Report prepared at
Ashcroft House
100 Kingston Road
Shoreham-on-Sea
BN43 6YU

On behalf of
Bugler Developments Limited

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Prepared by
Aviron Associates Limited

Report Quality Management			
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1.0 PROJECT AND SITE INFORMATION

1.1 APPOINTMENT

Aviron Associates Limited (Aviron) was retained by Bugler Developments Limited (the "Client") to prepare a tier 1 Preliminary Risk Assessment (PRA) and complete a Site Investigation (SI) leading towards a tier 2 Generic Quantitative Risk Assessment (GQRA) of the following premises:

Ashcroft House, 100 Kingston Lane, Shoreham-by-Sea, BN43 6YU (hereafter referred to as the "site").

The PRA forms a tier 1 assessment by completing a desk-based study with site walkover to identify potential areas of contaminative concern associated with the proposed development of the site. The PRA will then form a preliminary Conceptual Site Model (CSM) with recommendations for any further investigation or risk assessment.

The SI will investigate the pollutant linkages established within the PRA in order to produce suitable data for the preparation of a tier 2 GQRA to refine the CSM and as necessary provide recommendations for any further investigation or tier 3 Detailed Quantitative Risk Assessment (DQRA). Alternatively, it may be possible to make remediation recommendations immediately following the GQRA.

In addition, geotechnical issues shall be investigated to provide recommendations for new foundations, drainage and pavement design.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

1.2 THE SITE

Table 1.2 provides a summary of site details and surrounding area.

Table 1.2: Site Details	
Site Location	The site is located at 100 Kingston Lane, on the eastern outskirts of Shoreham-by-Sea, approximately 1850 metres (m) to the east of Shoreham railway station. **Figure 1** is presented as the Site Location Plan.
National Grid Ref.	Centred at approximately 523690, 105440.
Current Land Use	The site comprises the partly cleared sheltered accommodation of Ashcroft House. The site includes eight vacant single-storey residential terraced premises in the south-west. **Figure 2** is presented as the Pre-Clearance Site Layout Plan. **Figure 3** is presented as the Site Photographs.

Table 1.2: Site Details	
Surrounding Land Use	The site is located within a residential urban area and is surrounded by residential premises in all directions. Kingston Lane forms the eastern boundary of the site.
Proposed Land Use	The proposed development comprises the demolition of the remaining residential premises and the construction of a two to three storey apartment building, as well as a new access road, parking and amenity space. **Figure 4** is presented as the Proposed Development Plan.

1.3 SITE WALKOVER SURVEY

A site walkover survey was undertaken and included an inspection of the site and surrounding area, where safe and accessible. The purpose of the survey is to identify any potential on-site or nearby contaminative activities or potential sources of land contamination.

Additionally, as part of the survey any features which may affect site re-development in terms of physical site and ground conditions were noted.

Table 1.3 provides a description of site features observed during the walkover survey and also current Ordnance Survey maps made available at the time of report writing.

Table 1.3: Summary of Site Walkover Survey	
Physical Site Characteristics	
Existing Structures	Terrace of eight vacant single-storey residential terraced buildings in the south-west of the site under pitched clay tile roofs. Single storey outbuilding under a pitched clay tile roof in the north-east of the site, fronting Kingston Lane.
Basements	None observed.
Visual Topography and Site Surfacing	The site is generally level, mostly of soft surfacing or unmade surfacing with buildings locally and small areas of remnant hardstanding. Stockpile of demolition rubble centrally located assumed to have been formed following the demolition of the former Ashcroft House.
Retaining Structures and Slopes	None observed.
Drainage Issues	None observed.
Surface Waters	None observed within the site extents.
Trees and Hedges	The boundaries of the site are locally overgrown with trees, shrubs and climbing plants.

Table 1.3: Summary of Site Walkover Survey	
Made and Infilled Ground	Made ground should be anticipated beneath the buildings and hardstanding. Possible infilled basement should be anticipated at the location of the former Ashcroft House, centrally within the site.
Contaminative Characteristics	
Above or Underground Storage Tanks (ASTs/USTs) and Drums	None observed.
Fuel Interceptors	None observed.
Waste Storage and Disposal	Stockpile of demolition rubble centrally located within the site.
Hazardous Material Storage and Use	None observed.
Asbestos Containing Materials (ACMs)	Possible ACM in the former and existing building fabric. An asbestos survey is recommended prior to redevelopment works.
Boiler Houses	None observed.
Sub-stations	None observed.
Surface Staining	None observed.
Potentially Contaminative Activities	No potentially contaminative activities observed.

1.3.1 Summary of Physical Site Characteristics

Consideration should be made towards the make-up and competency of the underlying strata and the influence of trees on the proposed development building.

1.3.2 Summary of Contaminative Site Characteristics

No potentially contaminative activities observed during the site walkover.

2.0 DESK STUDY REVIEW

Historical Ordnance Survey (OS) maps were obtained as part of the Envirocheck database search within report package reference 376556175 dated 12 May 2025, included within **Appendix I**. Database information within the Envirocheck report also includes reference to the hydrogeology, hydrology, subsidence and mining risk and ground gas hazards in the site area and is summarised in the following sections. A summary of the ground hazards for construction purposes is also included.

2.1 HISTORICAL REVIEW

Historical Ordnance Survey (OS) maps were reviewed, and the historical development of the site and the surrounding land is summarised in the following table.

Table 2.1: History of the Site and Surrounding Land

Date (scale)	Site History	Surrounding Land History
1874 (1:2,500) 1879 (1:10,560) 1898 (1:2,500) 1899 (1:10,560)	The site is shown to have been developed as a detached building marked as Ashcroft. A small outbuilding is marked in the north-east of the site, which is shown to have been extended by 1898. A glasshouse is shown adjacent the main building and a small square building adjacent the glasshouse, which is marked later in 1912 as an unspecified tank. The site is shown to have been populated with numerous mixed deciduous and coniferous trees.	Kingston Lane adjacent the eastern boundary of the site, with a lodge, rectory and St Michaels' Church further to the east. Kingston by Sea located 175m to the south-west of the site, with the River Adur and the coastal shoreline some 450m to the south. Railway line (London Brighton and South Coast) 365m to the south. Ponds and drains marked in the wider site area.
1912 (1:2,500) 1912 (1:10,560)	No notable changes identified at the site.	Residential housing noted to have been developed in the wider site area of Southwick. Nursery some 175m to the north-east.
1933 (1:2,500) 1931 (1:10,560)	Additional outbuilding marked in the north-east of the site.	Gravel pit indicated 210m to the north-east, adjacent the nursery. Worked ground, later marked as a gravel pit, noted within the 251-500m search band west and north-west of the site.
1947 (1:10,560) 1947 (aerial photograph	No notable changes identified at the site.	Residential housing noted along Kingston Lane to the north-east and a school and playing field beyond.
1952 (1:1,250) 1952 (1:2,500)	Small extension marked against the northern elevation of the main building. The former glasshouse and the unspecified tank are no longer marked.	Refuse heap shown 280m to the west of the site at the location of the former worked ground.

