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Environmental & Geotechnical

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Site Investigation Report

Project Name: Land of Bull Lane, Bethersden

Location: Ashford, TN26 3LA

Client: Esquire Developments Ltd.

Project ID: J16261

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SUMMARY

The site is split into two sections, the northern section is the main body of the site, where the majority of the development is proposed, and the southern section of the site where it is proposed to install an attenuation basin. The northern section of the site is irregular in shape and extends to a maximum of approximately 160m x 175m and comprises an area of undeveloped land. The southern section of the site is also irregular in shape and extends to a maximum of approximately 170m x 60m and comprises a similar area of undeveloped land.

Geological records indicate the site to be underlain by Weald Clay.

A desk study has been carried out by Lustre Consulting Ltd. (Lustre report ref: R233-PH1-01.0_4923, dated June 2024).

An Unexploded Ordnance (UXO) risk assessment was not undertaken as part of these works.

A single phase of intrusive investigation was carried out, comprising twelve trial pits to a maximum depth of 3.0m (bgl) and five windowless sampler boreholes to a maximum depth of 4.0m (bgl).

The presence of dense vegetation and utility services, including a medium pressure gas main, limited/restricted the fieldwork.

The soils encountered comprised 0.2–0.4m of Topsoil/Made Ground over a firm to stiff silty Clay to depths of 1.4/2.3m (bgl), which in turn was underlain by a stiff to very stiff silty Clay (or frequently a Mudstone).

Whilst the intrusive investigation was in progress no groundwater was encountered within any of the exploratory holes, with all of the trial pits and windowless sampler boreholes, being noted as dry upon completion. During the return groundwater monitoring visit, standing water levels were noted between 2.17-3.28m (bgl).

At this stage on the basis of the investigation carried out to date, an allowable bearing capacity of 100kPa is recommended for traditional foundations placed at a minimum depth of 0.9m (bgl), within the natural Clay soils, ensuring all foundations penetrate any made ground. On balance a NHBC Medium Volume Change Potential site classification should be adopted for design purposes.

The sulphate content of the fill and natural soil was found to fall within Class DS-2. The ACEC classification for the site is AC-2z.

Suspended ground floor slabs will be required where made ground depths are greater than 600mm or where foundations greater than 1.5m are required due to the presence of trees. Outside of these areas, either ground bearing or suspended floor slabs will be acceptable.

Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

The investigation and contamination testing carried out across the site to date suggests that the concentrations of contaminants present within the Topsoil, Made Ground and Natural Soils, do not exceed the Tier 1 Screening Values for the proposed development (Residential land use with homegrown produce consumption).

At the time of writing a programme of gas monitoring is scheduled to be undertaken and this report will be updated once this is completed.

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

As with any site, areas of contamination not identified during investigation works may come to light during the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any hitherto unknown contamination is identified and dealt with in an appropriate manner. Depending on the nature of any such contamination, it may prove necessary to reassess the remedial strategy for the site. The presence of contamination may affect the classification of waste soils, or the potential for their re-use.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works.

It should be recognised that site conditions can vary over time, in response to seasonal variations, prevailing weather conditions or other natural phenomena, and also in response to human activity on or near the site. These factors can influence both geotechnical and geoenvironmental characteristics, including soil moisture conditions, the stability of the ground, the occurrence of groundwater, and the behaviour of mobile contamination phases. Accordingly, the accuracy and reliability of the investigation findings may be affected.

The investigation was conducted and this report has been prepared for the sole internal use and reliance of Esquire Developments Ltd. and their appointed Engineers. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Southern Testing Laboratories Ltd. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

Southern Testing Laboratories Ltd. assumes no liability for any conditions not revealed in the records obtained in performance of the services in accordance with the limitations of the contract with the Client, or where variations occur between exploratory hole locations or below the depth of investigation.

The recommendations contained in this report are made in respect of the particular context of the investigation as described in the report and may not be appropriate to alternative development schemes. This report should be considered in its entirety and Southern Testing Laboratories Ltd. accepts no responsibility for and excludes liability in respect of any omission or alteration made by others, and any use of the report for any purpose other than that for which it was produced.

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For and on behalf of Southern Testing Laboratories Limited

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A INTRODUCTION

1 Authority

Our authority for carrying out this work is contained in project order form Q260474-2 dated on the 1st June 2026.

2 Location

The site is located approximately 3.4km south of Pluckley Railway Station. The approximate National Grid Reference of the site is TQ 92280 39795. The site location is indicated on Figure 1 within Appendix A.

3 Proposed Construction

It is proposed to construct a series of residential properties, together with their garden areas and access road(s).

For the purposes of the contamination risk assessment, the proposed development land use is classified as Residential with consumption of Home-grown Produce CLEA Model Ref [2] / C4SL Report Ref [3].

The gas sensitivity of the proposed development is rated as High CIRIA C665 Ref [1].

4 Object

A Phase 1 Desk Study has previously been undertaken by Lustre Consulting Ltd. (Lustre report ref: R233-PH1-01.0_4923, dated June 2024). This report is a Phase II geotechnical and contamination (risk estimation and evaluation) investigation.

The object of the investigation was to provide an overview of the site and assist in assessing foundation bearing conditions and other soil parameters relevant to the proposed development, and to assess the likely nature and extent of soil, groundwater and soil gas contamination on the site.

5 Scope

This report presents our exploratory hole logs and test results and our interpretation of these data.

A UXO risk assessment was not requested within our brief for the investigation.

As with any site there may be differences in soil conditions between exploratory hole positions and below the depth of investigation. Southern Testing assumes no liability in respect of such differences.

This report is not an engineering design and the figures and calculations contained in the report should be used by the Engineer, taking note that variations will apply, according to variations in design loading, in techniques used, and in site conditions. Our figures therefore should not supersede the Engineer's design.

The site investigation has been completed with reference to BS 5930 Ref [4] and BS 10175 Ref [5].

Waste Classification of soils has been included within the brief for the investigation.

It should be recognised that site conditions can vary over time, in response to seasonal variations, prevailing weather conditions or other natural phenomena, and also in response to human activity on or near the site. These factors can influence both geotechnical and geo-environmental characteristics, including soil moisture conditions, the stability of the ground, the occurrence of groundwater, and the behaviour of mobile contamination phases. Accordingly, the accuracy and reliability of the investigation findings may be affected. The findings and opinions conveyed via this investigation report are based on information obtained from a variety of sources as detailed within this report, and which Southern Testing Laboratories Ltd. believes are reliable. Nevertheless, Southern Testing Laboratories Ltd. cannot and does not guarantee the authenticity or reliability of the information it has obtained from others.

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Detailed information on the proposed development, such as detailed final layout, loadings and serviceability limits was not provided. Accordingly, where geotechnical design advice is provided it is on the prescriptive basis allowed for by Eurocode 7: employing conventional and conservative design rules.

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

B DESK STUDY AND WALKOVER SURVEY

6 Desk Study

A desk study has been carried out by Lustre Consulting Ltd. (Lustre report ref: R233-PH1-01.0_4923, dated June 2024), to which the reader is referred, the following sections are included in order to provide some context.

6.1 Geology

The British Geological Survey Map of the area (Sheet No. 304 - Tenterden) together with the BGS online mapping, indicates that the site geology consists of Weald Clay Formation, with superficial Alluvium mapped to the south of the site.

6.1.1 Alluvium

Alluvium is a geologically recent deposit found in association with watercourses. It is typically soft to firm normally consolidated, compressible silty clay, but can contain layers of silt, sand, peat and basal gravel. A stronger, desiccated surface zone may be present.

Running sand or silt may be encountered. Excavations are often unstable. Bottom heave may be encountered in clayey soils below 3 m.

It is inherently variable and rapid lateral transitions in soil type should be anticipated.

6.1.2 Weald Clay Formation

The Weald Clay Formation comprises dark grey thinly-bedded shales and mudstones with subordinate siltstones, sandstones (including the Horsham Stone Member), shelly limestones and clay ironstones. The mudstones weather to yellow and brown clays. Conspicuous bands of red clay also occur, usually in close association with sandstone beds.

The clays have often been worked for various purposes, and the clay ironstone, a low-grade iron ore, was worked from sporadic beds across the Wealden area. The steep sides of the degraded remains of former workings are usually unstable. Other workings have been filled with a variety of materials.

This formation is known to contain pyrite.

6.2 UXO Risk Management

The agreed scope of work did not allow for either a preliminary or detailed UXO risk assessment.

By way of comment, the possibility of unexploded ordnance (UXO) being encountered on a site falls within the category of a potentially significant risk and should be addressed as a legal duty under the Construction (Design and Management) Regulations by the Client as early as possible in a project.

The CIRIA publication C681 Ref [6] has been developed to provide a consistent framework for the management of potential risks posed by UXO during site investigation and groundwork phases of construction. The process adopts a tiered approach, divided into four distinct stages; Preliminary risk assessment, Detailed risk assessment, Risk mitigation and Implementation.

7 Site Description

7.1 General Site Description and Boundaries

The site is split into two sections, the northern section is the main body of the site, where the majority of the development is proposed, and the southern section of the site where it is proposed to install an attenuation basin.

Northern Site:

The northern section of the site is irregular in shape and extends to a maximum of approximately 160m x 175m and comprises an area of undeveloped land. The site is bounded to the north by Bull Lane, which runs approximately north west to south east. To the north east of the site is a public house and its associated car parking area, which sits on the junction between Bull Lane and Ashford Road (A28). Ashford Road (A28) runs approximately north east to south west along the eastern site boundary. To the north west of the site are a series of residential houses and their associated gardens. The western site boundary is marked by a hedgerow, beyond which were similar undeveloped fields. The southern boundary of the main section of the site is marked by a hedgerow, beyond which is a similar area of undeveloped land which then leads to the Southern site.

Southern Site:

The southern section of the site is also irregular in shape and extends to a maximum of approximately 170m x 60m and comprises a similar area of undeveloped land. This section of the site is bounded to the south by a stream, to the east by Ashford Road (A28) and to the west by similar undeveloped land/fields. The Southern section of the site has no defined northern boundary.

7.2 Topography and Drainage

On a regional scale the topography of the local area generally slopes down towards the south/south west and the stream to the south of the site. The site itself, follows the local topography and slopes down towards the south and the stream which marks the southern site boundary.

7.3 Vegetation

At the time of the intrusive investigation areas of the site were relatively overgrown with grass/shrubs, a number of semi-mature to mature trees were present both on site and within the surrounding area, these included Oak trees, Hawthorn trees, Silver Birch and Sycamores.

7.4 Buildings and Land Use on Site and Nearby

The only structure noted on site was a single-storey concrete structure within the north western area of the site, which is understood to be associated with the Medium Pressure gas pipe running across the site. The site is located within a predominately rural/residential area.

7.5 Site Photographs

A series of photographs showing the site and surrounding area at the time of the intrusive investigation is included in Appendix E.

C GROUND INVESTIGATION

8 Strategy and Method

The strategy adopted for the intrusive investigation comprised the following:

Activity / Method	Purpose	Max Depth Range (m bgl)	Installations / Notes
WLS01 – WLS05 Dynamic Windowless Sampling	Boreholes to investigate the shallow ground conditions within external areas. To allow SPT's and collection of samples for geotechnical and contamination testing. Installation of shallow land gas and groundwater monitoring wells.	3.0-4.0	50mm gas & groundwater monitoring wells installed within all boreholes.
TP01 – TP12 JCB 3CX	Trial pit to investigate the shallow ground conditions and allow for assessment of soakage potential using the BRE365 method.	3.0	BRE365 testing within TP06 and TP12.
DCP1-11 CBR test	CBR DCP tests using the TRL method on proposed road layout.	1.0	Adjacent to trial pits.

Exploratory hole locations are shown in Figure 2 in Appendix A.

In-situ test and sampling methods descriptions employed are given in Appendix B together with the test results.

SPT Energy Ratio certificates and a Summary Table of SPT N Values is provided within Appendix B.

The presence of dense vegetation and utility services, including a medium pressure gas main, limited/restricted the fieldwork.

9 Weather Conditions

The fieldwork was carried out between 7-8th July 2026, at which time the weather was generally dry and sunny. The preceding months of April and May 2026 were generally significantly direr than average in the South East of England. June 2026 was generally wetter than average. July 2026 was significantly drier than normal.

10 Soils as Found

The soils encountered are described in detail in the attached exploratory hole logs (Appendix A), but in general comprised a covering of silty clays/made ground over extremely weak mudstone. A summary is given below.

Depth (m bgl)	Soil Type	Description
GL to 0.2/0.4m	Topsoil	Pale grey to pale brown, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
GL to 0.3/0.35m	Made Ground (TP05, TP10 & TP11 only)	Pale brown silty, sandy, gravelly, CLAY, with frequent rootlets. Gravel comprises medium to coarse, sub-angular, chalk, flint and ceramic. MADE GROUND
0.2/0.4m to 0.6/1.0m	Silty Clay Weald Clay Formation	Firm to very stiff, pale yellowish brown, silty, CLAY with frequent rootlets.
0.6/1.0m to 1.4/4.0m+	Silty Clay Weald Clay Formation	Firm to very stiff, thinly laminated, orange brown to reddish brown mottled pale grey, silty, CLAY.
1.4/2.7m to 3.0m+	Mudstone Weald Clay Formation	Extremely weak, thinly laminated, brown mottled bluish grey, shaley, MUDSTONE

The soils found are generally in accordance with those anticipated for the Weald Clay Formation.

10.1 Visual and Olfactory Evidence of Contamination

During the course of the intrusive investigation works, no visual or olfactory evidence of significant contamination was noted, however made ground was noted, in three of the trial pits (TP05, TP10 & TP11), such soils can potentially contain elevated concentrations of heavy metals, Polyaromatic Hydrocarbons (PAH's), asbestos etc. which can only be detected through laboratory analysis. The results of the laboratory analysis undertaken to date are discussed in Section E.

11 Groundwater Observations

No groundwater was encountered during the course of the intrusive investigation.

D DISCUSSION OF GEOTECHNICAL TEST RESULTS AND RECOMMENDATIONS

12 Geotechnical Laboratory Tests

The following geotechnical laboratory testing was carried out on selected samples in order to aid material classification and characterise soil properties. The test method references and results are given in Appendix C.

Laboratory Test	Number of Samples Tested	Stratum
Moisture Content	16	Weald Clay Formation
Atterberg Limit	16	Weald Clay Formation
Particle Size Distribution (Wet Sieve)	1	Weald Clay Formation
BRE SD1 Suite B (Soil)*	8	Weald Clay Formation

**Sulphate results for an additional 3 No. topsoil samples, 3 No. made ground samples and 4 No. natural soils samples are included within the contamination test results.*

13 Soil Classification and Properties

13.1 Topsoil/Made Ground

Made Ground/Topsoil was noted within all seventeen of the exploratory holes, to depths of 0.2/0.4m (bgl). The soils within fourteen of the trial pits were recorded as topsoil, whereas the soils within three of the trial pits (TP05, TP10 & TP11) were observed to include fragments of ceramic, flint and chalk and therefore, were recorded as made ground.

At this stage no geotechnical laboratory testing has been undertaken on the made ground/topsoil material recovered.

It is possible that obstructions could be present within the made ground/topsoil, associated within former developments and/or the medium pressure gas pipe present on site.

The made ground should be anticipated to be very variable in both composition and thickness across the site and potentially having a high compressibility.

13.2 Weald Clay Formation

The Weald Clay Formation soils were seen to comprise firm to very stiff, silty, Clays becoming Mudstone at depth.

Atterberg Limit tests were undertaken on 16 No. samples of the silty clay soils recovered from across the site, at depths ranging from 0.5 to 2.5m. The classification of these samples ranged from CL (clays of low plasticity) to CV (clays of very high plasticity). The Atterberg Limit test results can be found in Appendix C and are summarised in the table below.

	Initial WC (%)	Liquid Limit (%)	Plastic Limit (%)	Unmodified Plasticity Index (%)	Percentage Passing 425µm sieve (%)
Range	13-31	35-75	19-32	16-45	100
Mean	21	52	24	28	100

The Standard Penetration Test (SPT) N values within these materials were recorded in the range N=8 to N=50

A single Particle Size Distribution test was undertaken on a sample recovered from TP10 at 2.0m. The Particle Size Distribution test results are included within Appendix C and are summarised in the table below.

Hole ID & Depth (m bgl)	Clay/Silt (%)	Sand (%)	Gravel (%)	Cobbles (%)
TP10 at 2.0m	94	6	0	0

14 Groundwater Levels

Whilst the intrusive investigation was in progress no groundwater was encountered within any of the exploratory holes, with all of the trial pits and windowless sampler boreholes, being noted as dry upon completion.

Gas & groundwater monitoring wells were installed within all five of the windowless sampler boreholes (WLS01 – WLS05), with groundwater level being measured during the course of the monitoring visits.

The standing water levels from the groundwater monitoring visits undertaken to date are summarised in the table below.

Hole ID	Total Depth (m bgl)	Standing Water Levels (bgl)
		18/08/2026
WLS01	3.8m	2.17m
WLS02	4.0m	3.28m
WLS03	3.0m	2.93m
WLS04	3.0m	Dry
WLS05	3.0m	2.99m

By way of comment, groundwater levels vary considerably from season to season and year to year, often rising close to the ground surface in wet or winter weather, and falling in periods of drought. Groundwater levels measured in wet or Winter months may be significantly higher than those that might be experienced in dry or Summer months and the possibility of a requirement for dewatering or alternative foundation solution that may not have initially been considered should not be overlooked.

Long-term monitoring from boreholes or standpipes is required to assess the ground water regime and this did not form part of the brief for this site investigation. The effects of climate change, particularly the increased likelihood of significant rainfall events and warmer, wetter winters may mean groundwater levels in the future could be higher than those measured during site investigation works.

15 Swelling and Shrinkage

Shrinkable soils are subject to changes in volume as their moisture content is altered. Soil moisture contents vary from season to season and can be influenced by a number of factors including the action of roots. The resulting shrinkage or swelling of the soil can cause subsidence or heave damage to foundations, the structures they support, floor slabs and services.

The designer should be aware that precautions regarding swelling and shrinkage are applicable, and in this respect NHBC Standards provide a helpful guide with respect to minimum foundation depths and deepening, and other precautions, particularly within the zone of influence of vegetation.

Assessment of foundation depths should take into account trees, hedgerow and shrubs which are to be removed, are to remain or are proposed in any planting scheme; and which may be allowed to reach maturity.

Atterberg Limit tests were carried out on a total of 16 No. samples of the clay soils recovered from across the site (see Section 13). The unmodified plasticity indices for these sixteen samples were recorded in the range 16-45%.

Based on the NHBC classification two samples are classified as Low NHBC Volume Change Potential (VCP), twelve samples are classified as Medium VCP, with the remaining two samples being classified as NHBC High VCP.

On the basis of the above, it is recommended that on balance a NHBC Medium Volume Change Potential site classification should be adopted for design purposes.

Full details of protective measures are given in NHBC Standards Ref [7], Chapter 4.2 to which the reader is referred.

16 Lateral Pressure & Heave

Where foundations are more than 1.5m deep, and are within the zone of influence of existing or removed trees, then precautions will also need to be taken against the effects of lateral swelling and heave of soils beneath house units due to removal of trees, or cutting tree roots.

A helpful guide with respect to requirements for the relief of lateral pressure is set out in the NHBC Standards Ref [7], Chapter 4.2 to which the reader is referred. The basic requirement is that compressible material or void former should be installed on the inner face of external foundation walls. With piled foundations additional voids are required below ring beams.

17 Soakaways

Soakage testing was carried out in two of the trial pits (TP06 & TP12). These indicated little or no infiltration; which was not unexpected given the low permeability clay soils encountered.

On the basis of these test results and given the soil types present, the site is not considered suitable for shallow soakaway drainage. We would therefore recommend a positive drainage system be considered for all surface water disposal.

17.1 Soakage Test Results

The BRE paper DG365, Ref [8] describes a method for site testing to determine soil infiltration rates at the proposed site of a soakaway. The in-situ test method is described in Appendix B.

A total of two soakage tests were carried out within two trial pits (TP06 & TP12), the locations of which are shown on the attached site plan Figure 2, Appendix A. The full results of the soakage tests are presented within Appendix B.

The DG365 Ref [8], states that each pit should be allowed to drain three times to near empty, with filling on the same or consecutive days.

The infiltration rate from each trial hole is summarised in the table below. The soakage rate in this report in expressed as ℓ/m²/minute, which is a convenient rate to use. The BRE use a unit of m/sec, which is the value in l/m²/minute divided by 60,000.

Test ID	Test Depth (mbgl)	Design Infiltration Rate		Notes
		ℓ/m²/minute	m/sec	
TP06	3.0	0.0	0.0	Water level did not fall during test.
TP12	3.0	0.0047	7.85×10^{-8}	

Note: The Design Infiltration Rate is the lowest of the three tests

Where three fillings have not been carried out, a reduction factor should be applied to the result to provide a design infiltration rate.

