LIMIT            | 23 | % |
| PLASTICITY INDEX         | 20 | % |

### Remarks

Empty box for remarks.

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

### PLASTICITY INDEX



These results only apply to the items tested

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#### TEST METHOD

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