Table 2.1: History of the Site and Surrounding Land		
Date (scale)	**Site History**	**Surrounding Land History**
1964 (1:1,250) 1968 (1:10,000) 1972 (1:10,000)	Considerable extension marked against the northern elevation of the main building. Additional outbuilding marked in the north-east of the site.	Residential housing of Ashcroft Close and Rectory Close marked immediately north, west and south of the site. King's Manor School for Girls shown further to the north and west of the site. Gravel pit to the north-east redeveloped as housing.
1984 (1:10,000) 1985 (1:1,250) 1993 (1:1,250) 1994 (1:1,250)	Additional small extension to the main building, which is now marked as numbers 9-29. Terrace of buildings, as existing, in the south-west of the site, marked as 1-8.	Refuse heap to the west and north-west redeveloped as housing.
1999 (aerial photograph) 2003-2024 (1:10,000) incl. 2025 current edition 2025 (aerial photograph)	The aerial photograph indicates numerous trees around the site.	No notable changes identified at the site.
Note: All distances are approximate.		

2.1.1 Anecdotal Evidence

Online research indicates that the main building (Ashcroft) was demolished in 2024, and comprised a three-storey building, including roof rooms. An electricity sub-station is understood to have been located within the outbuilding in the north-eastern corner of the site.

2.1.2 Summary of Historical Landuses

A review of the historical Ordnance Survey maps show that the site was in use as Ashcroft throughout the mapping history until its demolition in 2024.

A terrace of buildings was constructed by 1984 in the south-west of the site and remains in-situ.

There are no significant commercial or industrial premises recorded within the vicinity of the site. Wider afield, a nursery, worked ground, gravel pits and a refuse heap are shown on the historical mapping, however each of these locations has been subsequently redeveloped as housing.

2.2 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

2.2.1 Anticipated Geology

Relevant geological information has been determined using the British Geological Survey (BGS) extract sheet 318 of Brighton and Worthing, which have been summarised in table 2.1.1 below.

Table 2.2.1: Anticipated Geology

Stratum	Age	Possible Thickness (m)	Typical Description	Aquifer Status
Artificial/Made Ground None indicated on site	N/A	N/A	N/A	N/A
Superficial Head (HEAD) - *Across the north-western corner of the site*	Quaternary	N/A	Gravel, sand and clay depending on upslope source and distance from source. Locally with lenses of silt, clay or peat and organic material	Secondary (undifferentiated) aquifer
Superficial River Terrace Deposits (undifferentiated) (RTDU) - *Across the majority of the site*	Quaternary	N/A	Sand and gravel, locally with lenses of silt, clay or peat.	Secondary (B) aquifer
Solid Tarrant Chalk Member (TACH)	Campanian	30-45m	Chalk with relatively widely spaced but large flint seams	Principal aquifer

The Envirocheck report indicates that there are no records of artificial ground within 250m of the site.

The Envirocheck report indicates that there are no references to landslips or faults recorded within 500m of the site.

2.2.2 Ground Conditions – Ground & Water Phase 2 Site Investigation - GWPR4771/SIR/June 2022

The following ground conditions have been extracted from the G&W report and are summarised in table 2.2.2.

Table 2.2.2: Ground Conditions – G&W			
Strata	**Depth Encountered (metres (m) below ground level (bgl))**	**Base Depth (m bgl)**	**Thickness (m)**
TOPSOIL: Generally clayey, locally gravelly fine to coarse SAND	0.0	0.15 - 0.3	0.15 - 0.3
MADE GROUND: Tarmac	0.0	0.05 - 0.1	0.05 - 0.1
MADE GROUND: Variable soils ranging from sandy GRAVEL, gravelly clayey and silty SAND, slightly gravelly clayey SILT to gravelly silty CLAY	0.0	0.45 - 0.8	0.45 - 0.8
UNDIFFERENTIATED RIVER TERRACE DEPOSITS: Variable deposits ranging from sandy gravelly CLAY, clayey gravelly SILT to gravelly silty SAND Locally noted to be of low and low to medium strength	0.2-0.8	0.6 - 8.9	>0.4 - >8.6
TARRANT CHALK MEMBER: Structureless CHALK composed of gravelly sandy SILT. Gravel is weak, white and sub-angular. (CIRIA 574: Grade Dm).	8.6-8.9	15.0 - 20.45	>11.85 - 6.1

Low and low to medium strength soils were encountered locally to depths of 3.0m bgl, as indicated on the cable and percussion borehole logs for BH01 and BH02.

Roots were encountered to depths of between 0.2m and 2.0m bgl.

Groundwater encountered in one of the window sample boreholes (WS1) at 3.16m and 3.45m bgl. Groundwater was also noted in the deeper boreholes at depths of between 7.2m and 7.9m bgl.

2.2.3 Anticipated Ground Conditions

From reference to the anticipated geology and the G&W records, it may be assumed that the following anticipated ground conditions are likely at the site:

- TOPSOIL to depths of up to 0.3m bgl
- MADE GROUND, potentially to 0.8m bgl; over

- River Terrace Deposits, comprising CLAY, SILT and SAND, potentially to 8.6m bgl; over
- Tarrant Chalk Member.

2.2.4 Hydrogeology

The hydrogeology of the site has been determined by the superficial strata of Head and River Terrace Deposits and the solid geology, which are classified by the Environment Agency as a secondary (undifferentiated) aquifer, a secondary (B) aquifer and a principal aquifer respectively.

Secondary (undifferentiated) aquifers have been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. Secondary (B) aquifers are mainly lower permeability layers that may store and yield limited amounts of groundwater through characteristics like thin cracks (called fissures) and openings or eroded layers. Principal aquifers are layers of rock or drift deposits that have high intergranular and/or fracture permeability which may support water supply and/or river base flow on a strategic scale.

The groundwater vulnerability beneath the site is classified as 'Secondary Superficial Aquifer - Medium Vulnerability'.

Both the Envirocheck report and the Environment Agency website (May 2025) indicate that the site is not located within an Environment Agency source protection zone (SPZ).

The Envirocheck report indicates that the south-eastern two-thirds of the site are located in a groundwater flooding susceptibility area, where there is 'Potential for Groundwater Flooding to Occur at Surface'. The north-western third of the site is located in a groundwater flooding susceptibility area, where there is 'Potential for Groundwater Flooding of Property Situated Below Ground Level'.