18 Sulphates and Acidity

Chemical analysis of the underlying soils has been undertaken to establish the aggressive chemical environment for concrete in accordance with the BRE Special Digest 1, Ref [9]. The site category determined is that of a natural ground location that contain pyrites (or potential pyrites), as the underlying soils form part of the Weald Clay Formation.

The measured pH of the topsoil, made ground and natural soils analysed were in the range 4.8 – 7.0 (Slightly acidic).

Including the results from the contamination testing, the soluble sulphate levels within the topsoil and made ground (6 No. samples) were in the range 14.2-274mg/ℓ. Within the natural soils (12 No. samples) the soluble sulphate levels were in the range 5.22-251mg/ℓ.

Given the sample numbers tested (18 No. samples) the characteristic value for sulphate concentration has been determined from the mean of highest 20% of measured concentrations. These results indicate a DS-1 classification with an ACEC site classification of AC-1.

Due to the potential presence of pyrite, Total Potential Sulphate values for 8 No. samples were also determined, with 7 No. samples being classified as DS-1 and the remaining samples being classified as DS-2 with an ACEC site classification of AC-2z, assuming mobile groundwater.

19 Foundations and Bearing Capacity

At this stage on the basis of the investigation carried out to date, an allowable bearing capacity of 100kPa is recommended for traditional foundations placed at a minimum depth of 0.9m (bgl), within the natural Clay soils, ensuring all foundations penetrate any made ground.

Only detailed settlement calculations could help determine the degree to which differential settlement might be a risk to foundations. However, due to the variation in soil types encountered, it may be prudent to incorporate some steel reinforcement in foundations and we would advise consultation with a structural engineer in this respect.

A minimum foundation depth of 900mm is anticipated for NHBC Medium Volume Change Potential soils. However, the designer should be aware that precautions regarding swelling and shrinkage are applicable and in this respect NHBC precautions provide a helpful guide with respect to minimum foundation depths and deepening particularly within the zone of influence of trees hedgerows or shrubs; existing, proposed or removed.

Noting that areas of the site are heavily vegetated, allowance should be made for undertaking a detailed survey prior to any vegetation clearance with the location, height and species of all trees, saplings and shrubs accurately recorded.

Subject to the Engineers final design excessive foundation deepening may be required. Based on NHBC guidance, foundations below 2.5m must be designed individually by an engineer on an individual property basis taking into account soil desiccation, heave, lateral pressure, trench stability and workmanship. At depths in excess of 2.5m a piled foundation is usually the most appropriate foundation option.

Further testing is recommended to assess any potential desiccation on site. This should be carried out once a final design layout is available.

20 Piling

In the case of a piled foundation solution allowance should be made for a deeper borehole investigation to provide information for pile design. It is recommended that exploratory boreholes should penetrate to at least a depth of 33% to 50% more than final pile base depth in at least 2 positions.

As with any piling scheme, discussions should be held with selected piling contractors to discuss the technical and financial merits of their various systems. With respect to overall resources, the equipment available should be appropriate for the soils described and anticipated and be able to achieve the depths and diameters considered with an appropriate safety margin.

21 Floor Slabs

Suspended ground floor slabs will be required where made ground depths are greater than 600mm or where foundations greater than 1.5m are required due to the presence of trees. Outside of these areas, either ground bearing or suspended floor slabs will be acceptable.

Floor slabs on shrinkable soils should be designed in accordance with current NHBC Standards. Soil conditions vary with time, and particularly in response to seasonal and prevailing weather conditions, the presence of trees and other vegetation, including the cultivation of crops. These factors should be considered in the floor slab design.

22 Excavations and Dewatering

Statutory lateral support will be required in all excavations where personnel must work. Instability of the sides of any excavation carried out must be expected. Accordingly measures should be taken at all times to ensure that excavations are adequately supported or battered back. An allowance should be made for breaking out sub-surface obstructions associated with any past developments on site.

The clay materials will be prone to instability in open excavations during wet weather or where seepages are encountered and will soften rapidly if exposed to moisture or the elements.

Hard ground, such as rock bands may be encountered, and where necessary allowance should be made for breaking these using hydraulic hammers or the like mounted on the excavation plant, to facilitate excavation.

Significant inflows of groundwater into excavations would not be anticipated nor would the requirement for specialist de-watering activities.

Excavations should be achievable using conventional plant. During the course of this investigation the soils within the exploratory holes, were noted as being stable in the very short-term. However, it should be noted that, site investigation trial pits are not the most effective way of estimating ground instability, as they are typically only open for a limited duration, and in most cases would only give an optimistic view of the longer term stability that might be experienced in an actual site groundworks situation. Excavations for drainage and foundations in particular have a higher aspect ratio, more limited lateral support (from the short ends of the pit) and are typically open for significantly longer durations than site investigation trial pits. Where narrow diameter boreholes are used as the investigation technique, long-term stability can only be crudely estimated from soil type, strength and/or density but cannot be visually assessed. In addition, NHBC Chapter 4.3.9 requires that for strip and trench-fill foundations *'unless otherwise designed by an engineer in accordance with Technical Requirement R5, trench sides and steps should be, as near as possible, vertical'.*

Stability notes provided on trial pit logs only relate to the stability of the trial pit at that location, on that specific day under the prevailing weather and ground conditions for the duration the pit was open. Notes that state pit sides are showing signs of instability (caving/spalling/overbreak etc.) would indicate that vertical or near vertical trench sides may not be achievable. Where no such notes are provided, this does not negate that possibility of instability being encountered on the site.

Drainage excavations may be deeper than the depth of investigation and may, therefore, encounter different conditions.

Therefore, the noted stability during the investigation may well be different than at the time of the required site excavations, particularly where these are carried out at different times of the year. Trial trenches would be advisable prior to the main excavation works to help assess trench stability, groundwater ingress and the requirement for any trench support.

23 Slope Stability

Given the topography of the site and the presence of existing slopes, consideration should be given to stability of these during design and the development of the site. Whilst the existing slopes are not unduly steep, no slope stability analysis has been undertaken at this stage, and it would be advised that any proposed slopes (particularly if steeper than the existing) are confirmed once the earthworks design has been progressed.

24 Pavement Construction

On the basis of the site investigation carried out to date, it is anticipated that the formation subgrade to proposed pavement areas will comprise silty Clay materials.

The results of the TRL DCP CBR testing generally indicated CBR values in the range of 5% to 20% at the anticipated formation / sub-formation level of 0.5 to 1.0mbgl. However, it should be noted that in-situ CBR readings can vary significantly depending on a number of factors, including the moisture content of the soil and this can in turn vary depending on the weather and other site conditions leading up to and during testing. For these reasons it is deemed that the results of in-situ CBR testing represent the CBR value only on the day of the test, and under the conditions prevailing at the time, and should not, in isolation, be considered as being equivalent to the Design CBR value.

The results of Atterberg Limit tests carried out on samples of the silty clay materials recovered at depths between 0.5-1.0m (bgl) from across the site indicate plasticity indices in the range of 18% to 43%, with an average value of 30%. On the basis of guidance in the DMRB Ref [24] a CBR value of about 2% to 2.5% is estimated for a thin pavement construction for poor construction conditions with an assumed low/high water table (water table definitions may vary between highway authorities).

The results of Atterberg Limits tests might be expected to give a more reliable indication of the CBR value at typical equilibrium water content conditions, and Local Authorities are increasingly requesting such testing where roads are proposed for adoption. Therefore, largely based on the Atterberg Limits test results, a preliminary design CBR value of 2.0% can be assumed for pavement foundation design purposes. However, given that the soils are likely to be disturbed by construction plant during the demolition and/or construction phases, it would be suggested that the CBR value is reassessed as construction progresses. Further sampling and laboratory testing may be necessary to satisfy Local Highway Authority design guidance, in terms of frequency and types of testing, if roads are to be submitted for adoption.

The formation should be considered potentially non-frost-susceptible.

The most important element of any road construction is drainage and attention must be given not only to the drainage of the subsoil but to the various layers of construction. To this end, the formation should be shaped to a camber or crossfall to allow water movement out of the sub-base/capping. Silty soils soften extremely quickly if allowed to become wet or if they are excavated below the water table and this softening can give rise to a very substantial increase in costs.

Sub-base and coarse capping materials tend to segregate during placing operations, particularly when end tipped. On soft clay subgrades this can lead to punching and softening of the formation. The use of an appropriate geotextile or geofabric, laid in accordance with manufacturer's recommendations / guidance, should help to minimise this.

The formation should be proof-rolled in a manner appropriate to the subgrade soils, and any soft spots found (definitions may vary between highway authorities) should be excavated and replaced with compacted acceptable granular material. The surface of the formation should then be appropriately compacted, prior to laying the capping layer and/or sub-base.

Construction traffic should be kept off the subgrade formation and it is often advisable to leave a protective layer of soil above the subgrade formation level until the last moment before reducing to the correct formation level and placing the capping and/or sub-base.

During construction phase Local Highway Authorities may also require confirmation that the CBR value/subgrade surface modulus of the subgrade is equal to or greater than the Design CBR value.

Subgrade conditions are likely to vary along the length of any road. Inspections by an appropriately qualified person once formation level is reached are advised to help ensure conditions are as anticipated for the design and any variations notified to the designer.

E DISCUSSION OF GEOENVIRONMENTAL TEST RESULTS AND RECOMMENDATIONS

25 Analytical Framework

There is no single methodology that covers all the various aspects of the assessment of potentially contaminated land and groundwater. Therefore, the analytical framework adopted for this investigation is made up of a number of procedures, which are outlined below. All of these are based on a Risk Assessment methodology centred on the identification and analysis of Source – Pathway – Receptor linkages.

The CLEA model Ref [2], provides a methodology for quantitative assessment of the long-term risks posed to human health by exposure to contaminated soils. Toxicological data is used to calculate a Soil Guideline Value (SGV) for an individual contaminant, based on the proposed site use; these represent minimal risk concentrations and may be used as screening values.

In the absence of any published SGVs for certain substances, Southern Testing have derived or adopted Tier 1 screening values for initial assessment of the soil, based on available current UK guidance including the LQM/CIEH S4UL's Ref [10] and CL:AIRE Soil Generic Assessment Criteria Ref [11]. In addition, in 2014, DEFRA Ref [12] published the results of a research programme to develop screening values to assist decision making under Part 2A of the Environmental Protection Act. Category 4 screening levels were published for 6 substances, with reference to human health risk only. This guidance includes revisions of the CLEA exposure parameters, presenting parameters for public open space land use scenarios, and also of the toxicological approach. The screening levels represent a low risk scenario, based on a 'Low Level of Toxicological Concern' rather than the 'Minimal Risk' of CLEA. Category 4 screening levels for further substances have been published subsequently. The analytical results of this investigation may be considered relative to these levels.

Site-specific assessments are undertaken wherever possible and/or applicable.

CLEA requires a statistical treatment of the test results to take into account the normal variations in concentration of potential contaminants in the soil and allow comparisons to be made with published guidance.

Ground gases are assessed in accordance with the guidance given in CIRIA C665 Ref [1] and BS8485 Ref [13].

The contamination screening values used are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based upon them. Their validity should be confirmed at the time of site development.

26 Site Investigation – Soils

26.1 Sampling Regime

The number of sample locations was limited and were intended to provide general coverage.

Access was restricted by the presence of dense vegetation and utility services, including a medium pressure gas main.

26.2 Testing

The desk study carried out by Lustre Consulting Ltd. (Lustre report ref: R233-PH1-01.0_4923, dated June 2024), identified no potential sources of contamination either on site or within the surrounding area. However, as a precaution, to cover a good range of general contaminants, and due to observations of areas of made ground present on site, the following tests were selected.

Test Suite	Number of Samples	Soil Tested
STL Key Contamination Suite	3 2 3	Made Ground Topsoil Natural Soils

Test Suite	Number of Samples	Soil Tested
Asbestos Screen	3 3 4	Made Ground Topsoil Natural Soils
Preliminary Waste Classification	1 1	Topsoil Natural Soils
TPH Texas Split C6-C40	1 1	Topsoil Made Ground

The test results are presented in full in Appendix D. A summary and discussion of the significance of the results and identified contamination sources is given below. Contamination testing including

26.3 Test Results and Identified Contamination Sources

26.3.1 General Contaminants

The results of the key contaminant tests have been analysed in accordance with the CLEA methodology. The samples have been grouped into three populations comprising made ground, topsoil and natural soil. For each parameter in each population the sample mean is calculated and compared to a Tier 1 screening value. If the sample mean exceeds the screening value, the soil may be regarded as contaminated and further assessment may be required. If neither the sample mean nor any single value exceeds the screening value, the soil may be regarded as not contaminated, though further confirmatory assessment may be required. Where any single parameter value exceeds the screening value but the sample mean does not, further statistical analysis may be applied to that parameter if the available data is suitable. Such analysis would include an assessment of the Normality of the distribution of the data, consideration of the presence of outliers, and the calculation of a UCL estimate of the mean.

Summary data is presented in the tables below and the laboratory analysis is included in Appendix D. The screening values and source notes are presented in Table 1 “Tier 1 Screening Values” at the front of Appendix D.

Soil Type: Made Ground

Contaminants	Units	TP05 at 0.2m	TP10 at 0.2m	TP11 at 0.2m	Residential with Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	9.1	11	12	37
Cadmium (Cd)	mg/kg	<0.2	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	28	27	26	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	<1.8	<1.8	6
Lead (Pb)	mg/kg	47	39	48	200
Mercury (Hg)	mg/kg	<0.3	<0.3	<0.3	7.6-11
Selenium (Se)	mg/kg	1.0	<1.0	<1.0	250
Nickel (Ni)	mg/kg	12	9.3	9.9	130
Copper (Cu)	mg/kg	21	17	17	2,400
Zinc (Zn)	mg/kg	54	45	43	3,700
Phenol	mg/kg	<1.0	<1.0	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	<0.05	0.2	0.1	1.7-2.4

Contaminants	Units	TP05 at 0.2m	TP10 at 0.2m	TP11 at 0.2m	Residential with Home-grown Produce Consumption Tier 1 Screening Values
Naphthalene	mg/kg	<0.05	0.08	0.08	2.3-13
Total PAHs (16)	mg/kg	<0.80	2.19	1.23	/
Total Cyanide (CN)	mg/kg	<1.0	<1.0	<1.0	/
Acidity (pH values)	Units	6.7	6.1	6.1	/
Soil Organic Matter	%	5.8	4	2.6	/

* Assumed as Total Cr minus CrVI

Three samples of the made ground soils recovered from across the site were submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a residential land use, with homegrown produce consumption. This concurs with the visual and olfactory evidence.

Soil Type: Topsoil

Contaminants	Units	TP01 at 0.2m	TP03 at 0.2m	TP07 at 0.2m	Residential with Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	8.5	10	13	37
Cadmium (Cd)	mg/kg	<0.2	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	28	27	27	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	<1.8	<1.8	6
Lead (Pb)	mg/kg	56	40	71	200
Mercury (Hg)	mg/kg	<0.3	<0.3	<0.3	7.6-11
Selenium (Se)	mg/kg	<1.0	1.3	1.3	250
Nickel (Ni)	mg/kg	10	11	10	130
Copper (Cu)	mg/kg	19	21	20	2,400
Zinc (Zn)	mg/kg	53	51	47	3,700
Phenol	mg/kg	<1.0	<1.0	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	<0.05	<0.05	<0.05	1.7-2.4
Naphthalene	mg/kg	<.05	<0.05	<0.05	2.3-13
Total PAHs (16)	mg/kg	1.26	<0.80	<0.80	/
Total Cyanide (CN)	mg/kg	<1.0	<1.0	<1.0	/
Acidity (pH values)	Units	7.0	6.9	6.9	/
Soil Organic Matter	%	5.4	3.2	4.3	/

* Assumed as Total Cr minus CrVI

Three samples of the topsoil recovered from across the site were submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a residential land use, with homegrown produce consumption. This concurs with the visual and olfactory evidence.

Soil Type: Natural Soils

Contaminants	Units	TP04 at 0.5m	TP05 at 0.5m	TP10at 0.5m	TP11 at 0.5m	Residential with Home-grown Produce Consumption Tier 1 Screening Values
Arsenic (As)	mg/kg	13	7.3	17	19	37
Cadmium (Cd)	mg/kg	<0.2	<0.2	<0.2	<0.2	11
Trivalent Chromium (CrIII)*	mg/kg	36	35	44	43	910
Hexavalent Chromium (CrVI)	mg/kg	<1.8	<1.8	<1.8	<1.8	6
Lead (Pb)	mg/kg	19	22	21	21	200
Mercury (Hg)	mg/kg	<0.3	<0.3	<0.3	<0.3	7.6-11
Selenium (Se)	mg/kg	<1.0	1.0	<1.0	<1.0	250
Nickel (Ni)	mg/kg	16	23	9.7	11	130
Copper (Cu)	mg/kg	31	33	27	30	2,400
Zinc (Zn)	mg/kg	45	61	39	28	3,700
Phenol	mg/kg	<1.0	<1.0	<1.0	<1.0	120-380
Benzo(a)pyrene (BaP)	mg/kg	<0.05	<0.05	<0.05	<0.05	1.7-2.4
Naphthalene	mg/kg	<0.05	<0.05	<0.05	<0.05	2.3-13
Total PAHs (16)	mg/kg	<0.80	<0.80	<0.80	<0.80	/
Total Cyanide (CN)	mg/kg	<1.0	<1.0	<1.0	<1.0	/
Acidity (pH values)	Units	7.0	6.4	6.1	4.8	/
Soil Organic Matter	%	0.4	0.5	1.2	0.6	/

* Assumed as Total Cr minus CrVI

Four samples of the Natural Soils recovered from across the site were submitted for testing. The concentrations of the various contaminants tested are low and fall below the corresponding Tier 1 assessment criteria for a residential land use, with homegrown produce consumption. This concurs with the visual and olfactory evidence.

26.3.2 Asbestos Containing Materials

No asbestos containing materials were detected in the samples analysed and none were observed in the exploratory holes. However, it should be noted that the exploratory holes are of small size relative to the area investigated and the investigation was constrained by the presence of dense vegetation and utility services, including a medium pressure gas main. Therefore, the samples obtained may not reflect the full composition of the soils on the site, and there is always the potential for pockets of asbestos or for asbestos containing materials to be present, which have not been detected in the sampling.

26.3.3 Organic Contaminants

There was no visual or olfactory evidence of significant fuel/oil contamination in the exploratory holes. However, as a precaution, and to cover a good range of general contaminants, one sample of the Made Ground soils and one sample of the Topsoil recovered from locations across the site were submitted for Total Petroleum Hydrocarbon (TPH Texas Split) analysis.

The results of are included in Appendix D and summarised in the tables below.

Hydrocarbon Substance or Fraction	Measured Concentrations in mg/kg			
	TP01 at 0.2m	TP05 at 0.2m	Screening Values*	
			Aliphatic	Aromatic
Soil Type	Topsoil	Made Ground	N/A	N/A
TPH C6-C8	<0.01	<0.01	230	290
TPH C8-C10	<0.02	<0.02	65	83
TPH C10-C12	<2.0	<2.0	330	180
TPH C12-C16	<4.0	<4.0	2,400	330
TPH C16-C21	<10	<10	92,000	540
TPH C21-C40	13	<10	92,000	1,500
TPH C6-C40	13	<10	N/A	
Hazard Index (Aliphatic)*	0.0083	0.0083	1.0	
Hazard Index (Aromatic)*	0.0507	0.0487	1.0	

The Concentration of the various Petroleum Hydrocarbon factions are either very low or less than the limit of detection and fall below the corresponding Tier 1 assessment criteria for Residential with homegrown produce consumption land use and, therefore, are not considered to pose any risk to site end users or ground workers.

Petroleum hydrocarbon mixtures are assessed using the Hazard Index approach. The calculated Hazard Index values for the samples tested are below 1.0, indicating the recorded concentrations are below the tolerable limits for long term exposure with regards to human health.

27 Site Investigation - Gas

27.1 Gas Sources

Gas and groundwater monitoring were requested by the Client as part of our brief for in intrusive investigation works, on this site.

The desk study carried out by Lustre Consulting Ltd. (Lustre report ref: R233-PH1-01.0_4923, dated June 2024), makes no reference to potential gas sources. Alluvium, likely associated with the river, is mapped to the south of the site. In addition to this, Made Ground soils was encountered within a number of the exploratory holes on site, both of which are potential sources of ground gas.

These types of sources are characterised as being of Very Low generation potential, Wilson and Haines Ref [14].

27.2 Monitoring Programme and Results

The sensitivity of the proposed development is rated as High. At the time of writing a programme of gas monitoring is scheduled to be undertaken and this report will be updated once this is completed.

28 Summary of Identified Contamination

On the basis of the contamination testing carried out to date, no significant contamination has been identified with respect to human health or the wider environment.