The Envirocheck report indicates that the nearest reference to groundwater abstraction licences in the area of the site is noted for premises 749m to the north-east where the abstraction is described as 'Private Water Undertaking: Process water' by S D Holdings Ltd. There are no references to groundwater abstractions for 'Public Water Supply' within 1000m of the site.

2.2.5 Hydrology

The nearest surface water feature is located 86m to the west of the site, comprising a pond. The Envirocheck report indicates that there are no OS Water Network Lines within 500m of the site.

The Envirocheck report indicates that there are numerous references to surface water abstraction licences for premises within 1000m, corresponding to a location 757m to the south-east, for 'Other Industrial/ Commercial/Public Services: Non-Evaporative Cooling and Public Administration: General Use (Low Loss)'. There are no references to 'potable surface water supply' within 1000m of the site.

The Envirocheck report indicates that there is one reference to a discharge consent within 250m of the site, at a location 167m to the south-west, where 'Discharge of Other Matter-Surface Water' is noted to discharge to 'Underground Water'.

The Envirocheck report indicates that there is one reference to a pollution incident to controlled waters within 250m of the site, at a location 125m to the south-east, where a Category 3 - Minor Incident is noted in connection with a pollutant described as 'Crude Sewage'.

The Envirocheck report indicates that there are no references to Local Authority Pollution Prevention and Controls within 250m of the site.

The site is not located in an area that is at risk of 'extreme flooding' or 'flooding' from rivers or sea without defences. The site is not located in an area that is used for flood water storage, or in an area that benefits from flood defences.

The Envirocheck report indicates that a small area in the south-west of the site is located in surface water 1 in 1000 year flood extent.

2.3 LANDFILLS AND BIO-GROUND GAS

2.3.1 Landfills, Waste Management Facilities and Infilled Ground

The Envirocheck report indicates that there are no historical landfill sites located within 250m of the site.

The Envirocheck report indicates that there are no references to potentially infilled land (non-water or water) within 250m of the site.

2.3.2 Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Table 2.3.2 summarises the gas risk for the site, based on the above information gained through the desk-based research. In accordance with current guidance (CIRIA C665), the gas generation potential for each source has been individually assessed, with references to potential gassing risk made according to the following definitions: Negligible, Very Low, Low, Moderate, High and Very High. The definitions are explained in Section 10.0 of the guidance.

The objective of this exercise is to determine if potentially unacceptable bio-ground gas risks exist, and whether further investigation and assessment is necessary.

Table 2.3.2: Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Potential Source	Risk	Risk Rating	Rationale
Made Ground (CO_2 + CH_4)	Human health Explosion	Very Low	Made Ground should be anticipated due to the development history of the site. Organic degradable material is not however expected, and the risk of ground gas generation from Made Ground is considered to be very low.
Alluvial Strata (CO_2 + CH_4)	Human health Explosion	Very Low	No alluvial deposits noted in the wider site area.
Landfills (CO_2 + CH_4)	Human health Explosion	Negligible	No historical landfill site located within 250m of the site.
Infilled Ground + Burial Sites (CO_2 + CH_4)	Human health Explosion	Negligible	No potential references to infilled ground within 250m of the site.
Coal and Mining (CO_2 + CH_4)	Human health Explosion	Negligible	Not located in a coal mining area. Non-coal mining areas of Great Britain, noted as 'rare'.
Soil Vapours	Human health Explosion	Very Low	The site was until recently in use as Ashcroft House. Unspecified tank noted on historical mapping, however, no longer present since 1952.
COMBINED RISK RATING = VERY LOW			

A very low combined risk from ground gas ingress and explosion is considered. No potentially significant gassing sources have been identified, which concurs with the assessment completed by Ground & Water Limited within their aforementioned report.

Precautionary gas monitoring is recommended to confirm the very low risk, in connection with routine standing level groundwater monitoring.

2.4 RADON GAS

Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level)', and that basic radon protection measures are required.

Notwithstanding the above, a Radon report is recommended immediately prior to any re-development plans as radon guidance periodically changes and the above advice may be outdated by the time of any re-development. It is therefore recommended an address-specific radon GeoReport be obtained from British Geological Survey, which is appropriate for redevelopment sites.

2.5 GROUND STABILITY, NATURAL CAVITIES AND MINING HAZARDS

Table 2.5 indicates potential ground stability, natural cavities and mining hazards identified within the Envirocheck report for the site.

These will be considered in terms of the proposed development and detailed in the following section 2.5, Preliminary Ground Hazards Summary.

Table 2.5: Ground Stability, Natural Cavities and Mining	
Hazard	**Ground Stability and Natural Cavities Hazard Potential**
Potential for Collapsible Ground Stability	Low: majority of the site Very Low: north-western corner of the site
Potential for Compressible Ground Stability	No Hazard
Potential for Ground Dissolution	Very Low for the north-western half of the site, assumed associated with the edge of the Head Deposits
Landslides	Very Low
Running Sands	Low: majority of the site Very Low: north-western corner of the site
Shrink-Swell Clay	Low: majority of the site Very Low: north-western corner of the site
Natural Cavities	None within 500m
Hazard	**Mining Hazard Potential**

Table 2.5: Ground Stability, Natural Cavities and Mining	
BGS recorded mineral sites	262m NE – Southwick Gravel Pit 380m W – Kingston by Sea Gravel Pit 468m NW – Kingston by Sea Gravel Pit 482m SE – Turberville Wharf
Coal mining affected areas	No Hazard
Mining instability	No Hazard
Man-made mining cavities	None within 500m
Non coal mining areas of Great Britain	Rare
Potential mining areas	No Hazard
Infilled Land	None recorded within the site extents; or within the 250m of the site
Other mining/quarrying	None recorded within the site extents; or within the 250m of the site

The site is not affected by man-made mining cavities, nor is it located in a coal mining affected area. The risk of non-coal mining is noted as 'rare.

The risk of ground dissolution of soluble rocks is noted as 'very low' for the Head Deposits anticipated beneath the north-western half of the site.

There are no references in the Envirocheck report to mineral extraction or potentially infilled land within the 250m search band.