29 Soil Waste Management

29.1 Re-use of Soils

It is anticipated that the arisings from groundworks on this site will comprise topsoil, made ground and natural soils

Clean natural arisings from groundworks may be re-used on site without further testing, where there is a definite use for such materials, e.g. raising levels or construction of landscaping layers or bunds as set out in the approved plans for the development.

Treated contaminated soils may be reused on site under an appropriate Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice, Ref [15].

29.2 Disposal of Soils

Some soils will require removal from site and disposal to suitably licensed landfills. Different guidelines and charges will apply to different waste classifications. As waste producers, the Developer holds responsibilities under the various governing regulations, particularly the Waste Duty of Care Code of Practice under the Environmental Protection Act 1990, Ref [16].

The chemical analyses appended to this report can be used to inform the initial classification of the soils as either Hazardous or Non-Hazardous, and derive the appropriate EWC code, for offsite disposal or transfer. Waste Acceptance Criteria (WAC) testing may be needed for confirmation of the material's classification, and will be required to demonstrate an inert classification.

There are strict requirements in place for the accurate description of wastes using EWC codes and, therefore, it is essential that materials that would be given different descriptions (e.g. blacktop, made ground and natural soils), as well as those with different classifications, are carefully segregated during excavation and storage on site. This will also ensure the most cost effective disposal. Mixing these materials can give rise to significant difficulties in disposal and also substantially increase costs.

Soil arisings may be transferred to other development sites under a Materials Management Plan, where certain criteria are met, in accordance with the CL:AIRE Definition of Waste Code of Practice Ref [15].

All soils leaving site will need to be pre-treated. Waste minimisation by selective excavation is a recognised form of pre-treatment.

30 Discussion and Conclusions

The investigation and contamination testing carried out across the site to date suggests that the concentrations of contaminants present within the Topsoil, Made Ground and Natural Soils, do not exceed the Tier 1 Screening Values for the proposed development (Residential land use with homegrown produce consumption).

At this stage, in terms of their contaminant assessment, the topsoil on site is considered acceptable for re-use. In terms of an acceptable depth as a growing medium, it would be prudent to discuss this with your landscape contractors, as there may be specific requirements in terms of planting. At this stage, we would recommend a minimum 200-300mm.

It would also be prudent to put a topsoil management scheme in place, to protect the material during groundworks, and assess the nutrient/physical properties of the topsoil. A specialist contractor is recommended for this work.

The risk to the end users and other potential receptors, from the contamination encountered to date, is very low. As a precaution, however, the construction workers, should still adopt good site practices and the use of appropriate PPE should be sufficient to mitigate any risk. This report should be forwarded to the contractors for their health and safety appraisal.

Organic contaminants present in the soils, particularly PAH's and petroleum hydrocarbons, could affect plastic underground service pipes (such as the types used by water and gas supply companies). Guidance should be sought from the relevant companies regarding any proposed plant in the affected area. Many water supply companies now require higher specification pipe on contaminated sites, even following remediation.

As with any site, areas of contamination not identified during site investigation works may come to light in the course of redevelopment. Accordingly, a discovery strategy must be in place during the redevelopment to ensure that any

hitherto unknown contamination is identified and dealt with in an appropriate manner. Depending on the nature of any such contamination, it may prove necessary to reassess the remedial strategy for the site.

A formal remediation strategy and verification plan should be agreed with the regulatory authorities prior to commencement of any remedial works.

The existing monitoring wells on the site should be decommissioned, to prevent the upward migration of gas/downward migration of contamination to the groundwater.

31 General Guidance

Allowance should be made for experienced verification of any remedial works.

It may be that specific local requirements apply to this site, of which we are not aware at this time.

In general terms, the workforce and general public should be protected from contact with contaminated material. There is a range of relevant documents published by the Health and Safety Executive, and organisations such as CIRIA, and the BRE.

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Southern Testing
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ST Consult
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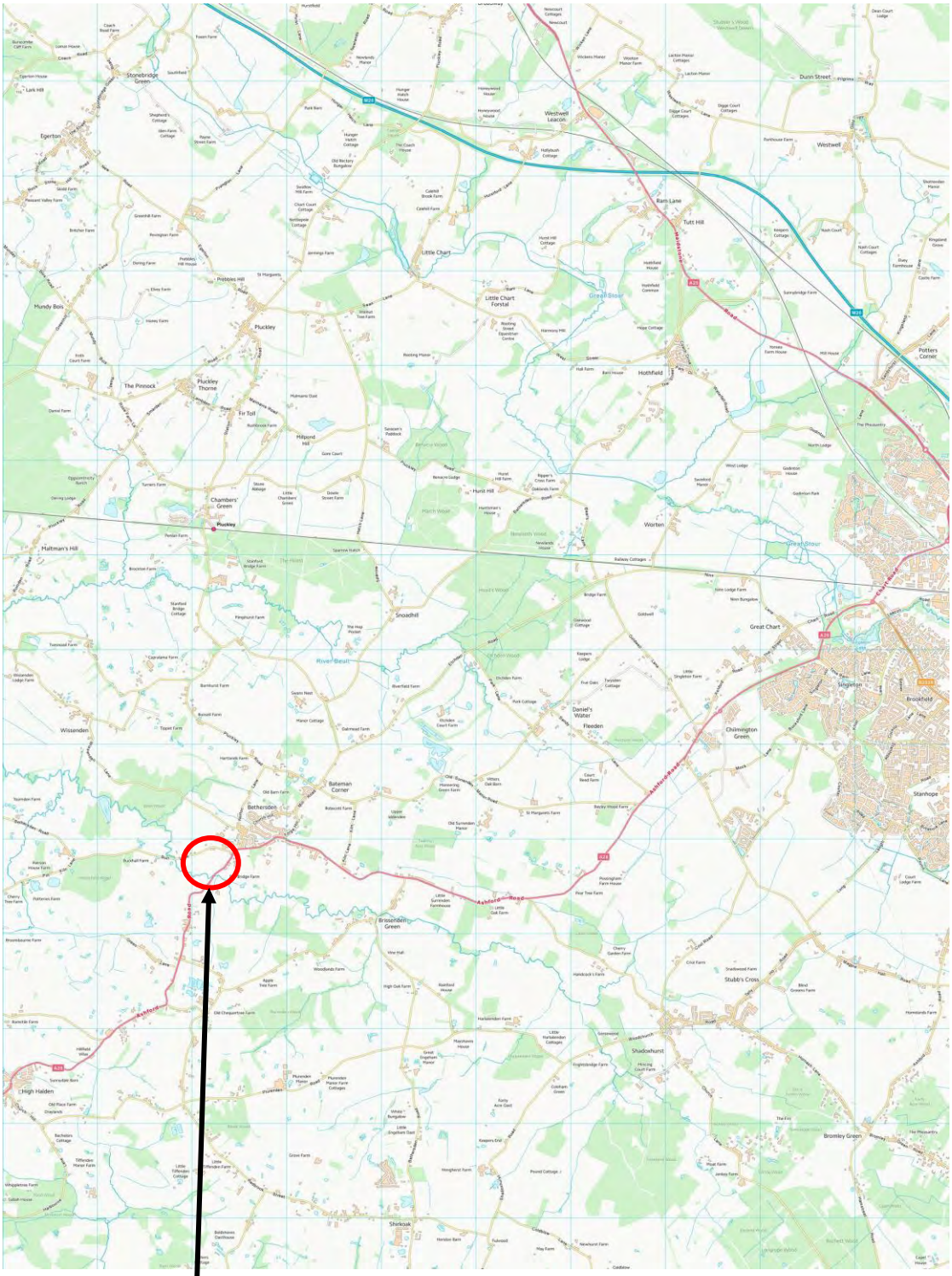
APPENDIX A

Site Plans and Exploratory Hole Logs

A

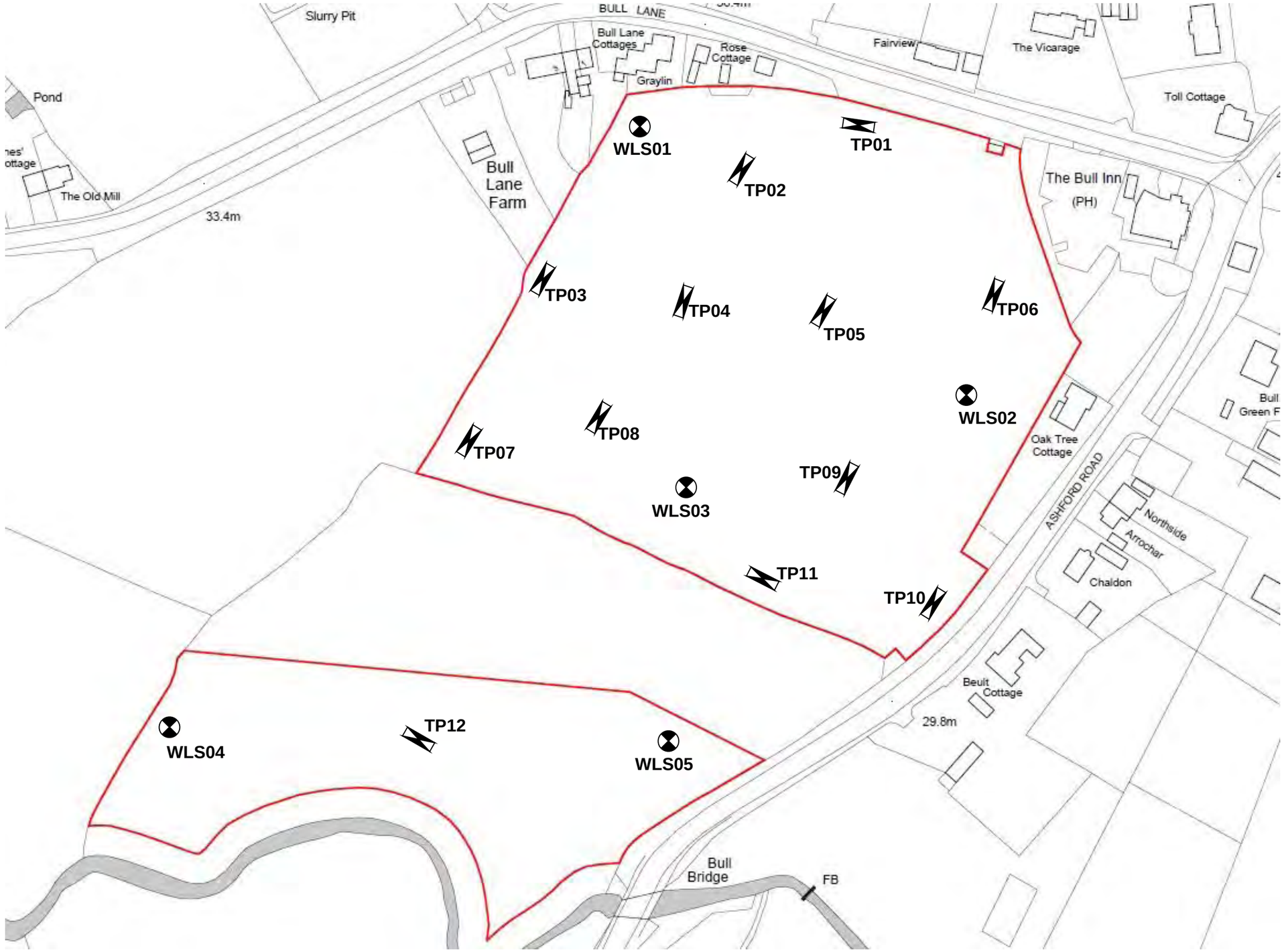


Site: Land off Bull Lane, Bethersden, Ashford, TN26 3LA	STL: J16261	Fig No: 1
Date: 7th July 2026	Site location plan	

Southern Testing Environmental & Geotechnical

Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8LU

ST Consult Environmental & Geotechnical



NB: Positions of Boreholes and/or Trial Pits are only indicative unless dimensioned

Site: Land off Bull Lane, Bethersden, Ashford, TN26 3LA	STL: J16261	Fig No: 2
Date: 7th July 2026	Site plan showing approximate exploratory hole locations.	

Southern Testing Environmental & Geotechnical
Southern Testing: Keeble House, Stuart Way, East Grinstead, West Sussex RH19 4QA
ST Consult: Twigden Barns, Brixworth Road, Creaton, Northampton NN6 8LU
ST Consult Environmental & Geotechnical

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	TP01
	07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592299 - N 139874	35.50	JB
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
					(0.30)			Very stiff brown silty CLAY with roots and rootlets.
	0.20	ES HP	UCS(kPa)=600	35.20			0.30	Stiff light grey mottled orange silty CLAY with rootlets.
					(0.70)			
	1.00	D		34.50			1.00	Very stiff brownish orange silty CLAY
					(0.50)			
	1.50	D ES HP	UCS(kPa)=450	34.00			1.50	Very stiff light grey mottled orange silty CLAY with black colouring.
					(1.20)			
	2.20	HP	UCS(kPa)=550					
	2.50	D						
				32.80			2.70	Extremely weak light grey and orange thinly laminated MUDSTONE with black colouring. WEALD CLAY FORMATION
					(0.30)			
	3.00	D HP	UCS(kPa)=600	32.50			3.00	Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.60	Remarks:				
Length:	2.10	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	TP02
	07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592268 - N 139863	34.79	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		34.49	(0.30)		0.30	Pale brown, silty, CLAY, with frequent rootlets. TOPSOIL
	0.50	ES		33.99	(0.50)		0.80	Firm to stiff, pale yellowish brown mottled grey, silty, CLAY, with occasional rootlets.
	1.00	D HP	UCS(kPa)=150					Firm to stiff, thinly laminated, brown to reddish brown mottled pale grey, silty, shaley, CLAY.
	1.50	D HP	UCS(kPa)=300	32.99	(1.00)		1.80	Extremely weak, thinly laminated, pale grey mottled orange brown, silty, MUDSTONE.
	2.00	D HP	UCS(kPa)=360					
	3.00	D HP	UCS(kPa)=330	31.79	(1.20)		3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry	Depth (m)	Date/Time	Remarks
Width:	0.50	Remarks:				
Length:	2.10	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP03
07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592206 - N 139827	33.75	SM
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		33.45	(0.30)		0.30	Pale grey, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
	0.50	ES		33.05	(0.40)		0.70	Stiff to very stiff, pale yellowish brown, silty, CLAY.
	1.00	D HP	UCS(kPa)=320		(1.00)			Firm to stiff, orange brown mottled pale grey, silty, CLAY.
	1.50	D HP	UCS(kPa)=250	32.05			1.70	Extremely weak, thinly laminated, brown mottled bluish grey, MUDSTONE.
	2.00	D HP	UCS(kPa)=340		(1.30)			
	3.00	D HP	UCS(kPa)=530	30.75			3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.45	Remarks:				
Length:	2.20	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP04
07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592250 - N 139815	33.47	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		33.17	(0.30)		0.30	Pale brown, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
	0.50	ES		32.77	(0.40)		0.70	Stiff to very stiff, yellowish brown, silty, CLAY.
	1.00	D HP	UCS(kPa)=440		(1.10)			Firm to stiff, thinly laminated, brown mottled bluish grey, silty, shaley, CLAY.
	1.50	D HP	UCS(kPa)=200					
	2.00	D HP	UCS(kPa)=220	31.67	(1.20)		1.80	Extremely weak, thinly laminated, brown mottled bluish grey, MUDSTONE.
	3.00	D HP	UCS(kPa)=600	30.47			3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.50	Remarks:				
Length:	2.40	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP05
07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592291 - N 139811	34.19	SM
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES			(0.35)			Pale brown, silty, sandy, gravelly, CLAY, with frequent rootlets. Gravel comprises medium to coarse, sub-angular, chalk, flint and ceramic. MADE GROUND
				33.84			0.35	
	0.50	ES			(0.25)			Stiff to very stiff, pale yellowish brown, silty, CLAY.
				33.59			0.60	
	1.00	D HP	UCS(kPa)=340		(0.80)			Stiff, brown mottled pale grey, silty, CLAY.
				32.79			1.40	
	1.50	D HP	UCS(kPa)=500					Extremely weak, thinly laminated, brown mottled bluish grey, shaley, MUDSTONE.
	2.00	D HP	UCS(kPa)=500		(1.60)			
	3.00	D HP	UCS(kPa)=600	31.19			3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	2.20	Remarks:				
Length:	0.45	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	TP06
	07/07/2026 - 08/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592348 - N 139812	36.56	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		36.26	(0.30)		0.30	Pale brown, silty, CLAY, with frequent rootlets. TOPSOIL
	0.50	ES HP	UCS(kPa)=600		(0.60)			Stiff, yellowish brown mottled pale grey, silty, CLAY, with frequent rootlets.
	1.00	D HP	UCS(kPa)=570	35.66	(0.90)		0.90	Firm, pale grey mottled orange brown, silty, CLAY.
	1.50	D HP	UCS(kPa)=320					
	2.00	D HP	UCS(kPa)=520	34.76	(1.20)		1.80	Extremely weak, thinly laminated, brown mottled bluish grey, silty, MUDSTONE.
	3.00	D HP	UCS(kPa)=440	33.56			3.00	Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.45	Remarks:				
Length:	2.20	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	TP07
	08/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592182 - N 139771	32.49	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
					(0.25)		0.25	Pale brown, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
	0.20	ES		32.24				
	0.50	D ES HP	UCS(kPa)=570		(0.55)		0.80	Stiff to very stiff, pale yellowish brown, silty, CLAY, with frequent rootlets.
				31.69				
	1.00	D HP	UCS(kPa)=200		(1.00)		1.80	Firm, orange brown mottled bluish grey, silty, friable CLAY.
	1.50	D HP	UCS(kPa)=260					
				30.69				
	2.00	D HP	UCS(kPa)=440		(0.70)		2.50	Stiff to very stiff, thinly laminated, pale orange brown mottled bluish grey, silty, CLAY.
				29.99				
					(0.50)		3.00	Very stiff, thinly laminated, orange brown to reddish brown mottled bluish grey, silty, CLAY.
	3.00	D HP	UCS(kPa)=500	29.49				Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	2.20	Remarks:				
Length:	0.45	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP08
08/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592217 - N 139775	32.56	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		32.31	(0.25)		0.25	Pale brown to pale grey, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
	0.50	D ES HP	UCS(kPa)=600	31.86	(0.45)		0.70	Stiff, pale yellowish brown, silty, CLAY, with frequent rootlets.
	1.00	D HP	UCS(kPa)=230					Firm to stiff, thinly laminated, orange brown mottled bluish grey, silty, friable CLAY.
	1.50	D HP	UCS(kPa)=200	30.76	(1.10)		1.80	Stiff to very stiff, thinly laminated, yellowish brown to reddish brown mottled bluish grey, silty, CLAY.
	2.00	D HP	UCS(kPa)=600	30.26	(0.50)		2.30	Extremely weak, yellowish brown to reddish brown mottled bluish grey, MUDSTONE.
	3.00	D HP	UCS(kPa)=600	29.56	(0.70)		3.00	Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.50	Remarks:				
Length:	2.20	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	TP09
	07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592304 - N 139759	33.53	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		33.23	(0.30)		0.30	Pale brown, silty, CLAY, with frequent rootlets. TOPSOIL
	0.50	ES		32.93	(0.30)		0.60	Stiff to very stiff, pale yellowish brown, silty, CLAY, with occasional rootlets.
	1.00	D HP	UCS(kPa)=210		(0.80)			Firm, thinly laminated, brown mottled bluish grey, silty, friable, CLAY.
	1.50	D HP	UCS(kPa)=400	32.13			1.40	Stiff, thinly laminated, brown mottled bluish grey, silty, CLAY, with frequent laminations of mudstone.
	2.50	D HP	UCS(kPa)=350		(1.60)			
	3.00	D HP	UCS(kPa)=600	30.53			3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.50	Remarks:				
Length:	2.30	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP10
08/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592311 - N 139724	31.71	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		31.41	(0.30)		0.30	Pale brown, silty, gravelly, CLAY, with frequent roots and rootlets. Gravel comprises fine to medium, sub-angular, chalk and flint. MADE GROUND
	0.50	ES		31.01	(0.40)		0.70	Stiff to very stiff, yellowish brown, silty, CLAY, with frequent rootlets.
	1.00	D HP	UCS(kPa)=600					Firm to stiff, orange brown to yellowish brown mottled pale grey, silty, CLAY, with occasional rootlets.
	1.50	D HP	UCS(kPa)=540	29.91	(1.10)		1.80	Yellowish brown mottled bluish grey, clayey, SILT, with frequent patches of bluish grey, clay.
	2.00	D HP	UCS(kPa)=600	29.51	(0.40)		2.20	Extremely weak, thinly laminated, orange brown to yellowish brown mottled bluish grey, MUDSTONE, with frequent bands of yellowish brown silt.
	3.00	D HP	UCS(kPa)=600	28.71	(0.80)		3.00	Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.55	Remarks:				
Length:	2.10	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP11
08/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592293 - N 139732	31.76	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		31.46	(0.30)		0.30	Pale brown, silty, gravelly, CLAY, with frequent rootlets. Gravel comprises fine to medium, sub-angular, chalk and flint. MADE GROUND
	0.50	D ES HP	UCS(kPa)=600	30.91	(0.55)		0.85	Stiff to very stiff, yellowish brown, silty, CLAY, with occasional rootlets.
	1.00	D HP	UCS(kPa)=260					Firm to stiff, orange brown to reddish brown mottled bluish grey, silty, CLAY.
	1.50	D HP	UCS(kPa)=300	29.96	(0.95)		1.80	
	2.00	D HP	UCS(kPa)=330	29.46	(0.50)		2.30	Firm to stiff, yellowish brown to pale grey, silty, CLAY, with frequent patches/bands of yellowish brown silt.
	3.00	D HP	UCS(kPa)=550	28.76	(0.70)		3.00	Extremely weak, thinly laminated, yellowish brown to pale grey, MUDSTONE, with frequent bands of yellowish brown silt.
								Pit terminated at 3.00m