2.6 PRELIMINARY GROUND HAZARDS SUMMARY

Table 2.6 below provides a summary of the preliminary ground hazards identified with the ground and groundwater conditions and historical site use as determined from the desk-based information accumulated within the PRA. The following key plan should be considered in regard of plausible risk:

- ❍ - Further action required. Potentially plausible hazard.
- ❍ - Unlikely to represent a hazard, no further consideration required.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	**Plausible**	**Description**
Topographic		
Site constraints	❍	Restricted site access, hard surfacing and buildings locally.
Slopes, embankments, cuttings	❍	Foundation type and construction difficulties. Remedial measures to stabilise slopes, embankments and cuttings, and mitigate risks of landslides.
Man-made		
Filled ground/ made ground/ infilled basements	❍	Foundation type and construction difficulties associated with previous and existing use. Possible infilled basement centrally beneath the former building.
Existing foundations and below ground structures	❍	Foundation type and construction difficulties. Obstructions to new construction. Influence of existing and adjacent foundations to new construction. Vibration associated with the construction technique.
Mining instability	❍	Foundation type and construction difficulties. Appropriate mining investigation.
Ground chemistry	❍	Made Ground is heterogenous and subject to composition may present a risk of sulphate and sulphide attack on buried concrete.
Unexploded Ordnance	❍	UXO assessment did not form part of our project instructions.
Geological		
Frost action	❍	Susceptibility of soils affected at pavement and foundation formation. Provision of non-frost susceptible materials.
Lateral soil instability	❍	Foundation type and construction difficulties. Provision of temporary works – shoring.
Soft clays, silts and compressible soils	❍	Foundation type and construction difficulties. Sufficient bearing resistance to support the proposed construction.
Shrinkable soils	❍	Foundation type and construction difficulties. Influence of trees on foundation depths. Potential for desiccation to have occurred and heave protection. NHBC Standards Chapter 4.2, Building Near Trees.
Ground dissolution of soluble rocks	❍	Very low risk of ground dissolution of soluble rocks in the north-west of the site. Foundation type and construction difficulties. Dynamic probing, torque readings.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	**Plausible**	**Description**
		A quantitative risk of ground dissolution of soluble rocks did not form part of our project instruction.
Ground chemistry	❍	Natural soils may present a risk of sulphate and sulphide attack on concrete.
Hydrogeological/Hydrological		
Elevated or rising groundwater	❍	Foundation type and construction difficulties. Provision of temporary works – dewatering (possibly well-points) in shallow excavations due to surface water flooding. Provision of temporary works – shoring. Reduced bearing resistance. Effectiveness of soakaway drainage.
Fluvial or coastal scour/erosion	❍	Foundation type and construction difficulties. Remedial or preventative measures.
❍ - Further action required. Potentially plausible hazard. ❍ - Unlikely to represent a hazard, no further consideration required.		

Any proposed new construction will need to consider the required bearing resistance for the proposed building, the influence of Made Ground, superficial deposits and elevated groundwater; however, a piled foundation solution is expected to be required.

A suitable ground investigation would confirm an appropriate foundation solution.

Due to the possibility of seasonally elevated groundwater, shallow soakaway drainage may not be successful. However, consideration may be given to a suitable ground investigation, including soil infiltration testing and groundwater monitoring, and the requirements of the Local Authority or Build Warranty provider requirements.

3.0 REGULATORY INFORMATION, CONSULTATIONS AND OTHER

Unless otherwise stated, regulatory database information has been obtained from the Envirocheck report included as **Appendix I.**

3.1 STATUTORY REGISTERS AND AUTHORISATIONS

Table 3.1 includes the statutory registers and authorisations that relate to the site and surrounding area. Pertinent registers and authorisations will be used in conjunction with the desk-based review to determine the preliminary environmental risk.

Table 3.1: Statutory Registers and Authorisations

Item	0 – 250m	251 – 500m
Contaminated Land Register Entries and Notices	0	0
Records of Licensed Discharge Consents	167m SW: Discharge Of Other Matter-Surface Water	5
Prosecutions Relating to Controlled Waters	0	0
Enforcements and Prohibition Notices	0	0
Integrated Pollution Controls	0	0
Integrated Pollution Prevention and Control	0	0
Local Authority Integrated Pollution Prevention and Control	0	0
Local Authority Pollution Prevention and Controls	0	4
Local Authority Pollution Prevention and Control Enforcements	0	0
Pollution Incidents to Controlled Waters	125m SE: Crude Sewage - Category 3 - Minor Incident	0
Substantiated Pollution Incident	0	0
Prosecutions Relating to Authorised Processes	0	0
Registered Radioactive Substances	0	0
Records of Water Industry Act Referrals	0	0

Table 3.1: Statutory Registers and Authorisations		
Item	**0 – 250m**	**251 – 500m**
Explosive Sites	0	0
Planning Hazardous Substance Consents/Planning Hazardous Substance Enforcements	0	0
Notification of Installations Handling Hazardous Substances (NIHHS) Facilities and Control of Major Accident Hazards Facilities (COMAH)	0	0
Fuel Stations	0	0
Contemporary Trade Directory Entries	Contemporary Trade Directory Entries within the site or within 250m of the site: 52m SE – Truck Alignment Systems - Garage Equipment – Inactive 57m SE – Southern Domestic Appliances - Domestic Appliances - Servicing, Repairs & Parts – Inactive	
Commercial Services	Ther are no commercial Services Entries within the site or within 250m of the site:	
National Grid High Voltage Underground Electricity Transmission Cables	0	0
Item	**Immediate Vicinity**	
Sensitive Land Uses	The site is located in a nitrate vulnerable zone (Sussex Chalk, groundwater)	

3.2 CONSULTEES

3.2.1 Local Authority - Contaminated Land Officer

The Local Authority Environmental Health Department has not been contacted as part of our project instruction.

3.2.2 Local Authority - Building Control Officer

The Local Authority Building Control Officer has not been contacted as part of our project instruction.

3.2.3 Local Authority - Archaeological Officer

A Roman well and the site of a Roman building are marked on the historical mapping, at a location some 500m to the west of the site. Consideration should be given to contacting the Local Authority Archaeological Officer to discuss whether archaeology is likely to impact the proposed development.

3.2.4 Local Authority - Petroleum Officer

The Local Authority Petroleum Officer has not been contacted as part of our project instruction.

3.2.5 Environment Agency - Contaminated Land and Groundwater

The Contaminated Land and Groundwater Team of Environment Agency has not been contacted as part of our project instruction.

3.2.6 Coal Authority and Mining Searches UK

The Coal Authority and Mining Searches UK have not been contacted as part of our project instruction.

4.0 PRELIMINARY RISK ASSESSMENT

4.1 METHODOLOGY

A tier 1 PRA and CSM have been prepared in accordance with the technical approach on Land Contamination Risk Management (LCRM), which replaced 'CLR11'. Possible hazards identified by a potential source of contamination and sensitive receptors have been assessed via a source-pathway-receptor (SPR) model in accordance with current UK protocols. A risk may only exist where a plausible SPR linkage is viable and where the quantity or concentration of a contaminant (source) is sufficient to cause harm. Under the statutory definition "Contamination" may only exist where contaminants pose a risk of harm to a receptor. Risk may be defined as a function of the likelihood and severity of any adverse effects resulting from a contamination event in accordance with CIRIA C552. A summary of how risk is derived, and the associated definition, is presented in tables 4.1.1 and 4.1.2.