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.50	Remarks:				
Length:	2.40	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult

Start - End Date:	Project ID:	Hole Type:	TP12
07/07/2026	J16261	TP	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592154 - N 139674	28.68	SM
Project Name:	Land of Bull Lane, Bethersden	Location:	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Water Strikes	Samples and Insitu Testing: Depth (m bgl)	Type	Results	Level (m AOD)	Thickness (m)	Legend	Depth (m bgl)	Stratum Description
	0.20	ES		28.48	(0.20)		0.20	Pale brown, silty, sandy, CLAY, with frequent rootlets. TOPSOIL
	1.00	D HP	UCS(kPa)=600		(1.10)			Firm to stiff, pale brown to yellowish brown, silty, CLAY.
	1.50	D ES HP	UCS(kPa)=260	27.38			1.30	Firm, orange brown mottled pale grey, silty, friable CLAY.
	2.00	D HP	UCS(kPa)=150		(1.70)			
	3.00	D HP	UCS(kPa)=160	25.68			3.00	Pit terminated at 3.00m

1 2 3 4

Pit Dimension (m)		Pit Stability:	1. Trial pit sides stable upon completion of excavation.	Water Strikes		
		Weather:	Clear & Dry.	Depth (m)	Date/Time	Remarks
Width:	0.45	Remarks:				
Length:	2.20	1. Trial pit dry upon completion of excavation. 2. Trial pit sides stable upon completion of excavation.				
Depth:	3.00					

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:09	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS01
	07/07/2026	J16261	WLS	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592234 - N 139872	34.86	MS
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Well	Water Strikes	Samples and Insitu Testing			Progress	Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type/FI	Results	Runs				
									TOPSOIL: Stiff light brown silty sandy CLAY.
							(0.40)		
						0.40	34.46		Stiff light grey and light brown mottled silty CLAY.
		0.50	D HP	UCS(kPa)=550					
							(0.60)		
		1.00	D HP SPT	UCS(kPa)=350 N=8 (1,1/2,1,2,3)		1.00	33.86		Stiff orange and grey mottled silty CLAY.
							(0.70)		
		1.50	HP	UCS(kPa)=600					
		1.60	D						
						1.70	33.16		Stiff orange mottled grey silty CLAY.
							(0.30)		
		2.00	D HP SPT	UCS(kPa)=500 N=26 (5,4/5,6,7,8)		2.00	32.86		Stiff orange brown/red silty CLAY with fissures.
		2.50	D HP	UCS(kPa)=600			(1.00)		
		3.00	HP SPT	UCS(kPa)=500 N=41 (6,7/10,10,12,9)		3.00	31.86		Stiff dark grey silty CLAY.
							(0.80)		
		3.50	D HP	UCS(kPa)=600					
		3.80	HP SPT	UCS(kPa)=600 N=50 (7,8/50 for 245mm)		3.80	31.06		End of Borehole at 3.80m

Remarks:

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS01
	07/07/2026	J16261	WLS	Sheet 1 of 1

Depth Related Hole Information

Top Depth (m)	Base Depth (m)	Hole Type	Start Date	End Date	Crew	Plant Used	Contractor	Logged By	Remarks
0.00	3.80	WLS			STL	Premier		MS	

Hole Diameter

Hole Diameter (mm)	Depth to Base (m)	Remarks

Casing Diameter

Casing Diameter (mm)	Depth to Base (m)	Remarks

Dynamic Sample Drill Run Information

Run No.	Top Depth (m)	Base Depth (m)	Duration	Hole Diameter (mm)	Sample Recovery (%)	Remarks

Project Specific Time Related Remarks

Date Time Start	Date Time End	Duration	Remarks

Drilling Progress by Time

Date Time	Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

SPT

Top Depth (m)	Test Type	Casing Depth (m)	Water Depth (m)	Self Weight Penetration (mm)	Reported Result (N Value)	Hammer Serial No.	Energy Ratio %	Remarks
1.00	S				N=8 (1,1/2,1,2,3)	110RP75	88	
2.00	S				N=26 (5,4/5,6,7,8)	110RP75	88	
3.00	S				N=41 (6,7/10,10,12,9)	110RP75	88	
3.80	S				N=50 (7,8/50 for 245mm)	110RP75	88	

Water Strikes and Details

Depth Strike (m)	Date Time	Depth Casing (m)	Depth Sealed (m)	Remarks	Time Elapsed (mins)	Water Depth (m)	Remarks

Installation Details

Distance	Point Ref.	Type	Top of Response Zone (m)	Base of Response Zone (m)	Pipe Ref.
3.80	1	SP			1

Pipe Construction

Pipe Reference	Depth Top (m)	Depth Base (m)	Diameter (mm)	Pipe Type
1	0.00	1.00	50	PLAIN
1	1.00	3.80	50	SLOTTED

Backfill Details

Depth Top	Depth Base	Material	Remarks
0.00	1.00	Bentonite	
1.00	3.80	Gravel Backfill	

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS02
	07/07/2026	J16261	WLS	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592342 - N 139787	35.25	MS
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Well	Water Strikes	Samples and Insitu Testing			Progress	Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type/FI	Results	Runs				
							(0.30)		TOPSOIL: Stiff light brown silty sandy CLAY.
						0.30	34.95		Stiff light grey and light brown mottled silty CLAY.
		0.50	D HP	UCS(kPa)=600			(0.70)		
		1.00	D HP SPT	UCS(kPa)=400 N=17 (3,3/4,4,4,5)		1.00	34.25		Stiff reddish orange mottled grey brownish grey silty CLAY.
		1.50	D HP	UCS(kPa)=600			(1.00)		
		2.00	HP SPT	UCS(kPa)=600 N=19 (4,4/4,5,5,5)		2.00	33.25		Stiff light brown mottled grey silty CLAY.
		2.20	D						
		2.50	HP	UCS(kPa)=600			(1.00)		
		2.70	D						
		3.00	D HP SPT	UCS(kPa)=450 N=36 (3,3/7,9,10,10)		3.00	32.25		Stiff dark grey mottled orange silty CLAY with fissures.
		3.50	HP	UCS(kPa)=400			(1.00)		
		3.70	D						
		4.00	HP SPT	UCS(kPa)=600 N=27 (4,4/6,6,7,8)		4.00	31.25		End of Borehole at 4.00m

Remarks:

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS02
	07/07/2026	J16261	WLS	Sheet 1 of 1

Depth Related Hole Information

Top Depth (m)	Base Depth (m)	Hole Type	Start Date	End Date	Crew	Plant Used	Contractor	Logged By	Remarks
0.00	4.00	WLS			STL	Premier		MS	

Hole Diameter

Hole Diameter (mm)	Depth to Base (m)	Remarks

Casing Diameter

Casing Diameter (mm)	Depth to Base (m)	Remarks

Dynamic Sample Drill Run Information

Run No.	Top Depth (m)	Base Depth (m)	Duration	Hole Diameter (mm)	Sample Recovery (%)	Remarks

Project Specific Time Related Remarks

Date Time Start	Date Time End	Duration	Remarks

Drilling Progress by Time

Date Time	Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

SPT

Top Depth (m)	Test Type	Casing Depth (m)	Water Depth (m)	Self Weight Penetration (mm)	Reported Result (N Value)	Hammer Serial No.	Energy Ratio %	Remarks
1.00	S				N=17 (3,3/4,4,4,5)	110RP75	88	
2.00	S				N=19 (4,4/4,5,5,5)	110RP75	88	
3.00	S				N=36 (3,3/7,9,10,10)	110RP75	88	
4.00	S				N=27 (4,4/6,6,7,8)	110RP75	88	

Water Strikes and Details

Depth Strike (m)	Date Time	Depth Casing (m)	Depth Sealed (m)	Remarks	Time Elapsed (mins)	Water Depth (m)	Remarks

Installation Details

Distance	Point Ref.	Type	Top of Response Zone (m)	Base of Response Zone (m)	Pipe Ref.
4.00	1	SP			1

Pipe Construction

Pipe Reference	Depth Top (m)	Depth Base (m)	Diameter (mm)	Pipe Type
1	0.00	1.00	50	PLAIN
1	1.00	4.00	50	SLOTTED

Backfill Details

Depth Top	Depth Base	Material	Remarks
0.00	1.00	Bentonite	
1.00	4.00	Gravel Backfill	

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS03
	07/07/2026	J16261	WLS	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592246 - N 139753	31.74	MS
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Well	Water Strikes	Samples and Insitu Testing			Progress	Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type/FI	Results	Runs				
							(0.30)		TOPSOIL: Stiff light brown silty sandy CLAY.
						0.30	31.44		Stiff light grey and light orange mottled silty CLAY.
		0.50	D HP	UCS(kPa)=600					
							(0.90)		
		1.00	D HP SPT	UCS(kPa)=600 N=13 (2,3/3,3,4,3)					
						1.20	30.54		Stiff brown orange mottled light grey silty CLAY.
		1.50	D HP	UCS(kPa)=600					
							(0.80)		
		2.00	HP SPT	UCS(kPa)=400 N=9 (2,2/2,2,2,3)		2.00	29.74		Stiff orange sandy gravelly CLAY. Sand is fine and medium. Gravel is fine and coarse mudstone.
		2.30	D						
							(1.00)		
		2.90	D						
		3.00	SPT	N=17 (2,3/2,4,5,6)		3.00	28.74		End of Borehole at 3.00m

Remarks:

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS03
	07/07/2026	J16261	WLS	Sheet 1 of 1

Depth Related Hole Information

Top Depth (m)	Base Depth (m)	Hole Type	Start Date	End Date	Crew	Plant Used	Contractor	Logged By	Remarks
0.00	3.00	WLS			STL	Premier		MS	

Hole Diameter

Hole Diameter (mm)	Depth to Base (m)	Remarks

Casing Diameter

Casing Diameter (mm)	Depth to Base (m)	Remarks

Dynamic Sample Drill Run Information

Run No.	Top Depth (m)	Base Depth (m)	Duration	Hole Diameter (mm)	Sample Recovery (%)	Remarks

Project Specific Time Related Remarks

Date Time Start	Date Time End	Duration	Remarks

Drilling Progress by Time

Date Time	Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

SPT

Top Depth (m)	Test Type	Casing Depth (m)	Water Depth (m)	Self Weight Penetration (mm)	Reported Result (N Value)	Hammer Serial No.	Energy Ratio %	Remarks
1.00	S				N=13 (2,3/3,3,4,3)	110RP75	88	
2.00	S				N=9 (2,2/2,2,2,3)	110RP75	88	
3.00	S				N=17 (2,3/2,4,5,6)	110RP75	88	

Water Strikes and Details

Depth Strike (m)	Date Time	Depth Casing (m)	Depth Sealed (m)	Remarks	Time Elapsed (mins)	Water Depth (m)	Remarks

Installation Details

Distance	Point Ref.	Type	Top of Response Zone (m)	Base of Response Zone (m)	Pipe Ref.
3.00	1	SP			1

Pipe Construction

Pipe Reference	Depth Top (m)	Depth Base (m)	Diameter (mm)	Pipe Type
1	0.00	1.00	50	PLAIN
1	1.00	3.00	50	SLOTTED

Backfill Details

Depth Top	Depth Base	Material	Remarks
0.00	1.00	Bentonite	
1.00	3.00	Gravel Backfill	

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS04
	07/07/2026	J16261	WLS	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592072 - N 139666	27.26	MS
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Well	Water Strikes	Samples and Insitu Testing			Progress	Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type/FI	Results	Runs				
							(0.20)		TOPSOIL: Stiff light brown silty sandy CLAY.
						0.20	27.06		Stiff light brown and light grey mottled silty CLAY with occasional roots.
		0.50	D HP	UCS(kPa)=450			(0.80)		
		1.00	D HP SPT	UCS(kPa)=600 N=14 (2,3/3,3,4,4)		1.00	26.26		Stiff light grey and orange silty CLAY.
		1.50	D				(0.80)		
		1.90	D			1.80	25.46		Stiff light grey and orange mottled black silty slightly sandy CLAY. Sand is fine.
		2.00	D HP SPT	UCS(kPa)=320 N=9 (2,2/2,2,2,3)					
		2.10	D				(0.90)		
		2.50	D HP	UCS(kPa)=250					
		2.70	D HP	UCS(kPa)=350		2.70	24.56		Stiff grey CLAY. *Sandy/gravelly band, ironstone band*
							(0.30)		
		3.00	D SPT	N=27 (2,3/4,5,8,10)		3.00	24.26		End of Borehole at 3.00m

Remarks:

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS04
	07/07/2026	J16261	WLS	Sheet 1 of 1

Depth Related Hole Information

Top Depth (m)	Base Depth (m)	Hole Type	Start Date	End Date	Crew	Plant Used	Contractor	Logged By	Remarks
0.00	3.00	WLS			STL	Premier		MS	

Hole Diameter

Hole Diameter (mm)	Depth to Base (m)	Remarks

Casing Diameter

Casing Diameter (mm)	Depth to Base (m)	Remarks

Dynamic Sample Drill Run Information

Run No.	Top Depth (m)	Base Depth (m)	Duration	Hole Diameter (mm)	Sample Recovery (%)	Remarks

Project Specific Time Related Remarks

Date Time Start	Date Time End	Duration	Remarks

Drilling Progress by Time

Date Time	Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

SPT

Top Depth (m)	Test Type	Casing Depth (m)	Water Depth (m)	Self Weight Penetration (mm)	Reported Result (N Value)	Hammer Serial No.	Energy Ratio %	Remarks
1.00	S				N=14 (2,3/3,3,4,4)	110RP75	88	
2.00	S				N=9 (2,2/2,2,2,3)	110RP75	88	
3.00	S				N=27 (2,3/4,5,8,10)	110RP75	88	

Water Strikes and Details

Depth Strike (m)	Date Time	Depth Casing (m)	Depth Sealed (m)	Remarks	Time Elapsed (mins)	Water Depth (m)	Remarks

Installation Details

Distance	Point Ref.	Type	Top of Response Zone (m)	Base of Response Zone (m)	Pipe Ref.
3.00	1	SP			1

Pipe Construction

Pipe Reference	Depth Top (m)	Depth Base (m)	Diameter (mm)	Pipe Type
1	0.00	1.00	50	PLAIN
1	1.00	3.00	50	SLOTTED

Backfill Details

Depth Top	Depth Base	Material	Remarks
0.00	1.00	Bentonite	
1.00	3.00	Gravel Backfill	

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS05
	07/07/2026	J16261	WLS	Sheet 1 of 1

Client:	Esquire Developments Limited.	Co-ordinates:	Level (m AOD)	Logger:
		E 592240 - N 139669	28.58	MS
Project Name:	Land of Bull Lane, Bethersden	**Location:**	Bull Lane, Bethersden, Ashford, Kent, TN26 3LA	

Well	Water Strikes	Samples and Insitu Testing			Progress	Depth (m)	Level (m AOD)	Legend	Stratum Description
		Depth (m)	Type/FI	Results	Runs				
							(0.20)		TOPSOIL: Stiff light brown silty sandy CLAY.
						0.20	28.38		Firm to stiff light grey and light brown mottled silty CLAY.
		0.50	HP	UCS(kPa)=450					
							(0.80)		
		1.00	HP	UCS(kPa)=600		1.00	27.58		Firm grey and reddish brown mottled dark red/blue silty CLAY.
			SPT	N=16 (2,2/4,4,3,5)					
		1.50	HP	UCS(kPa)=300			(1.00)		
		2.00	HP	UCS(kPa)=500		2.00	26.58		Firm brown silty CLAY.
			SPT	N=11 (3,2/3,3,2,3)					
							(0.50)		
		2.50	HP	UCS(kPa)=350		2.50	26.08		Firm to stiff greenish brown mottled black silty CLAY.
							(0.50)		
		3.00	HP	UCS(kPa)=400		3.00	25.58		End of Borehole at 3.00m
			SPT	N=20 (3,6/5,4,5,6)					

Remarks:

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

Southern Testing ST Consult	Start - End Date:	Project ID:	Hole Type:	WLS05
	07/07/2026	J16261	WLS	Sheet 1 of 1

Depth Related Hole Information

Top Depth (m)	Base Depth (m)	Hole Type	Start Date	End Date	Crew	Plant Used	Contractor	Logged By	Remarks
0.00	3.00	WLS			STL	Premier		MS	

Hole Diameter

Hole Diameter (mm)	Depth to Base (m)	Remarks

Casing Diameter

Casing Diameter (mm)	Depth to Base (m)	Remarks

Dynamic Sample Drill Run Information

Run No.	Top Depth (m)	Base Depth (m)	Duration	Hole Diameter (mm)	Sample Recovery (%)	Remarks

Project Specific Time Related Remarks

Date Time Start	Date Time End	Duration	Remarks

Drilling Progress by Time

Date Time	Depth (m)	Casing Depth (m)	Water Depth (m)	Remarks

SPT

Top Depth (m)	Test Type	Casing Depth (m)	Water Depth (m)	Self Weight Penetration (mm)	Reported Result (N Value)	Hammer Serial No.	Energy Ratio %	Remarks
1.00	S				N=16 (2,2/4,4,3,5)	110RP75	88	
2.00	S				N=11 (3,2/3,3,2,3)	110RP75	88	
3.00	S				N=20 (3,6/5,4,5,6)	110RP75	88	

Water Strikes and Details

Depth Strike (m)	Date Time	Depth Casing (m)	Depth Sealed (m)	Remarks	Time Elapsed (mins)	Water Depth (m)	Remarks

Installation Details

Distance	Point Ref.	Type	Top of Response Zone (m)	Base of Response Zone (m)	Pipe Ref.
3.00	1	SP			1

Pipe Construction

Pipe Reference	Depth Top (m)	Depth Base (m)	Diameter (mm)	Pipe Type
1	0.00	1.00	50	PLAIN
1	1.00	3.00	50	SLOTTED

Backfill Details

Depth Top	Depth Base	Material	Remarks
0.00	1.00	Bentonite	
1.00	3.00	Gravel Backfill	

Status:	FINAL	Log Print Date and Time:	21/09/2026 11:10	Log Approved By:	JNR

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Key to Exploratory Hole Logs, Plans and Sections

Backfill Symbols		Pipe Symbols		Principal Soil Types		Principal Rock Types		Drilling Records	
Arisings		Plain Pipe		Topsoil		Mudstone		Water Strike	
Concrete		Slotted Pipe		Made Ground		Claystone		Depth Water Rose	
Blacktop		Piezometer		Clay		Siltstone		Total Core Recovery (%) [TCR]	
Bentonite		Piezometer Tip		Silt		Sandstone		Solid Core Recovery (%) [SCR]	
Gravel Filter		Filter Tip		Sand		Limestone		Rock Quality Index (%) RQD]	
Sand Filter		Extensometer		Gravel		Chalk		Fracture Index (fractures / m) [FI]	
		Inclinometers		Peat					

All soil and rock descriptions are in general accordance with BS5930 2015, BS EN ISO 14688-1:2002+A1:2013 and BS EN ISO 14689-1:2003. Chalk descriptions are also based on CIRIA C574 and "Logging the Chalk – R.N. Mortimer 2015". The Geology Code is only provided where a positive identification of the sample strata has been made.