Table 4.1.1: Risk Ratings Matrix

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

Table 4.1.2: Risk Ratings Definition

Risk Rationale	Definition
Very high risk	A high probability that severe harm could occur to determined receptor from identified contaminant - OR - evidence exists that severe harm to receptor is currently occurring. Urgent investigation and remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
High risk	Harm is likely to occur to determined receptor from identified contaminant. Urgent investigation and short-term risk minimisation remediation followed by longer term fit for purpose remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
Moderate Risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is relatively unlikely that any harm would be severe or should harm occur it is likely to be relatively mild.
Moderate/low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that any harm would be severe or should harm occur it is probable to be relatively mild.
Low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that such harm, if indeed present, would at worst be mild.
Very low risk	There is a low possibility that harm could occur to a receptor. In such event the harm would not be severe.

4.2 POTENTIAL SOURCES OF CONTAMINATION

Based on the desk-study and walkover survey completed, table 4.2 presents a summary of the potential sources identified.

Table 4.2: Potential Sources		
Source	**Description**	**Key Contaminants of Concern**
1. Site-wide soil contamination	Limited risk of soil contamination within the site associated with historical use as residential accommodation.	Metals, hydrocarbons (TPH/PAH), asbestos.
2. Local soil contamination	Risk of soil contamination from the former buildings, tank previously located adjacent the main building and the former electricity sub-station in the north-east.	Metals, hydrocarbons (TPH/PAH), asbestos.
3. Asbestos	Risk of Asbestos Containing Soils (ACS) and Asbestos Containing Materials (ACMs) from the former and existing buildings.	Asbestos.
4. Ground gases/vapours/radon	Very low risk of hazardous ground gases is anticipated.	Hazardous ground gas. Complete precautionary monitoring.
TPH – Total Petroleum Hydrocarbons. PAH – Polycyclic Aromatic Hydrocarbons.		

4.3 PATHWAYS

A pathway is one or more routes or means that a receptor can be exposed to, or affected by, a contaminant.

Table 4.3: Plausible Pathways
On-Site and Locally
Direct contact; to humans and infrastructure
Underlying geology/*hydrogeology; shallow superficial geology comprising secondary aquifers above a principal aquifer associated with the solid geology*
Inhalation and ingestion
Surface run-off/drainage

4.4 RECEPTORS

A receptor is either a living organism, a group of organisms, an ecological system, controlled waters or property that could be harmed or polluted by a contaminant. Table 4.4 examines the potential receptors.

Table 4.4: Potential Receptors			
Receptor	**Description**	**Comments**	**Plausible**
Construction workers	Groundworkers and general construction works	Construction works proposed within the site	Yes
End users	Occupants of the proposed development	Communal gardens proposed across the site	Yes
Adjacent land users	Occupants of surrounding residencies	Adjacent residential dwellings which could be affected by run-off or migration	Yes
Soft landscaping	Areas of new planting including lawns	Communal gardens proposed across the site	Yes
Water supply pipes	Plastic pipework for potable water supply to housing may be affected if laid in contaminated soils	New supply required for redevelopment	Yes
Buildings & infrastructure	Buried concrete for new foundations may be in contact with aggressive ground (sulphur attack)	New building works proposed	Yes
Groundwater	Controlled waters (aquifers) beneath the site	Site underlain by secondary aquifers above a principal aquifer. Site not located in an SPZ. No potable water abstraction within 1000m	Yes
Surface waters	Controlled water such as lakes, streams, rivers or coastal waters	No main rivers noted within 500m of the site	No
Ecological receptors	Sensitive areas of ecological significance defined under Part 2A of EPA 1990	Site is located in an urban area with no significant ecological receptors in the immediate vicinity	No

4.5 SUMMARY OF POLLUTANT LINKAGES FOR PROPOSED LAND USE - INITIAL CSM

The initial CSM is based upon the proposed site end use and the information currently consulted relating to various risk sources and plausible pollutant linkages and is presented within table 4.5.

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
Source 1 Site-wide soil contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low *Note 1.* Site in previous use as Ashcroft House. Potential for made ground locally, though limited potential for soil contaminants associated with former and existing buildings, also locally.	1

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
					Potential asbestos arising from former and existing building materials.	
	End users	Direct contact	Low Likelihood	Mild	Low *See Note 1.*	2
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low *Note 2*. Site is underlain by secondary and principal aquifers. Site in previous use as Ashcroft House. Site predominantly soft surfaced with buildings and hardstanding locally.	3
	Soft landscaping	Root uptake	Low Likelihood	Mild	Low *Note 3.* Potential for made ground has been identified locally which may impact soft landscaping and root development. However, no evidence of existing vegetation die-back.	4
	Water supply pipes	Direct contact	Low Likelihood	Mild	Low *Note 1.*	5
	Buildings & infrastructure	Direct contact	Low Likelihood	Mild	Low *Note 1.*	6
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low *Note 4.* Site is underlain by secondary and principal aquifers. The site is not located in an SPZ. Site predominantly soft surfaced, creating a pathway to controlled water receptor. However, no significant evidence of contamination.	7
	Surface water	Run-off	Unlikely	Mild	Very Low *Note 5.* No inland rivers within 500m of the site.	8

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 1.*	9
Source 2 Local soil contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low *Note 6.* Former and existing buildings and the former tank and electricity sub-station.	10
	End users	Direct contact	Low likelihood	Mild	Low *See Note 6.*	11
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 6.*	12
	Soft landscaping	Root uptake	Low likelihood	Mild	Low *See Note 6.*	13
	Water supply pipes	Direct contact	Low likelihood	Mild	Low *See Note 6.*	14
	Buildings & infrastructure	Direct contact	Low likelihood	Mild	Low *See Note 6.*	15
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low *See Note 4.*	16
	Surface water	Run-off	Unlikely	Mild	Very Low *See Note 5.* No inland rivers within 500m of the site.	17
	Ecology	Direct contact via run-off	Low likelihood	Mild	Low *See Note 1.*	18
Source 3 Asbestos	Construction workers	Inhalation	Low likelihood	Medium	Moderate/Low *Note 7.* Potential for ACMs in former and existing buildings.	19
	End users	Inhalation	Low likelihood	Medium	Moderate/Low *See Note 7.*	20

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
	Adjacent land users	Inhalation	Unlikely	Mild	Very Low *Note 8.* Potential for ACMs from former and existing buildings. Distance and dispersion in outdoor air limits risk.	21
Source 4 Ground gases and Soil vapours (on/off site source)	Construction workers	Inhalation of vapours/gas	Unlikely	Minor	Very Low *Note 9.* Limited sources of ground gas identified within the site and the vicinity of the site.	22
	End users	Inhalation of vapours/gas	Unlikely	Mild	Very Low *See Note 9.* However, radon protection necessary.	23

The overall environmental risk classification for the site is considered to be generally **LOW.**

4.5 CONSIDERATIONS FOR SITE INVESTIGATION

Further site investigation should comprise the following:

1. **Investigation of soil contamination.** This should be completed on both a spatial and targeted basis. Spatial coverage should be achieved in order to target areas of the site where potential sources of contamination may exist and ideally where these sources overlay a pathway for risk to exist (i.e. within proposed landscaped areas). Local sources of contamination, such as the former tank and electricity sub-station should also be targeted.