Location / Method Identifiers	
BH	Borehole (undefined)
CP	Cable Percussive
RC	Rotary Core
RO	Rotary Open Hole
ODC	Rotary Odex/Symmetrix drilling cased
CP+RC	Cable Percussive to Rotary Core
SNC	Sonic
CFA	Continuous Flight Auger
FA	Flight Auger
VC	Vibro Core
WLS+RC	Windowless (Dynamic) Sampler to Rotary Core
WLS	Windowless Sampler
WS	Window Sampler
HA	Hand Auger
C	Road / Pavement Core
IP	Inspection Pit (Hand Excavation)
TP	Trial Pit (Machine Excavated)
OP	Observation Pit (Supported Excavation Hand or Machine)

In-situ Test Location / Method	
DP	Dynamic Probe
CPT	Cone Penetration Test
CBR	In-situ CBR Test
DCP	CBR using Dynamic Cone Penetrometer
CBRT	CBR using TRL Probe
PB	Plate Bearing Test
SPT (S)	Standard Penetration Test (Split Barrel Sampler)
SPT (C)	Standard Penetration Test (Solid Cone)
N	SPT Result
-/-	Blows/Penetration (mm) after seating drive
-*/-	Total Blows / Penetration (mm)
( )	Extrapolated Value
PPT	Perth Penetration (In-House Method - Equivalent N Value)
HP / UCS	Strength from Hand Penetrometer (kN/m^2)
IVN	Strength from Hand Vane ((kN/m^2) P = peak, R = residual
PID	Photo Ionisation Detector (ppm)
MEXE	Mexi-Cone CBR (%)

Samples / Test Type	
B	Bulk Sample
BLK	Block Sample
C	Core Sample
CBRS	CBR Mould Sample
D	Small Disturbed Sample
ES	Environmental Sample (Soil)
EW	Environmental Sample (Water)
GS	Environmental Sample (Gas)

Samples / Test Type	
SPTLS	Standard Penetration Test Split Barrel Sample
TW	Thin Wall Push In Sample (e.g. Shelby Sampler)
U	Undisturbed Open Drive Sample (blows to take)
UT	Thin Wall Undisturbed Open Drive Sample (blows to take)
W	Water Sample (Geotechnical)
SP	Sample from Stockpile
P	Piston Sample
AMAL	Amalgamated Sample

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APPENDIX B

Field Sampling and In-Situ Test Methods and Results

B

Soil and Rock Descriptions

All soil and rock descriptions are in general accordance with BS5930 Ref [4].

Anthropogenic soils ('made ground' or 'fill') describe materials which have been placed by man and can be divided into those composed of reworked natural soils and those composed of or containing man-made materials. 'Fill' is used to describe material placed in a controlled manner and 'made ground' is used to describe materials placed without strict engineering control.

The classification of materials such as topsoil is based on visual description only and should not be interpreted to mean that the material complies with criteria used in BS 3882 Ref [17].

The geology code is only provided on logs where a positive identification of the sample strata has been made.

Trial Pits and Trenches

Trial pits and trenches are unsupported excavations, mechanically excavated by machine to the required depth to enable visual examination, in situ testing and sampling as required from outside the excavation.

Dynamic Sampling - Window or Windowless

Window sampling is carried out by driving hollow steel tubes incorporating a longitudinal access slot (window) and a cutting shoe into the ground using a percussive 'breaker'. This enables recovery of a continuous soil sample for examination and sub-sampling.

Windowless samplers are designed for taking disturbed, continuous soil samples to depths up to 10 metres (depending on ground conditions). The samplers comprise steel tubes of about 50-100mm diameter with a rigid plastic liner (no window) and are driven into the ground with a sliding hammer mounted on a tracked purpose-designed soil sampling rig. After driving and extracting the sampler from the ground, the plastic liner is extracted together with the enclosed soil sample. The sample can then either be extracted, split and sub-sampled or plastic end caps may be fitted, the tube labelled and transported for future examination and sub-sampling.

Soil samples are disturbed by the driving process with both techniques and can be regarded as being between Class 5 up to Class 3 samples at best (in favourable ground).

The major advantage of using windowless samplers is that the plastic liner greatly reduces the possibility of cross-contamination between successive samples.

An equivalent in-situ test to the Standard Penetration Test can be carried out with the windowless sampler rig.

Standard Penetration Test (SPT)

The Standard Penetration Test (SPT) is specified in BS EN ISO 22476-3 Ref [18]. In this test, an open-ended tube is driven into the ground by blows from a free-falling hammer (with specified sizes, weights and distances).

The tube is seated by driving to a penetration of 150mm, or by 25 blows, whichever occurs first. It is then driven for a maximum of a further 300mm and the number of blows is termed the penetration resistance (N). If 300mm penetration cannot be achieved in 50 blows, the test drive is terminated and penetration depth is recorded.

When testing in gravels, a conical end piece is attached to the tube. The test is then called an SPT(C).

A classification of relative density descriptions as used on borehole logs, based upon uncorrected SPT N values, is given within BS5930 Ref [4] and set out as follows:

Classification based on uncorrected SPT N Value	Term
0 - 4	Very Loose
4 - 10	Loose
10 – 30	Medium Dense
30 – 50	Dense
Over 50	Very Dense

Hand Penetrometer Test

The handheld soil penetrometer consists of a spring loaded and calibrated plunger which is forced into cohesive soil. A reading of unconfined compression strength (equal to twice cohesion) is given on a calibrated scale. The average of a set of three readings shall be recorded.

In common with other hand methods of strength assessment it does not give an accurate indication of bearing capacity in stiff or fissured soils, because of the small test area.

Dynamic Cone Penetrometer (DCP) Test - TRL Method

The Dynamic Cone Penetrometer is a hand held instrument which can be used for the assessment of the in situ strength of existing flexible pavements constructed with unbound materials. Where the pavement layers have different strengths, the boundaries between them can be identified and the thickness of each layer determined.

The test is undertaken to the methodology outlined within TRL technical Information Note, but involves an 8 Kg hammer dropping through a height of 575mm and a 60° cone having a maximum diameter of 20mm. The resulting penetration of the rod is measured and the number of blows recorded for a penetration of about 10mm. After the test the DCP is carefully withdrawn.

A plot of the cumulative number of blows versus depth penetrated is drawn. This plot usually takes the form of a series of straight lines, the slopes of which are measured and expressed as penetration in mm per blow. The CBR Value is calculated from the mm/blow using a relationship developed by the Transport Research Laboratory Ref [19].

Disturbed Samples

Disturbed samples were taken from exploratory holes in general accordance with BS 5930 [4] and BS EN ISO 22475-1 Ref [20] as required and stored in appropriately labelled containers. Details of the type, size and depth of sample will be recorded within the exploratory hole record. Such samples can be regarded as being between Class 5 up to Class 3 quality depending upon their method of sampling.

Environmental Samples

Environmental samples were taken from the boreholes at regular intervals in the made ground and natural soils as indicated on the exploratory hole logs. The sampling strategy was in general accordance with BS10175 Ref [5] and BS ISO 18400 Refs [21], [22], [23], [24] & [25].

These samples were collected and stored in glass jars or plastic pots and transferred to the laboratory in cool boxes as appropriate to the proposed laboratory testing.

Monitoring Well

A groundwater and/or ground gas monitoring well consists of a perforated pipe, which is installed in the ground. The standpipe is typically 50mm nominal in diameter and is installed in a lined borehole. It is perforated from the base with a sand/gravel surround through the soil horizon of interest to an appropriate depth below ground level. Above this there is a bentonite seal with solid pipework and is provided with an end cap or a gas valve at the top as appropriate.

Gas monitoring is carried out via the gas tap. Water sampling/purging can be undertaken by removing the gas tap and bung.

The well is usually completed at the surface with a flush cast iron cover or raised lockable cover.

Groundwater Monitoring – Dip Meter

The dip meter is used to measure standing water levels within boreholes. The probe is lowered into the borehole until the meter detects the groundwater with an audible ‘beep’. The level is then read from the tape.

Soakage Tests (after BRE DG365 2016)

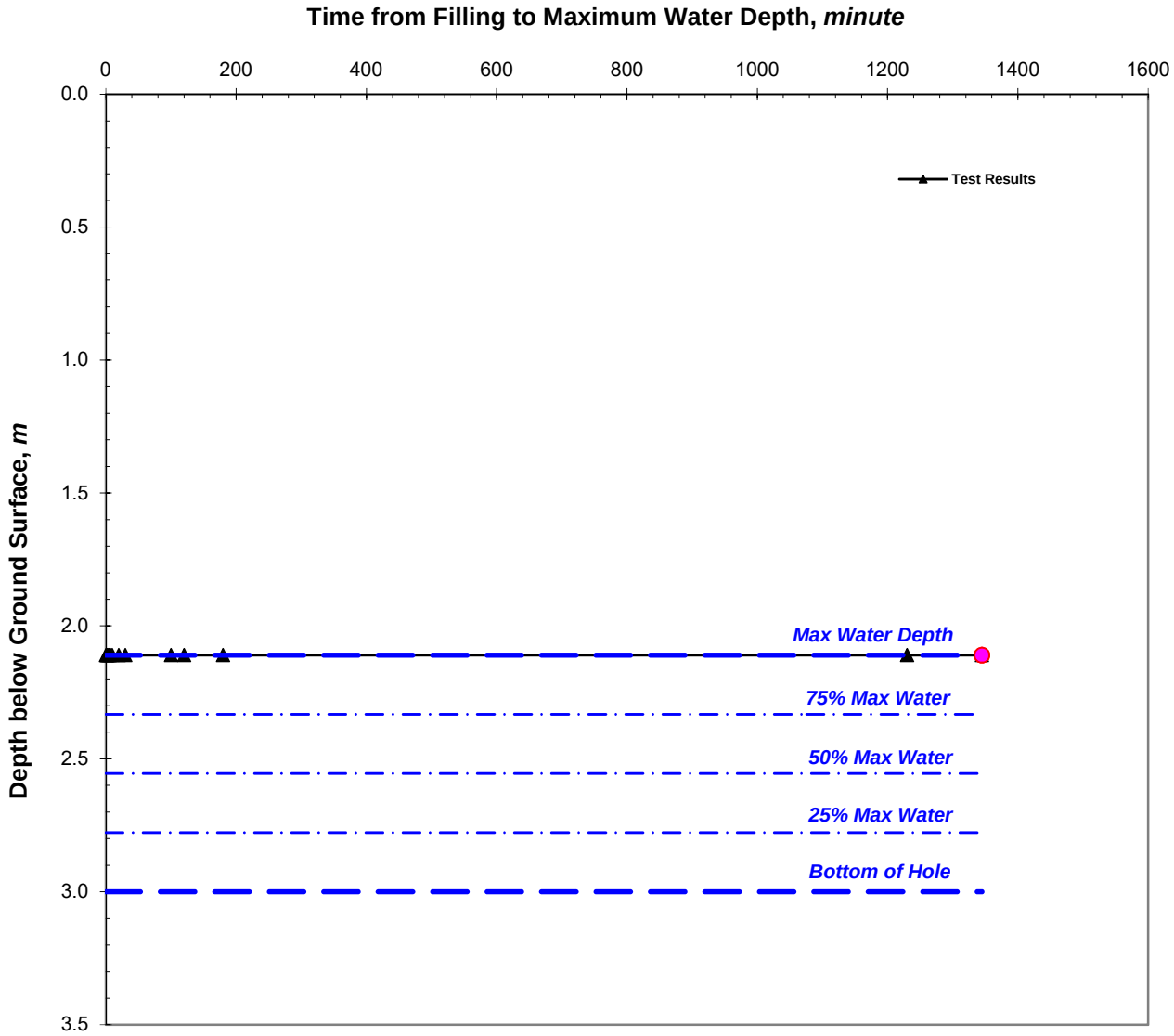
The BRE DG365 Ref [8] paper on soakaway design allows for the design of trench soakaways as well as traditional square and circular soakaways.

The test to measure the soil infiltration rate is carried out in pits which are excavated to the full depth of the proposed soakaway. The trial pits are filled and allowed to drain to empty or near empty, three times, on the same day or on consecutive days. Water levels are recorded against time. Where the sides are unstable the pit should be filled with granular material to provide stability during the test.

Calculated soakage rates are expressed as l/m²/minute, which is a convenient rate to use. The BRE use a unit of m/sec, which is the value in l/m²/minute divided by 60,000.

BRE Digest DG365 Soakage Test

Test Hole No: TP06
Test No: Test No 1 (Initial)



Pit Length, m	2.200	Depth to Water at Start of Test, ***m***	2.110
Pit Width, m	0.450	Max Water Dropdown during Test, ***m***	0.000
Depth to Pit Base, m	3.000	Total Soakage Test Time, ***min***	1345.0
Depth to Top of Permeable Soils, ***m***		Mean Internal Discharge Area, m^2	5.707
Depth to Groundwater Surface, ***m***		Discharge Rate, ***litre/min***	0.000
Depth to Top of Granular Fill, ***m***		Soakage Rate, ***litre/m²/min***	**0.0000**
Voids Assumed for Granular Fill, %	100%	BRE Soil Infiltration Rate, ***m/sec***	**0.00E+00**

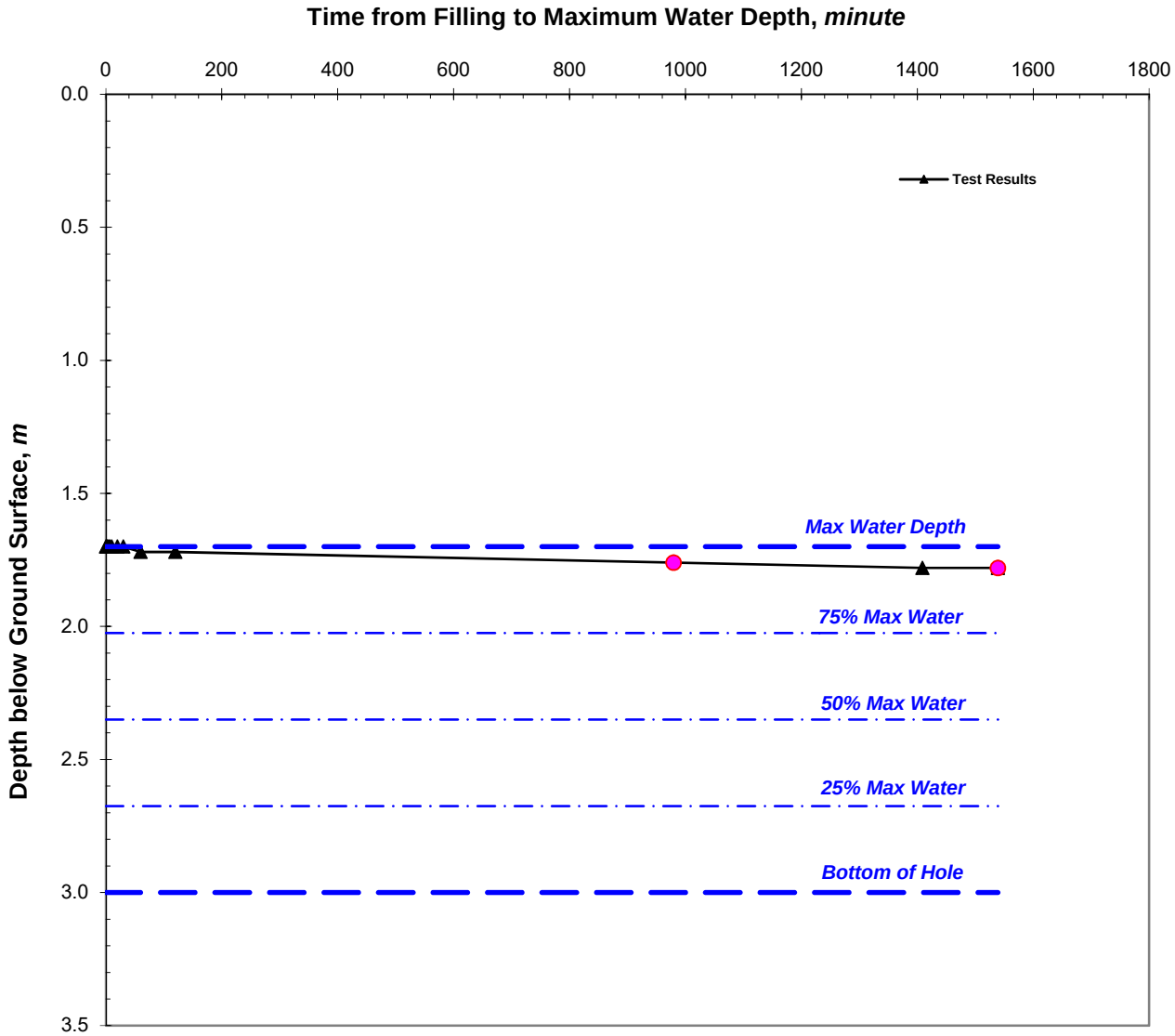
Comments:

Water level did not fall to 75% max water depth, calculations were based on actual fall of water level achieved.
Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	Esquire Developments Ltd.	**Job No:**	J16261	**Test Date:**	07/Jul/2026		
Site:	Land off Bull Lane, Bethersden, Ashford, TN	**Tested By:**	GC & OS	**Engineer:**	SM	**Fig.**	**S1**

BRE Digest DG365 Soakage Test

Test Hole No: TP12
Test No: Test No 1 (Initial)



Pit Length, m	2.200	Depth to Water at Start of Test, ***m***	1.700
Pit Width, m	0.450	Max Water Dropdown during Test, ***m***	0.080
Depth to Pit Base, m	3.000	Total Soakage Test Time, ***min***	1539.0
Depth to Top of Permeable Soils, ***m***		Mean Internal Discharge Area, m^2	7.509
Depth to Groundwater Surface, ***m***		Discharge Rate, ***litre/min***	0.035
Depth to Top of Granular Fill, ***m***		Soakage Rate, ***litre/m²/min***	**0.0047**
Voids Assumed for Granular Fill, %	100%	BRE Soil Infiltration Rate, ***m/sec***	**7.85E-08**

Comments:

Water level did not fall to 75% max water depth, calculations were based on actual fall of water level achieved.
Result not compliant with BRE365 requirement since water did not fall to 25% max water depth.

Client:	Esquire Developments Ltd.	**Job No:**	J16261	**Test Date:**	07/Jul/2026		
Site:	Land off Bull Lane, Bethersden, Ashford, TN	**Tested By:**	GC & OS	**Engineer:**	SM	**Fig.**	**S2**

Summary Sheet

Results of BRE Digest DG365 Soakage Tests

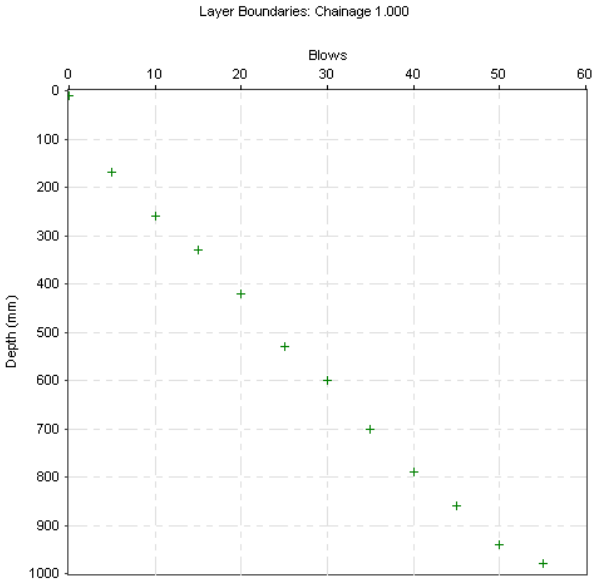
Site :	Land off Bull Lane, Bethersden, Ashford, TN26 3	**Job No :**	J16261
Client :	Esquire Developments Ltd.	**O S Reference :**	
Tested By :	GC & OS	**Engineer:** SM	**Test Date :** 07/Jul/2026

Hole No	Test No	Hole Depth *m*	Soakage Rate for Each Test *litre/m² /min*	Soakage Rate for Each Hole *litre/m² /min*	*m/sec*	Water Level at Finish of Test	Remarks
TP06	No 1	3.00	0.0000	0.0000	0.00E+0	Water level did not fall during test.	
TP12	No 1	3.00	0.0047	0.0047	7.85E-8	Pit was not emptied; Non compliant value was calculated.	
Mean Value of All Calculated Soakage Rates :				**0.0024** *litre/m² /min*	**3.93E-8** *m/sec*		

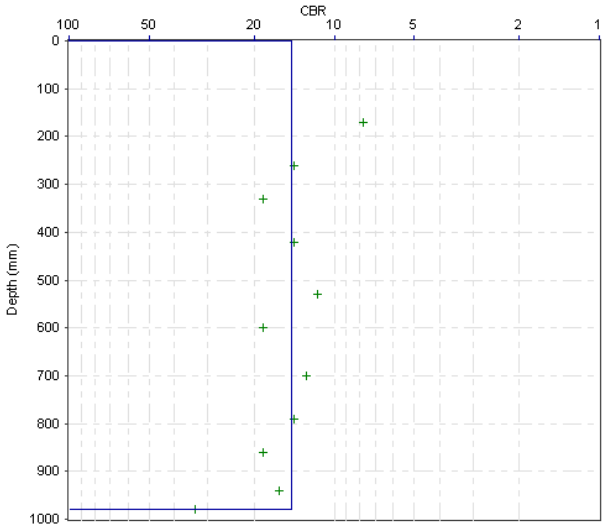
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	1.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	17.64	15	980	980

CBR Relationship:

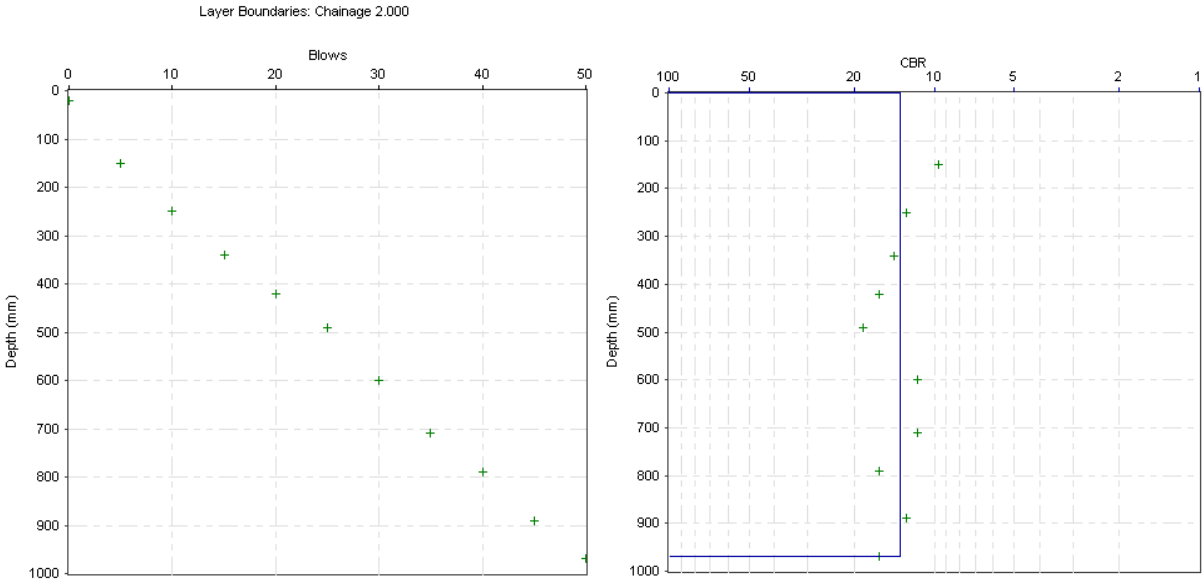
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	2.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 4	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart

CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	19.00	13	970	970

CBR Relationship:

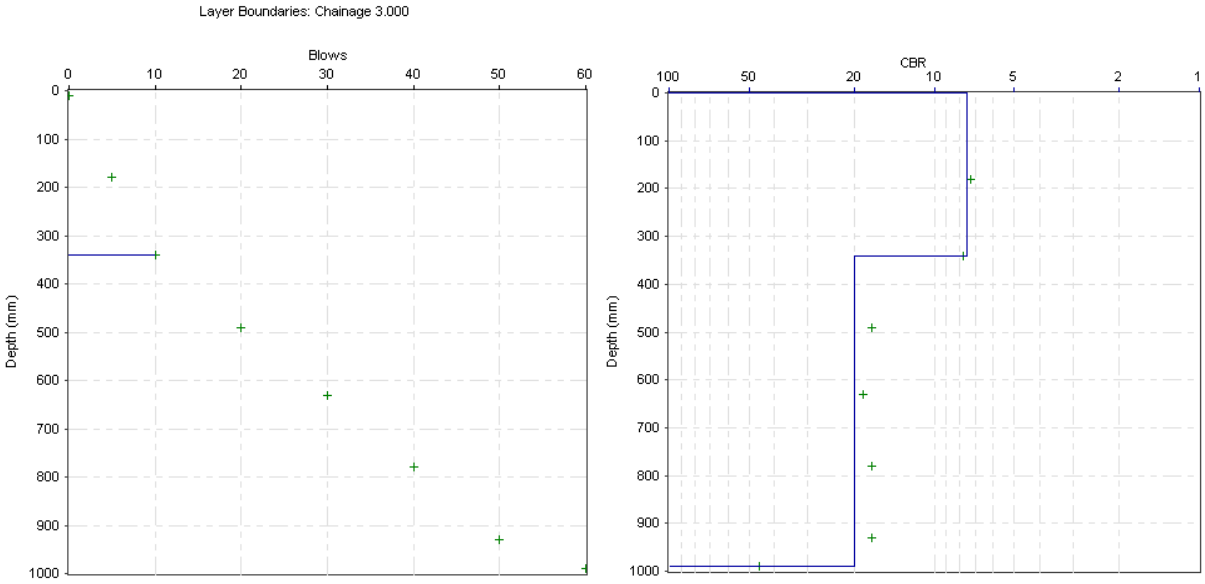
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	3.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 5	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart

CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	33.00	7	340	340
2	13.00	20	650	990

CBR Relationship:

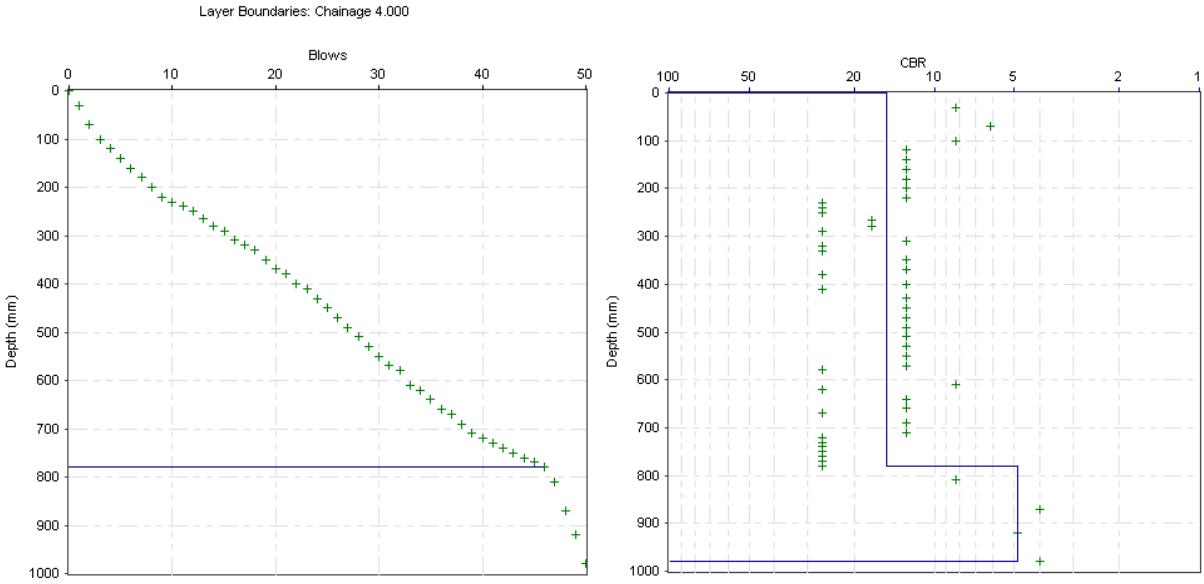
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	4.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 6	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart

CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	16.96	15	780	780
2	50.00	5	200	980

CBR Relationship:

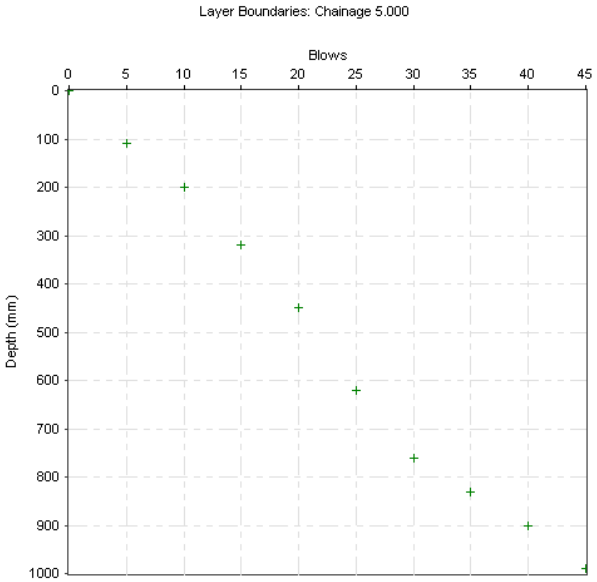
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

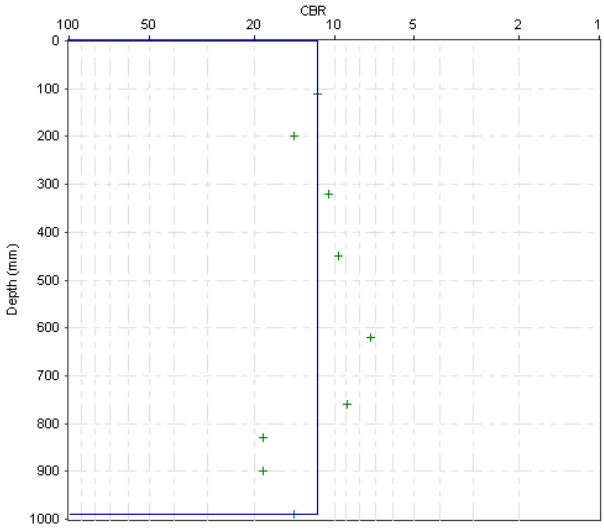
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	5.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	22.00	12	990	990

CBR Relationship:

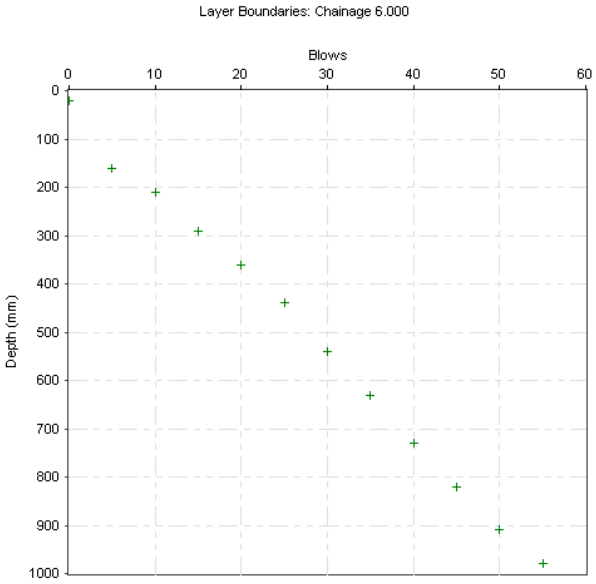
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

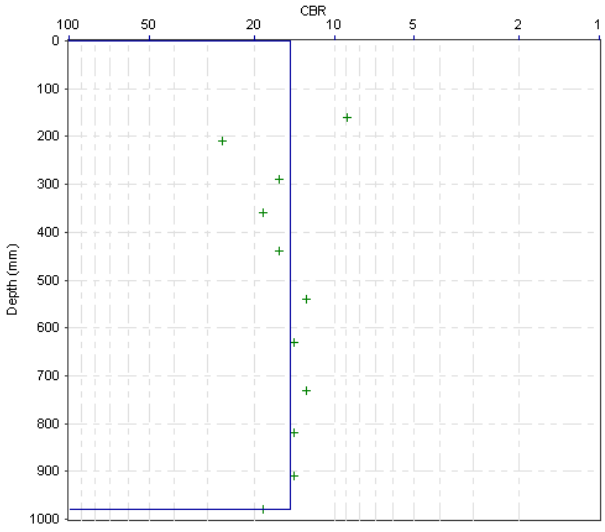
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	6.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	17.45	15	980	980

CBR Relationship:

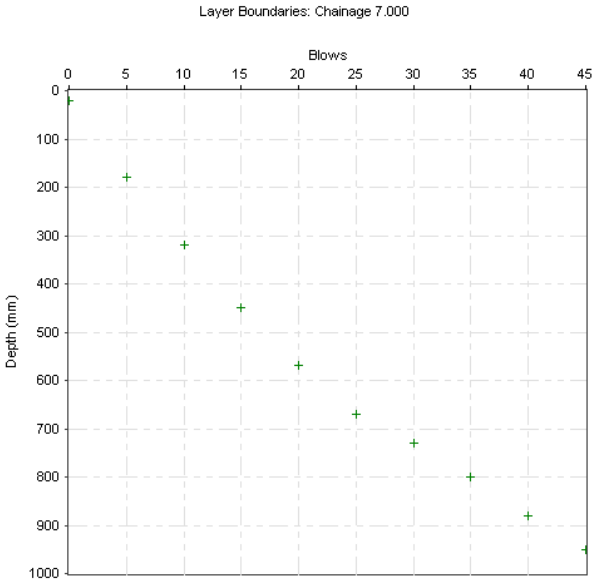
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

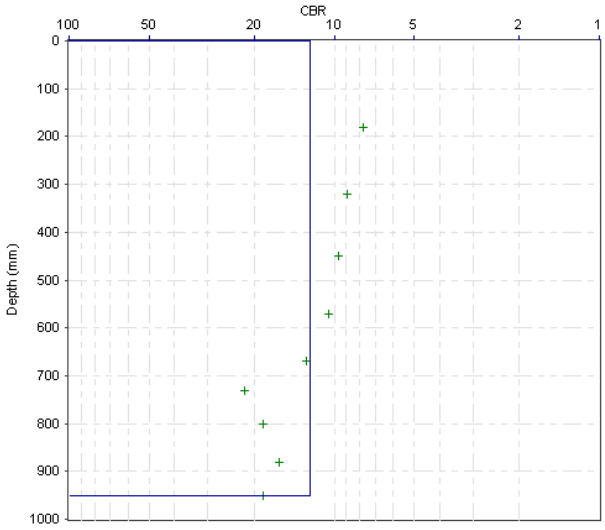
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	7.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	20.67	12	950	950

CBR Relationship:

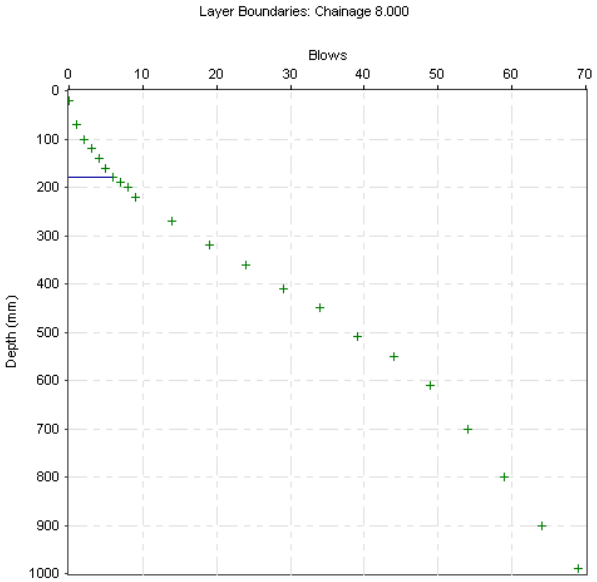
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

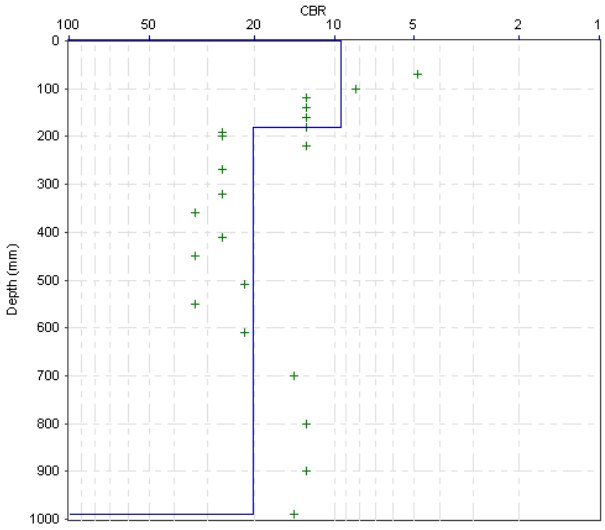
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	8.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	26.67	9	180	180
2	12.86	20	810	990

CBR Relationship:

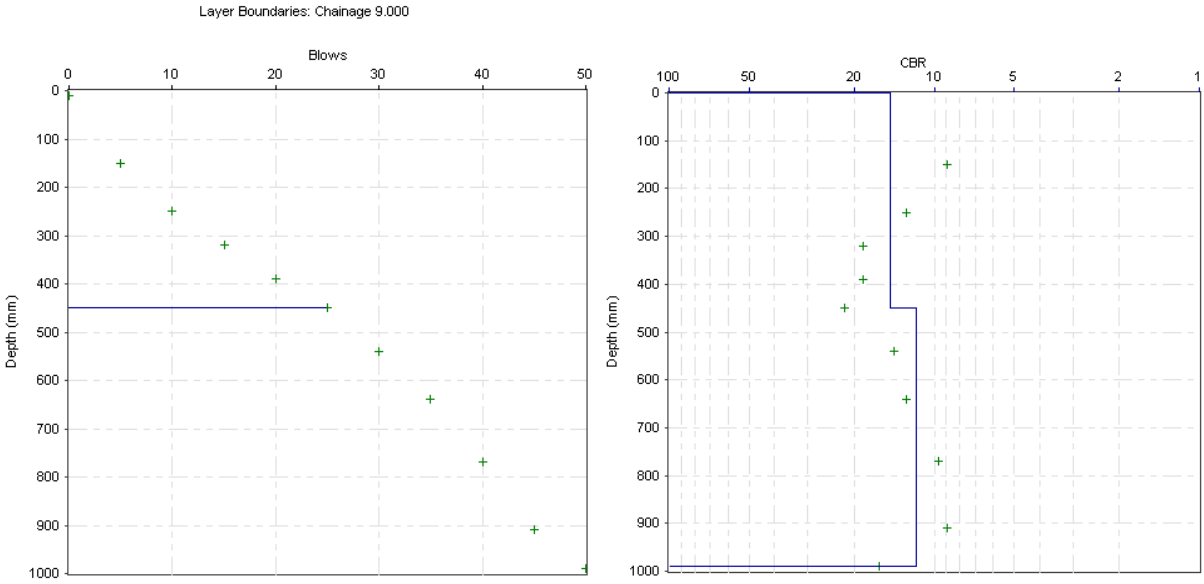
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	9.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart

CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	17.60	15	450	450
2	21.60	12	540	990

CBR Relationship:

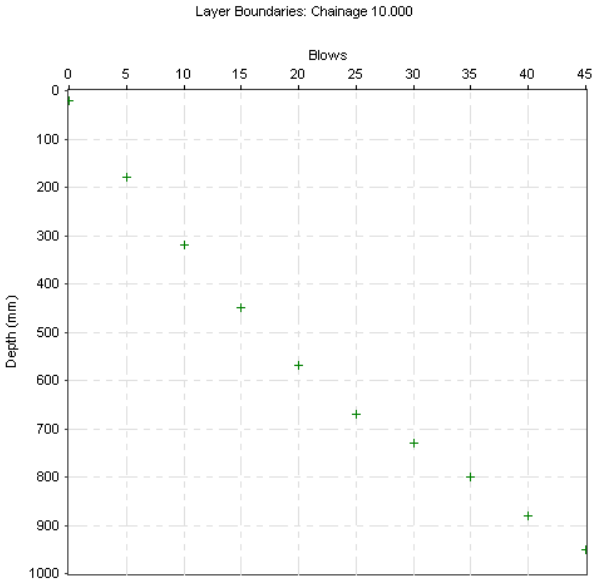
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

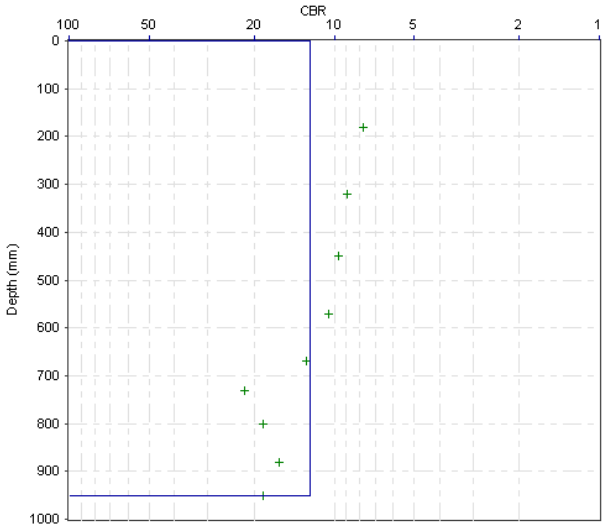
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	10.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	20.67	12	950	950

CBR Relationship:

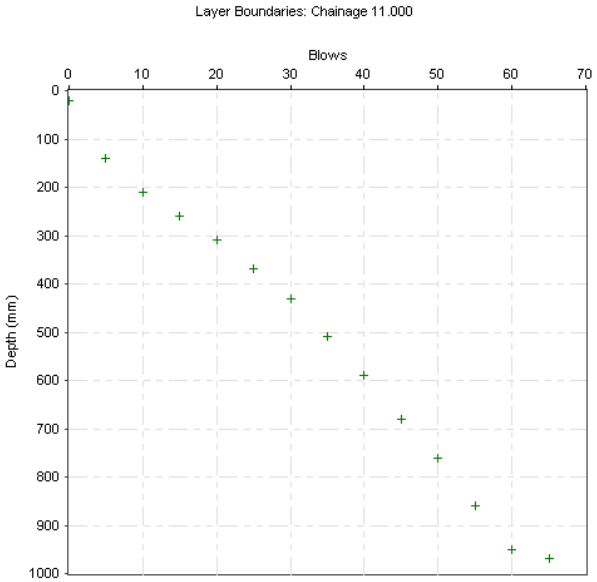
TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

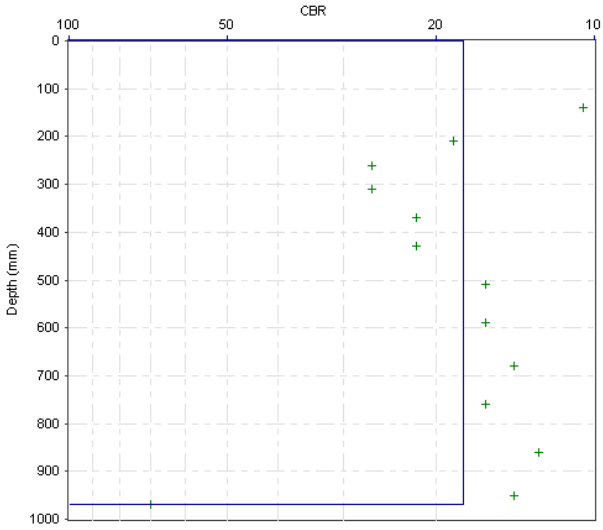
DCP Layer Strength Analysis Report

Project Name: Bull lane DCP's

Chainage (km):	11.000	Surface Type:	Unpaved
Direction:		Thickness (mm):	0
Location/Offset:	Lane 1	Base Type:	
Cone Angle:	60 degrees	Thickness (mm):	
Zero Error (mm):	0	Surface Moisture:	Unknown
Test Date:	08/07/2026	Moisture adjustment factor:	Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	14.62	18	970	970

CBR Relationship:

TRL equation: $\log_{10}(CBR) = 2.48 - 1.057 \times \log_{10}(Strength)$

Report produced by .....

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:	110RP75
Test Date:	18/07/2025
Report Date:	18/07/2025
File Name:	110RP5.spt
Test Operator:	BOB

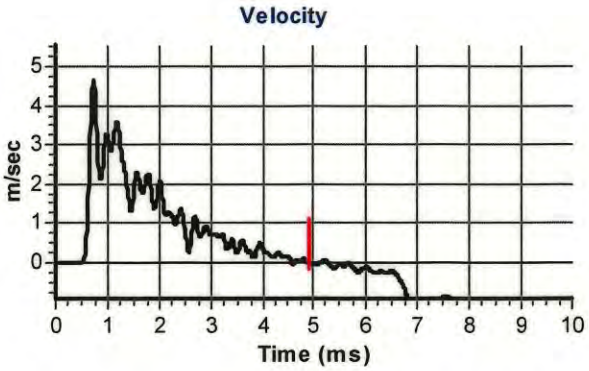
Instrumented Rod Data

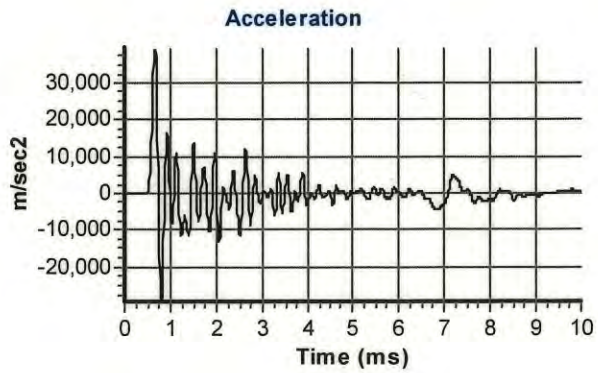
Diameter d_r (mm):	54
Wall Thickness t_r (mm):	6.7
Assumed Modulus E_a (GPa):	208
Accelerometer No.1:	73547
Accelerometer No.2:	64789

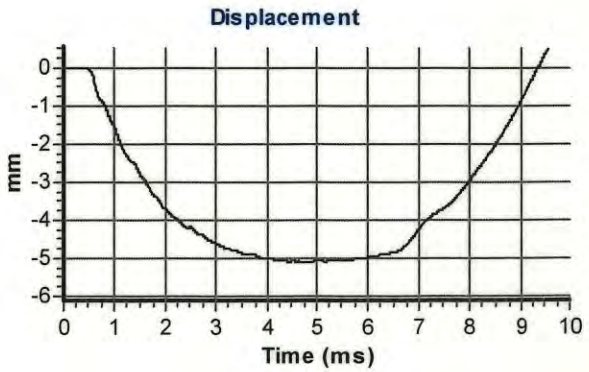
SPT Hammer Information

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 (mm2):	996
Theoretical Energy E_{theor} (J):	473
Measured Energy E_{meas} (J):	417

Energy Ratio E_r (%): **88**

Signed: Bob Stewart
Title: Technician

The recommended calibration interval is 12 months

Southern Testing
Environmental & Geotechnical

ST Consult
Environmental & Geotechnical

APPENDIX C

Geotechnical Laboratory Test Methods and Results

C

Southern Testing | ST Consult

Plasticity Index and Water Content Summary

BS1377-2:2022 cl. 5, BS EN ISO 17892-1:2014 + A1:2022, BS EN ISO 17892-12:2018 + A2:2022

AGS

Project Name	*Land off Bull Lane, Bethersden*					Project Number		*J16261*	
Client	*Esquire Developments*			PE	*SM*	Date Issued		*29-Jul-26*	

Location ID	Depth m	Sample Type	Visual Description	Comments	Initial WC %	Liquid Limit %	Plastic Limit %	Plasticity Index	Classi-fication	Passing 425 micron %
TP01	1.00	D	*Very stiff buff brown mottled buff and yellow brown silty CLAY.*		*19*	*47*	*23*	*24*	*CI*	*100*
TP02	1.00	D	*Stiff light grey patched orange brown and yellow brown silty CLAY.*		*31*	*65*	*27*	*38*	*CH*	*100*
TP02	2.00	D	*Stiff yellow grey patched yellow ochre and yellow brown silty CLAY.*		*20*	*52*	*24*	*28*	*CH*	*100*
TP03	1.00	D	*Stiff light grey mottled yellow grey and orange brown silty CLAY.*		*26*	*62*	*23*	*39*	*CH*	*100*
TP04	1.50	D	*Stiff light grey patched yellow ochre and orange brown silty CLAY.*		*24*	*44*	*22*	*22*	*CI*	*100*
TP05	1.00	D	*Stiff light grey mottled yellow brown silty CLAY.*		*22*	*58*	*25*	*33*	*CH*	*100*
TP06	1.50	D	*Stiff light grey patched yellow ochre silty CLAY.*		*22*	*45*	*23*	*22*	*CI*	*100*
TP07	0.50	D	*Very stiff buff brown mottled grey and yellow brown CLAY.*		*18*	*47*	*23*	*24*	*CI*	*100*
TP07	2.00	D	*Very stiff light grey patched yellow ochre silty CLAY.*		*15*	*35*	*19*	*16*	*CL/CI*	*100*
TP08	0.50	D	*Very stiff buff brown mottled yellow ochre silty CLAY.*		*13*	*42*	*24*	*18*	*CI*	*100*

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Plasticity Index and Water Content Summary

BS1377-2:2022 cl. 5, BS EN ISO 17892-1:2014 + A1:2022, BS EN ISO 17892-12:2018 + A2:2022

AGS

Project Name	*Land off Bull Lane, Bethersden*					Project Number		*J16261*	
Client	*Esquire Developments*			PE	*SM*	Date Issued		*29-Jul-26*	

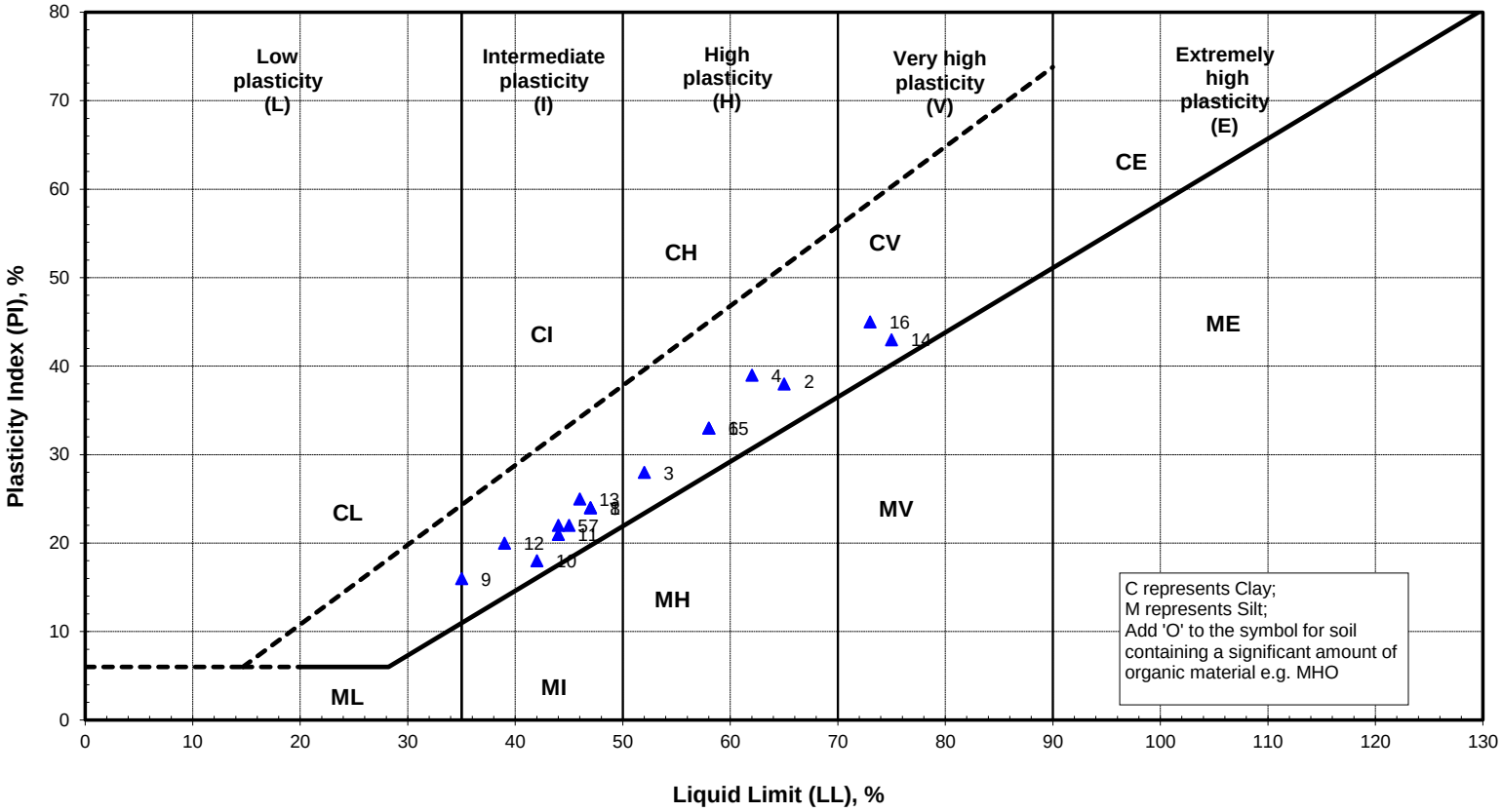
Location ID	Depth m	Sample Type	Visual Description	Comments	Initial WC %	Liquid Limit %	Plastic Limit %	Plasticity Index	Classi-fication	Passing 425 micron %
TP08	1.50	D	*Brown patched grey silty CLAY.*		*19*	*44*	*23*	*21*	*CI*	*100*
TP09	1.00	D	*Grey mottled orange brown silty CLAY.*		*19*	*39*	*19*	*20*	*CI*	*100*
TP09	2.50	D	*Stiff orange brown patched grey silty CLAY.*		*18*	*46*	*21*	*25*	*CI*	*100*
TP10	1.00	D	*Very stiff light grey patched yellow ochre and red brown silty CLAY.*		*22*	*75*	*32*	*43*	*CV*	*100*
TP11	0.50	D	*Very stiff grey mottled yellow brown silty CLAY. With occasional fine roots.*		*22*	*58*	*25*	*33*	*CH*	*100*
TP11	1.50	D	*Stiff pale grey mottled orange and mauve silty CLAY.*		*28*	*73*	*28*	*45*	*CV*	*100*

Plasticity Chart for Atterberg Limit Tests

Project Name	*Land off Bull Lane, Bethersden*			**Project Number**	*J16261*
Client Name	*Esquire Developments*	**PE**	*SM*	**Date Issued**	*29-Jul-26*

Key

No.	TH No.	Depth
1	TP01	1.00
2	TP02	1.00
3	TP02	2.00
4	TP03	1.00
5	TP04	1.50
6	TP05	1.00
7	TP06	1.50
8	TP07	0.50
9	TP07	2.00
10	TP08	0.50
11	TP08	1.50
12	TP09	1.00
13	TP09	2.50
14	TP10	1.00
15	TP11	0.50
16	TP11	1.50



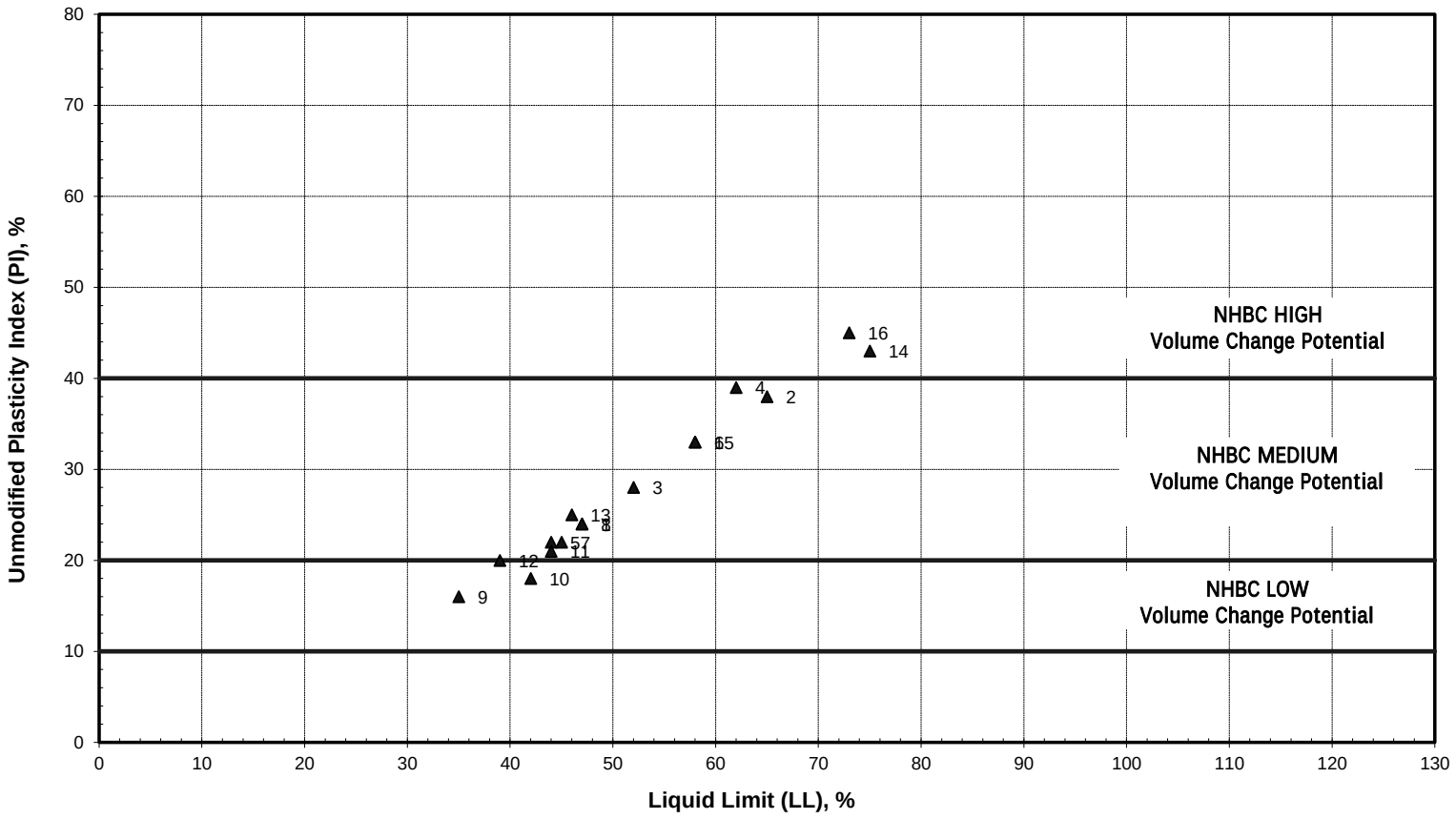
Liquid Limit		**Plastic Limit**		**Plasticity Index**	
Maximum Value	75	Maximum Value	32	Maximum Value	45
Minimum Value	35	Minimum Value	19	Minimum Value	16
Average Value	52	Average Value	24	Average Value	28

NHBC Classification for Volume Change Potential

Project Name	*Land off Bull Lane, Bethersden*			**Project Number**	*J16261*
Client Name	*Esquire Developments*	**PE**	*SM*	**Date Issued**	*29-Jul-26*

Key

No.	TH No.	Depth
1	TP01	1.00
2	TP02	1.00
3	TP02	2.00
4	TP03	1.00
5	TP04	1.50
6	TP05	1.00
7	TP06	1.50
8	TP07	0.50
9	TP07	2.00
10	TP08	0.50
11	TP08	1.50
12	TP09	1.00
13	TP09	2.50
14	TP10	1.00
15	TP11	0.50
16	TP11	1.50



Liquid Limit		**Plastic Limit**		**Unmodified Plasticity Index**	
Maximum Value	75	Maximum Value	32	Maximum Value	45
Minimum Value	35	Minimum Value	19	Minimum Value	16
Average Value	52	Average Value	24	Average Value	28

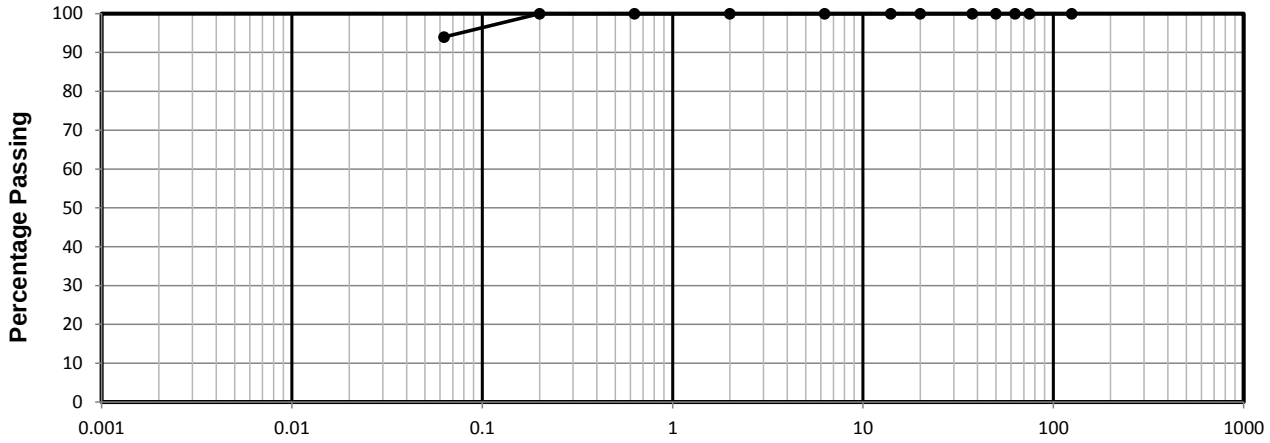
PARTICLE SIZE DISTRIBUTION REPORT

BS EN ISO 17892-4:2016 cl. 5.2, 5.4

Project Name	*Land off Bull Lane, Bethersden*			**Project Number**	***J16261***
Client Name	*Esquire Developments*	**PE**	*SM*	**Date Issued**	*06-Aug-26*

Particle Size	% Passing
125mm	100
75mm	100
63mm	100
50mm	100
37.5mm	100
20mm	100
14mm	100
6.3mm	100
2mm	100
630µm	100
200µm	100
63µm	94

Particle Size Distribution Chart



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
	SILT			SAND			GRAVEL			
94				6			0			0

Visual Description of Sample:

Very stiff yellow buff patched orange and pale grey slightly sandy SILT.