2. **Precautionary investigation of hazardous bio-ground gases and soil vapours.** Monitoring wells should be installed enabling precautionary bio-ground gas and vapour monitoring.

The listed suite of analysis is considered suitable and will provide a screening for the majority of commonly found soil contaminants, which shall be followed through into the site investigation.

- Aviron's "**ES-1**" of laboratory analysis shall be applied to future site investigations which includes; arsenic, barium, cadmium, total chromium, copper, nickel, zinc, lead, mercury, selenium, water soluble boron, total cyanide, total sulphate, water soluble sulphide, speciated Polycyclic Aromatic

Hydrocarbons (PAH), speciated Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl Tert-Butyl Ether (MTBE), organic matter, total phenols, pH and asbestos. **Provides broad analysis of common soil contaminants.**

- Waste Acceptance Criteria (**WAC**) testing to determine waste soil classification.

The listed suite of analysis is considered suitable and will provide a screening for the majority of commonly found soil contaminants, which shall be followed through into the site investigation (section 5.0).

5.0 SITE INVESTIGATION WORK

5.1 METHOD STATEMENT AND SITE INVESTIGATION APPROACH

A method statement detailing how the site investigation was to be conducted was produced in accordance with current statuary guidance, best practices and the Client's instructions.

A health and safety plan was completed before site work commenced. Site investigation staff were briefed on the potential contaminants likely to be encountered, and the appropriate personal protective equipment (PPE) to be adopted for this type of investigation.

The site investigation was conducted in accordance with British Standards; BS5930:2015+A1 'Code of Practice for Ground Investigation', BS1377-1:2016 'Methods of test for soils for Civil Engineering Purposes', BS EN ISO 17892 Parts 1-12, 'Geotechnical investigation and testing. Laboratory testing of soil', and BS10175:2011+A2:2017 'Investigation of Potentially Contaminated sites'.

5.2 SITE INVESTIGATION METHODS

Section 4.5 prepared an initial CSM where pollutant linkages with a greater risk than low would require suitable investigation. Table 5.2 presents what it considered to be a suitable method and rationale of investigation which was completed between 24, 28 and 29 April 2025.

Exploratory Hole Location Plans are enclosed as **Figures 5** and **6.**

Exploratory holes were positioned where agreement was made between the Client and various on-site representatives.

Table 4.2: Rationale of the Site Investigation Positions

Locations	Rationale	Monitoring Wells
Cable and Percussion (CP) Boreholes		
BH1 and BH2 were positioned at opposite corners of the proposed development building. The boreholes were drilled to 30.5m bgl to determine ground conditions at increased depth for soil sampling and testing to enable a piled foundation solution.		Not installed.
Window Sample (WS) Boreholes		
WS1 to WS9 were spatially positioned around the site to target shallow soils for sampling and testing. WS1 and WS2 were completed either side of the former tank noted on the historical mapping.		Monitoring wells were installed into WS1, WS5 and WS9

Machine Trial Pits (TP)	
TP1 and TP2 were positioned to complement the window samples and provide spatial coverage around the site and target shallow soils for sampling and testing. SP1 to SP3 were completed to enable soil infiltration testing for soakaway design.	Not installed.

All intrusive locations were pre-cleared prior to the ground investigation works using Ground Penetrating Radar (GPR) and a Cable Avoidance Tool (CAT) and tracing of manhole covers, which was completed to endeavour service avoidance during this exercise.

5.2.1 Cable and Percussion Drilling

Cable and percussion boreholes (BH1 and BH2) were drilled using a Dando 150 drilling rig to depths of 30.5m bgl to enable a piled foundation solution for the proposed development building.

The purpose of the cable and percussion boreholes was to evaluate ground conditions to depths suitable to enable piled foundation design, collect soil samples for geochemical and geotechnical laboratory analysis and to determine soil strength by means of Standard Penetration Testing (SPTs).

The action of cable and percussion drilling also enables the installation of monitoring wells to determine standing groundwater levels and ground gas testing, where required.

Standard Penetration Tests were undertaken at 1.0m intervals to 10m bgl and 2.0m intervals to 30.0m bgl within the boreholes in accordance with BS EN SO 22476-3 “Standard Penetration Test 2005”.

Disturbed and undisturbed soil samples were also collected from bored arisings for geochemical and geotechnical laboratory tests which are further discussed within section 6.0.

5.2.2 Window Sample Drilling

Window sample boreholes WS1 to WS9 were drilled to depths of up to 5.0m bgl using an Archway Dart drilling rig.

The purpose of the window sampling was to evaluate ground conditions at shallow depths, collect soil samples for geochemical and geotechnical laboratory analysis and to determine soil strength by means of SPTs.

The action of window sampling also enables the installation of monitoring wells to determine standing groundwater levels and ground gas testing.

Standard Penetration Tests were undertaken at 1m intervals to depths of up to 4.0m bgl within the boreholes in accordance with BS EN SO 22476-3 "Standard Penetration Test 2005". Drilling refusal (SPT N > 50) occurred locally in the boreholes at depths of between 3.0m and 5.0m bgl, where the boreholes were terminated to prevent damage to the drilling equipment and tooling.

Disturbed soil samples were also collected from bored arisings for geochemical and geotechnical laboratory tests which are further discussed within section 6.0.

5.2.3 Machine Trial Pitting

Machine trial pits TP1 and TP2 and SP1 to SP3 were excavated to depths of up to 3.0m bgl using a Bobcat 2.5 tonne tracked excavator.

The trial pits were spatially located to enable visual inspection of the ground conditions as well as sampling of the overlying soils for geochemical and geotechnical laboratory tests which are further discussed within section 6.0.

TP1 and TP2 were excavated to 3.0m bgl, the maximum depth of excavation of the machinery, to assess ground and groundwater conditions pertinent for soil infiltration testing. SP1 to SP3 were subsequently completed to enable soil infiltration testing for soakaway design in accordance with BRE D365.

5.2.4 Dynamic Cone Penetrometer (DCP/TRL)

Six Dynamic Cone Penetrometer (DCP) tests (DCP1-DCP6) were undertaken to determine design parameters (California Bearing Ratio, or CBR) for road pavement construction in accordance with the Transport Research Laboratory (TRL), commencing at ground level, to a depth of 0.9 m bgl.

The tests were undertaken at the locations included in **Figures 5** and **6**.

5.3 GROUND CONDITIONS

The exploratory hole logs and photographs are presented within **Appendix II**.

Table 5.3: Summary of Ground Conditions

Unit	Description	From (m bgl)	To (m bgl)
Reworked Topsoil	Reworked Topsoil locally to depths of between 0.5m and 0.9m bgl.	GL	0.5 – 0.9
Made Ground	MADE GROUND typically comprising silty sandy gravelly CLAY. Gravel inclusions of flint, brick and concrete fragments and timber.	GL	0.3 – 1.1
River Terrace Deposits	Soft and firm, locally stiff and very stiff silty sandy gravelly, locally very gravelly CLAY/clayey SILT, with horizons of SAND and GRAVEL.	0.3 – 1.1	5.0+
	Loose to medium dense, medium dense and dense becoming very dense clayey silty locally gravelly SAND, and sandy GRAVEL.	3.1 – 4.6	5.6 – 5.9
Tarrant Chalk Member	Structureless CHALK of weathering Grade Dm/Dc	5.9	12.2
	Structureless CHALK of weathering Grade Dc	5.6	8.7
	CHALK of weathering Grade C	8.7 – 12.2	10.0 – 16.5
	CHALK of weathering Grade B	10.0 – 16.5	15.0 – 20.0
	CHALK of weathering Grade A	15.0 – 20.0	30.5+

5.3.1 Field Observations

The following visual and olfactory observations were made:

- Soft low strength soils noted locally to depths of between approximately 1.5m and 3.5m bgl in the SPTs, confirming observations of low and low to medium strength soils in the G&W exploratory holes (BH01 and BH02) to 3.0m bgl.
- Roots and rootlets were recorded locally during the site investigation works to depths of between 0.2m and 1.5m bgl.
- No discernible stains, or visual and olfactory evidence of contamination noted during the site investigation works.

5.4 GROUNDWATER LEVELS

5.4.1 Groundwater Levels: During Site Investigation Works

Groundwater was encountered during the site investigation works completed on 24, 28 and 29 April 2025 at the depths detailed in table 5.4.1.

Table 5.4.1: Groundwater During Investigation		
Location	**Depth – bgl (during GI)**	**Comments**
BH1	7.4m, rising to 6.9m	The water encountered in BH1 and BH2 is expected to represent the aquifers of the River Terrace Deposits and the Tarrant Chalk Member.
BH2	4.4m, rising to 3.0m	
WS1-WS9	Dry to depths of up to 5.0m	
TP1-TP2, SP1-SP3	Dry to depths of up to 3.0m	

5.4.2 Groundwater and Gas Monitoring Wells

Selected boreholes were converted to monitoring wells to enable standing groundwater level monitoring and ground gas monitoring. Wells were installed into 101mm diameter window sample boreholes using 63mm external diameter and 50mm internal diameter HDPE standpipe. Table 5.4.2 describes the construction of the wells.

Table 5.4.2: Monitoring Well Construction			
Location	**Depth of plain pipe and bentonite seal (m)**	**Response zone; depth of slotted pipe with gravel screen (m)**	**Depth of install (m)**
WS1	Ground level (GL)-1.0	1.0-3.0	3.0
WS5	GL-1.0	1.0-5.0	5.0
WS9	GL-1.0	1.0-5.0	5.0

5.4.3 Groundwater and Gas Post-Investigation Monitoring

In all instances and prior to completing groundwater monitoring and field measurements bulk ground gases and soil vapours were monitored using a GFM 435 Gas Analyser and miniRAE Photon-Ionisation Detector (PID) on the dates shown in table 5.4.3, which provides standing level groundwater 'dips' during post-investigation monitoring.

Table 5.4.3: Groundwater Monitoring Depths			
Location / Date	**Depth – bgl WS1**	**Depth – bgl WS5**	**Depth – bgl WS9**
8 May 2025	Dry to 2.95m	Dry to 4.99m	Dry to 5.06m
22 May 2025	Dry to 2.95m	Dry to 4.99m	Dry to 5.06m

Further to comments made regarding the groundwater within table 5.4.1, no groundwater was encountered to the maximum installed depth of 5.06m bgl.

Ground gas monitoring is discussed in section 10.0 of this report.

Field monitoring sheets are enclosed in **Appendix III**.

6.0 LABORATORY ANALYSIS

6.1 SOIL GEOCHEMICAL TESTING

Table 6.1 details the soil samples which were collected and submitted for geochemical analysis.

Table 6.1: Soil Geochemical Testing			
Location	**Strata Sampled**	**Objective**	**Analysis**
WS1 (0.5m)	Made Ground	Material at shallow depths is the greatest risk to human health via the dermal contact, ingestion and inhalation pathways and thus is the most intensely assessed stratum.	ES-1
WS2 (0.4m)	Made Ground		ES-1
WS3 (0.6m)	Made Ground		ES-1
WS4 (0.2m)	Made Ground		ES-1
WS7 (0.4m)	Made Ground		ES-1
SP1 (0.3m)	Made Ground		ES-1
TP1 (0.4m)	Made Ground		ES-1
WS4 (0.9m)	Natural Clay	To provide baseline concentrations of natural soils (<1m deep) where root growth will occur.	ES-1
WS9 (1.1m)	Natural Clay		ES-1
COMP1	Made Ground	Completed to enable waste classification of the overlying Made Ground for off-site disposal purposes	WAC
COMP2	Made Ground		WAC

Chemical sampling and testing targeted the overlying units of Made Ground and natural strata whereby virtue of surface deposition historical contaminants are most likely to be recorded. The purpose of sampling slightly deeper natural strata is to generate a baseline understanding of natural soil chemistry, particularly about the water-table/smear zone.

The analytical suites were chosen to provide a suitable screening in accordance with the potential contaminants identified within the site conceptualisation presented within section 4.5.

Soil samples for environmental quality analysis were sent to Eurofins Chemtest Limited.