Particle Density Mg/m³	
Coefficient of Uniformity	**N/A**

Location	TP10
Depth (m)	2.00
Sample Type	D

Comments:

Test Methods:

Wet & Dry Grading BS EN ISO 17892-4:2016 cl. 5.2

Tested By	STL Lab
Checked By	AnnaS

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Analytical Report Number : 26-039013

Project / Site name:	Land of Bull Lane, Bethersden	**Samples received on:**	20/07/2026
Your job number:	J16261	**Samples instructed on/ Analysis started on:**	20/07/2026
Your order number:	J16261_2	**Analysis completed by:**	27/07/2026
Report Issue Number:	1	**Report issued on:**	27/07/2026
Samples Analysed:	8 soil samples		

Signed:

Adan Cazas Garcia
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

Analytical Report Number: 26-039013
Project / Site name: Land of Bull Lane, Bethersden
Your Order No: J16261_2

Lab Sample Number				987463	987464	987465	987466	987467
Sample Reference				TP01	TP03	TP05	TP07	TP10
Sample Number				D	D	D	D	D
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				2.50	1.50	2.00	1.00	1.50
Date Sampled				07/07/2026	07/07/2026	07/07/2026	08/07/2026	08/07/2026
Time Taken				1110	1200	1300	0900	1043
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	17	17	15	15
Total mass of sample received	kg	0.1	NONE	1.2	2	2	2	2

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6	5.3	5.1	6.1	4.9
Total Sulphate as SO_4	%	0.005	MCERTS	0.086	0.064	0.089	0.02	0.039
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	500	75	80	10	44
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	251	37.3	39.8	5.22	22
Total Sulphur	mg/kg	50	MCERTS	1200	240	300	100	260
Total Sulphur	%	0.005	MCERTS	0.125	0.024	0.03	0.01	0.026

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 26-039013
Project / Site name: Land of Bull Lane, Bethersden
Your Order No: J16261_2

Lab Sample Number				987468	987469	987470
Sample Reference				WLS01	WLS02	WLS03
Sample Number				D	D	D
Water Matrix				N/A	N/A	N/A
Depth (m)				1.00	2.20	0.50
Date Sampled				07/07/2026	07/07/2026	07/07/2026
Time Taken				1200	1200	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status			
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	21	17	13
Total mass of sample received	kg	0.1	NONE	1.5	0.8	2

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.5	7.6	7.6
Total Sulphate as SO_4	%	0.005	MCERTS	0.085	0.032	0.021
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	390	110	53
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	193	55.6	26.5
Total Sulphur	mg/kg	50	MCERTS	620	310	280
Total Sulphur	%	0.005	MCERTS	0.062	0.031	0.028

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 26-039013
Project / Site name: Land of Bull Lane, Bethersden

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
987463	TP01	D	2.5	Brown clay
987464	TP03	D	1.5	Brown clay and sand
987465	TP05	D	2	Brown clay and sand
987466	TP07	D	1	Brown clay and sand
987467	TP10	D	1.5	Brown clay
987468	WLS01	D	1	Brown clay
987469	WLS02	D	2.2	Brown clay
987470	WLS03	D	0.5	Brown clay and loam with vegetation

Analytical Report Number : 26-039013
Project / Site name: Land of Bull Lane, Bethersden

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Analytical Report Number : 26-039013
Project / Site name: Land of Bull Lane, Bethersden

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP01	D	S	987463	c	pH in soil (automated)	L099-PL	c
TP03	D	S	987464	c	pH in soil (automated)	L099-PL	c
TP05	D	S	987465	c	pH in soil (automated)	L099-PL	c
WLS01	D	S	987468	c	pH in soil (automated)	L099-PL	c
WLS02	D	S	987469	c	pH in soil (automated)	L099-PL	c
WLS03	D	S	987470	c	pH in soil (automated)	L099-PL	c

Southern Testing
Environmental & Geotechnical

ST Consult
Environmental & Geotechnical

APPENDIX D

Contamination Laboratory Test Methods and Results

D

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Analytical Report Number : 26-038972

Project / Site name:	Land off Bull Lane, Bethersden	**Samples received on:**	20/07/2026
Your job number:	J16261	**Samples instructed on/ Analysis started on:**	20/07/2026
Your order number:	J16261 1	**Analysis completed by:**	03/08/2026
Report Issue Number:	1	**Report issued on:**	03/08/2026
Samples Analysed:	10 soil samples		

Signed:

Adan Cazas Garcia
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 26-038972
Project / Site name: Land off Bull Lane, Bethersden
Your Order No: J16261 1

Lab Sample Number				987254	987255	987256	987257	987258
Sample Reference				TP01	TP03	TP04	TP05	TP05
Sample Number				ES	ES	ES	ES	ES
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.50	0.20	0.50
Date Sampled				07/07/2026	07/07/2026	07/07/2026	07/07/2026	07/07/2026
Time Taken				1110	1200	1230	1300	1300
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.2	10	15	11	13
Total mass of sample received	kg	0.1	NONE	0.2	0.5	0.2	0.2	0.2
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDZ	-	PDZ	PDZ	PDZ
Analysis completed	N/A	N/A	N/A	25/07/2026	-	25/07/2026	25/07/2026	25/07/2026
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	7	6.9	7	6.7	6.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	96	550	91	77	220
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0479	0.274	0.0454	0.0383	0.108
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	47.9	274	45.4	38.3	108
Sulphide	mg/kg	1	MCERTS	I/S *I/S	< 1.0	< 1.0	< 1.0	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	5.4	3.2	0.4	5.8	0.5
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.13	< 0.05	< 0.05	0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.39	0.1	< 0.05	0.17	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.36	0.08	< 0.05	0.15	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.18	0.08	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.21	0.08	< 0.05	0.08	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.1	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.09	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.11	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.06	0.06	< 0.05	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.26	< 0.80	< 0.80	< 0.80	< 0.80

Analytical Report Number: 26-038972
Project / Site name: Land off Bull Lane, Bethersden
Your Order No: J16261 1

Lab Sample Number				987254	987255	987256	987257	987258
Sample Reference				TP01	TP03	TP04	TP05	TP05
Sample Number				ES	ES	ES	ES	ES
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.50	0.20	0.50
Date Sampled				07/07/2026	07/07/2026	07/07/2026	07/07/2026	07/07/2026
Time Taken				1110	1200	1230	1300	1300
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.5	10	13	9.1	7.3
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.5	1	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S *U/S g	U/S *U/S g	< 1.8	U/S *U/S g	< 1.8
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	< 1.80	< 1.80	-	< 1.80	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	27	36	28	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	21	31	21	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	56	40	19	47	22
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	11	16	12	23
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.3	< 1.0	1	1
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	37	41	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	53	51	45	54	61
Petroleum Hydrocarbons								
TPH (>EC6 - EC8) HS_1D_TOTAL	mg/kg	0.01	MCERTS	< 0.01	-	-	< 0.01	-
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	< 0.02	-	-	< 0.02	-
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	-	-	< 2.0	-
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	-	-	< 4.0	-
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	-	-	< 10	-
TPH (>EC21 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	13	-	-	< 10	-
TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	13	< 10	< 10	< 10	-
Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	13	< 10	< 10	< 10	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 26-038972
Project / Site name: Land off Bull Lane, Bethersden
Your Order No: J16261 1

Lab Sample Number				987259	987260	987261	987262	987263
Sample Reference				TP07	TP10	TP10	TP11	TP11
Sample Number				ES	ES	ES	ES	ES
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.50	0.20	0.50
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				0900	1030	1030	1000	1000
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	10	15	10	16
Total mass of sample received	kg	0.1	NONE	0.3	0.2	0.2	0.2	0.2
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDZ	WBR	WBR	WBR	WBR
Analysis completed	N/A	N/A	N/A	25/07/2026	25/07/2026	25/07/2026	25/07/2026	25/07/2026
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	6.9	6.1	6.1	6.1	4.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	94	28	28	31	68
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0471	0.0142	0.0142	0.0153	0.034
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	47.1	14.2	14.2	15.3	34
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Organic Matter (automated)	%	0.1	MCERTS	4.3	4	1.2	2.6	0.6
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.08	< 0.05	0.08	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.14	< 0.05	0.06	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.12	0.4	0.06	0.19	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.36	0.05	0.18	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.17	< 0.05	0.1	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.21	< 0.05	0.1	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.25	< 0.05	0.15	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.12	< 0.05	0.06	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.2	< 0.05	0.1	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.12	< 0.05	0.11	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.14	< 0.05	0.11	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	2.19	< 0.80	1.23	< 0.80

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Lab Sample Number				987259	987260	987261	987262	987263
Sample Reference				TP07	TP10	TP10	TP11	TP11
Sample Number				ES	ES	ES	ES	ES
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.50	0.20	0.50
Date Sampled				08/07/2026	08/07/2026	08/07/2026	08/07/2026	08/07/2026
Time Taken				0900	1030	1030	1000	1000
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	11	17	12	19
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S *U/S g	U/S *U/S g	< 1.8	< 1.8	< 1.8
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	< 1.80	< 1.80	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	27	44	26	43
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	17	27	17	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	71	39	21	48	21
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	9.3	9.7	9.9	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.3	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	47	45	39	43	28
Petroleum Hydrocarbons								
TPH (>EC6 - EC8) HS_1D_TOTAL	mg/kg	0.01	MCERTS	-	-	-	-	-
TPH (>EC8 - EC10) HS_1D_TOTAL	mg/kg	0.02	MCERTS	-	-	-	-	-
TPH (>EC10 - EC12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	-	-	-	-	-
TPH (>EC12 - EC16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	-	-	-	-	-
TPH (>EC16 - EC21) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	-	-
TPH (>EC21 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	-	-
TPH Total >EC6 - EC40 EH_CU+HS_1D_TOTAL	mg/kg	10	NONE	-	-	-	-	-
Petroleum Range Organics (EC6 - EC10) HS_1D_TOTAL	mg/kg	1	ISO 17025	-	-	-	-	-
TPH (EC10 - EC40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
987254	TP01	ES	0.2	Brown clay and sand
987255	TP03	ES	0.2	Brown sandy clay with vegetation
987256	TP04	ES	0.5	Brown clay and sand
987257	TP05	ES	0.2	Brown loam and sand with vegetation
987258	TP05	ES	0.5	Brown loam and clay with gravel
987259	TP07	ES	0.2	Brown loam and clay with vegetation
987260	TP10	ES	0.2	Brown clay and sand with gravel and vegetation
987261	TP10	ES	0.5	Brown clay and sand with vegetation
987262	TP11	ES	0.2	Brown clay and sand with gravel and vegetation
987263	TP11	ES	0.5	Brown clay and sand with gravel and vegetation

Analytical Report Number : 26-038972
Project / Site name: Land off Bull Lane, Bethersden

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Hexavalent chromium in soil by Ion Chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons by HS-GC-MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS	In-house method	L088-PL	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

Analytical Report Number : 26-038972
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Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Where coal tar is reported as "indicative/not indicative", PAH source attribution has been assessed using the ratio of parent PAHs to alkylated PAHs to indicate a likely pyrogenic (coal tar–related) or petrogenic (bitumen-related) origin. This assessment is independent of total residue and/or benzo(a)pyrene concentrations and is provided for indicative purposes only; it represents a single line of evidence and does not, in isolation, constitute confirmation or classification as hazardous under WM3 guidance.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

*U/S g- Unsuitable for analysis due to high colour intensity.

*I/S- Insufficient sample for analysis.

Sample Deviation Report

Analytical Report Number : 26-038972
Project / Site name: Land off Bull Lane, Bethersden

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP01	ES	S	987254	c	Monohydric phenols in soil	L080-PL	c
TP01	ES	S	987254	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP01	ES	S	987254	c	Sulphide in soil	L010-PL	c
TP01	ES	S	987254	c	Total cyanide in soil	L080-PL	c
TP01	ES	S	987254	c	Total petroleum hydrocarbons by GC-FID in soil	L076B	c
TP01	ES	S	987254	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	c
TP01	ES	S	987254	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TP01	ES	S	987254	c	pH in soil (automated)	L099-PL	c
TP03	ES	S	987255	c	Monohydric phenols in soil	L080-PL	c
TP03	ES	S	987255	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP03	ES	S	987255	c	Sulphide in soil	L010-PL	c
TP03	ES	S	987255	c	Total cyanide in soil	L080-PL	c
TP03	ES	S	987255	c	Total petroleum hydrocarbons by GC-FID in soil	L076B	c
TP03	ES	S	987255	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TP03	ES	S	987255	c	pH in soil (automated)	L099-PL	c
TP04	ES	S	987256	c	Monohydric phenols in soil	L080-PL	c
TP04	ES	S	987256	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP04	ES	S	987256	c	Sulphide in soil	L010-PL	c
TP04	ES	S	987256	c	Total cyanide in soil	L080-PL	c
TP04	ES	S	987256	c	Total petroleum hydrocarbons by GC-FID in soil	L076B	c
TP04	ES	S	987256	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TP04	ES	S	987256	c	pH in soil (automated)	L099-PL	c
TP05	ES	S	987257	c	Monohydric phenols in soil	L080-PL	c
TP05	ES	S	987257	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP05	ES	S	987257	c	Sulphide in soil	L010-PL	c
TP05	ES	S	987257	c	Total cyanide in soil	L080-PL	c
TP05	ES	S	987257	c	Total petroleum hydrocarbons by GC-FID in soil	L076B	c
TP05	ES	S	987257	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L088-PL	c
TP05	ES	S	987257	c	Total petroleum hydrocarbons by HS-GC-MS in soil	L129-PL	c
TP05	ES	S	987257	c	pH in soil (automated)	L099-PL	c
TP05	ES	S	987258	c	Monohydric phenols in soil	L080-PL	c
TP05	ES	S	987258	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP05	ES	S	987258	c	Sulphide in soil	L010-PL	c
TP05	ES	S	987258	c	Total cyanide in soil	L080-PL	c
TP05	ES	S	987258	c	pH in soil (automated)	L099-PL	c
TP07	ES	S	987259	c	Monohydric phenols in soil	L080-PL	c
TP07	ES	S	987259	c	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP07	ES	S	987259	c	Sulphide in soil	L010-PL	c
TP07	ES	S	987259	c	Total cyanide in soil	L080-PL	c
TP10	ES	S	987260	bc	Asbestos identification in Soil	A001B	b
TP10	ES	S	987260	bc	Monohydric phenols in soil	L080-PL	c
TP10	ES	S	987260	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP10	ES	S	987260	bc	Sulphide in soil	L010-PL	c
TP10	ES	S	987260	bc	Total cyanide in soil	L080-PL	c
TP10	ES	S	987261	bc	Asbestos identification in Soil	A001B	b
TP10	ES	S	987261	bc	Monohydric phenols in soil	L080-PL	c
TP10	ES	S	987261	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP10	ES	S	987261	bc	Sulphide in soil	L010-PL	c
TP10	ES	S	987261	bc	Total cyanide in soil	L080-PL	c
TP11	ES	S	987262	bc	Asbestos identification in Soil	A001B	b
TP11	ES	S	987262	bc	Monohydric phenols in soil	L080-PL	c
TP11	ES	S	987262	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP11	ES	S	987262	bc	Sulphide in soil	L010-PL	c
TP11	ES	S	987262	bc	Total cyanide in soil	L080-PL	c
TP11	ES	S	987263	bc	Asbestos identification in Soil	A001B	b
TP11	ES	S	987263	bc	Monohydric phenols in soil	L080-PL	c
TP11	ES	S	987263	bc	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	c
TP11	ES	S	987263	bc	Sulphide in soil	L010-PL	c
TP11	ES	S	987263	bc	Total cyanide in soil	L080-PL	c

These screening values are valid at the time of writing but may be subject to change and any such changes will have implications for the assessments based on them. Their validity should be confirmed at the time of site development.

Table 1 – Tier 1 Screening Values							
Contaminant	Units	Proposed Land Use					
		Residential with home grown produce consumption	Residential without home grown produce consumption	Open Space * (Residential)	Open Space * (Park)	Allotments	Commercial / Industrial
Arsenic (As) [2]	mg/kg	37	40	79	170	43	640
Cadmium (Cd) [2]	mg/kg	11	85	120	555	1.9	190
Trivalent Chromium (CrIII) [2]	mg/kg	910	910	1,500	33,000	18,000	8600
Hexavalent Chromium (CrVI) [2]	mg/kg	6	6	7.7	220	1.8	33
Lead (Pb) [3]	mg/kg	200	310	630	1300	80	2330
Mercury (Hg) [1,2,7]	mg/kg	7.6-11	9.2-15	40	68-71	6.0	29-320
Selenium (Se) [2]	mg/kg	250	430	1,100	1,800	88	12,000
Nickel (Ni) [2,4]	mg/kg	130	180	230	800	53	980
Copper (Cu) [2,4]	mg/kg	2,400	7,100	12,000	44,000	520	68,000
Zinc (Zn) [2,4]	mg/kg	3,700	40,000	81,000	170,000	620	730,000
Phenol [1,2]	mg/kg	120-380	440-1200	440-1300	440-1300	23-83	440-1300
Benzo[a]pyrene [1,5]	mg/kg	1.7-2.4	2.6	4.9	10	0.67-2.7	36
Naphthalene [1,2]	mg/kg	2.3-13	2.3-13	77-430^{+}	77-430^{+}	4.1-24	77-430^{+}
Total Cyanide (CN) [6]	mg/kg	/	/	/	/	/	/
Free Cyanide [6]	mg/kg	/	/	/	/	/	/
Complex Cyanides [6]	mg/kg	/	/	/	/	/	/
Thiocyanate [6]	mg/kg	/	/	/	/	/	/

Notes:

* Open Space levels calculated on the basis of the exposure modelling developed in the C4SL research.

+ Screening values constrained to saturation limit. Higher values may be acceptable on a site specific basis.

[1] Where ranges of values are given for organic contaminants the screening value is dependent on the Soil +Organic Matter.

[2] LQM/CIEH S4UL (2014). Copyright Land Quality Management Ltd. reproduced with permission; Publication Number S4UL 3116. All rights reserved.

[3] C4SL (DEFRA 2014).

[4] Copper, Zinc and Nickel may have phototoxic effects at the given concentrations. Alternative criteria should be adopted for importation of Topsoil or other soils for cultivation. BS3882:2015 and BS8601:2013 suggest values of 200 to 300mg/kg for Zn, 100 to 200mg/kg for Cu, and 60 to 110mg/kg for Ni, for topsoil and subsoil, depending on pH.

[5] Based on the Surrogate Marker approach and modelled using the modified exposure parameters of C4SL but retaining 'minimal risk' HCV.

[6] Screening criteria derived on a site specific basis if test results indicate.

[7] S4UL for Methyl Mercury, higher concentrations may be tolerable if inorganic mercury is the only species present. Lower concentrations apply for elemental Mercury.

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APPENDIX E

Photographs

E

	
Northern site: View from north west of site looking east.	Northern site: View from north west of site looking south east.
	
Northern site: View from north west of site looking south.	Northern site: View from centre of site looking north west.
	
Northern site: View from centre of site looking north.	Northern site: View from centre of site looking north east.

	
Northern site: View from centre of site looking east.	Northern site: View from centre of site looking south.
	
Northern site: View from centre of site looking west.	Northern site: View from south east corner of site looking north.
	
Northern site: View from south east corner of site looking north west.	Northern site: View from south east corner of site looking west.

Northern site: View from south west of site looking north east.

Northern site: View from south west of site looking north.

Northern site: View from south west of site looking east.

Northern site: View from south west of site looking south.

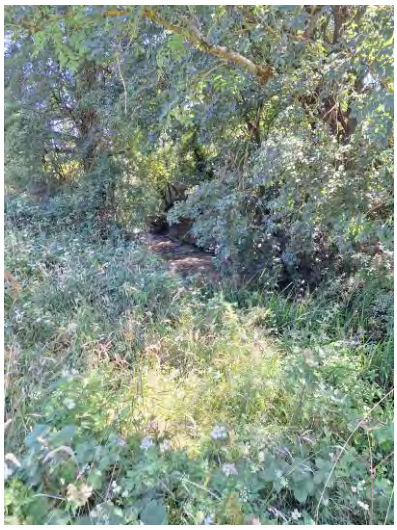
Southern site: View from north of site looking east.

Southern site: View from north of site looking south.

	
Southern site: View from north of site looking south west.	Southern site: View from south west of site looking north.
	
Southern site: View from south west of site looking east.	Southern site: View from south west of site looking south east.
	
Southern site: View from south west of site looking south.	Southern site: View from south of site looking north.

Southern site: View from south west of site looking south.

River to south of site.



River to south of site.

Wooded boundary in centre of sites.

Wooded boundary in centre of sites.

Gas installation in north east corner of site.

	
TP01	TP01 Spoil
	
TP02	TP02 Spoil
	
TP03	TP03 Spoil

TP04

TP04 Spoil

TP05

TP05 Spoil

TP06

TP06 Spoil

	
TP07	TP07 Spoil
	
TP08	TP08 Spoil
	
TP09	TP09 Spoil

	
TP10	TP10 Spoil
	
TP11	TP11 Spoil
	
TP12	TP12 Spoil

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