6.2 SOIL GEOTECHNICAL TESTING

A programme of geotechnical laboratory testing was undertaken at K4 Soils Laboratory and Eurofins Chemtest Limited. Testing was completed on the fine and coarse soils encountered beneath the site. The test procedures used were generally in accordance with the methods described in BS1377:1990. Details of testing used are provided in table 6.3.

Table 6.3: Soil Geotechnical Testing

Test	Standard	Number of Samples
Atterberg Limits (and Moisture Content) *The objective of Atterberg limits and moisture content testing is to determine plasticity and volume change potential of fine (clay and silt) soils and the potential for desiccation to have occurred*	BS1377: 1990: Part 2: Clause 3.2, 4.5, 5.0	8 (8)
Particle Size Distribution (PSD) *The objective of PSD testing is to determine grading of coarse (sand and gravel) soils*	BS1377: 1990: Part 2: Clause 9.2	6
Triaxial Shear Strength (TXL) *The objective of triaxial shear strength testing is to determine the undrained shear strength of fine soils*	BS1377: 1990: Part 7: Clause 8 or 9	6
Aviron LC Suite - pH, water soluble sulphate, total sulphate & total sulphur *To enable concrete classification to be specified*	UKAS accredited	17 (including 9 within the ES-1 analysis)

6.3 SOIL SAMPLING PROTOCOL

All soil samples were collected from bored or excavated arisings using a trowel and following Aviron's standard protocols for soil sampling. To avoid cross contamination, the sampling equipment was cleaned using de-ionised water after each sample was retrieved. Clean latex gloves were used each time a soil sample was collected, and all samples were placed into clean sterilised jars for submission to the UKAS/MCERTS accredited laboratory.

All sample containers were labelled on-site immediately prior to filling. These samples were identified by a label placed on the body of each container and the following information was recorded; site name, date collected, unique sample number, soil sample depth.

Samples for geochemical analysis were then placed into a cool box containing ice packs to maintain refrigerated conditions following collection and transport to the laboratory.

7.0 ENVIRONMENTAL INTERPRETATIVE GUIDANCE

7.1 GENERIC QUANTITATIVE RISK ASSESSMENT

The purpose of a tier 2 GQRA is to determine the suitability of the site for proposed development and end use.

The site investigation shall collect soil samples whereby determinant chemistry measured in the soil through laboratory analysis have been compared with guidance values which are appropriate to the receptor under consideration. The guidance values or screening criteria applied shall be industry adopted generic values which following a screening of the laboratory analysis shall determine whether or not a site is contaminated, as defined under Part IIA of the EPA 1990 and specification in regard of the proposed development and identified receptors.

Where exceedances of guidance values or recorded a GQRA can be used to appraise risk and make recommendations in regard of further investigation, remediation and/or tier 3 Detailed Quantitative Risk Assessment (DQRA).

7.2 GUIDANCE USED FOR ASSESSING SOIL CONTAMINATION

Aviron has followed the technical approach on Land Contamination Risk Management (LCRM), accessed on gov.uk website and other available guidance to assess contaminant concentrations.

Details of the methodology and Aviron's position on the adoption of guidance values is outlined below.

The available chemical data, from soil samples tested, is sorted into appropriate datasets depending on sampling regime and ground conditions. An initial GQRA is completed using the relevant and industry available screening criteria and where appropriate, statistical modelling. Risks to human health shall be initially assessed by comparing soil chemical data against various published screening criteria. These have been sourced from the following and in order of preference:

- Category 4 Screening Levels (C4SLs) prepared by the Department of Environmental Food and Rural Affairs (DEFRA) and published March 2014.
- Phase 2 C4SLs prepared by CL:AIRE and published May 2021.
- Suitable 4 Use Levels (S4ULs) prepared by Land Quality Management/Chartered Institute of Environmental Health (LQM/CEIH) and published December 2014. LQM acknowledgement for use of S4ULs. *"Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3275. All rights reserved".*

- Soil Guidance Values (SGVs) prepared by the Environment Agency (EA)/DEFRA and published 2009.
- Soil Generic Assessment Criteria (GAC) prepared by Environment Industries Commission (EIC)/Association of Geotechnical and Geoenvironmental Specialists (AGS)/Contaminated Land: Application In Real Environments (CL:AIRE) and published 2010.

Aviron have adopted the above hierarchy in response to LCRM recommendations.

7.3 GUIDANCE USED FOR THE ASSESSMENT OF HAZARDOUS GROUND GAS

The principle influence for causing the migration of landgas in the ground is changes to barometric pressure. The most onerous landgas emission conditions on a site are usually observed following days of low or rapidly falling barometric pressure below 1000 millibars (mb).

Monitoring is usually performed over a period of several weeks or months in order to increase the chances of visiting the site on days when the conditions for monitoring worst-case results are correct. Gas monitoring results collected solely during high pressure conditions (>1000mb) may not provide a true value for worst case emission rates from the site.

Methane is produced by a number of processes, which can be biological or chemical in nature. The principal process is from the biogenic decay of organic material and is commonly found associated with landfill and organic marsh deposits or river silts. Methane can also be found associated with coal workings. It is explosive at concentrations of between 5 and 15%, with 5% being termed the lower explosive limit (LEL).

In assessing the risks from hazardous ground gas, reference has been made to the guidance from BS 8485:2015 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' and CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' 2007 which adopts a risk characterisation strategy based on the maximum flow (L/hour) and maximum steady stated concentration (% v/v) of methane and carbon dioxide from a site to derive gas screening values (GSV) in litres/hour which are comparable with the Modified Wilson and Card classification (shown in Table 8.5 of C665) for any site which isn't intended to be developed as low-rise housing with vented underfloor void.

It is noted bio-ground gas monitoring is precautionary.

8.0 ASSESSMENT OF GEOCHEMICAL SOIL RESULTS

The development proposed shall comprise a new multistorey commercial unit and therefore the commercial end use values from the guidance listed in section 7.2 shall be selected.

In order to select the appropriate Soil Organic Matter (SOM) value for appraisal of PAH and TPH the mean average SOM value was determined from the laboratory dataset and accordingly the 1% SOM value was selected.

Laboratory certificates of chemical analysis are presented in **Appendix IV** along with the chemical assessment criteria.

8.1 ASSESSMENT OF SOIL GEOCHEMICAL RESULTS

Table 8.1 provides a summary of the results for each determinand analysed when compared to the relevant assessment criteria.

Table 8.1: Summary of Geochemical Results

Location	Strata	Determinant	Measured Conc. (mg/kg)	Guidance Conc. (mg/kg)
WS1 (0.5m)	Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
WS2 (0.4m)	Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
WS3 (0.6m)	Made Ground	Benzo(a)anthracene	8.0	7.2
		Benzo(b)fluoranthene	9.6	2.6
		Benzo(a)pyrene	7.3	2.2
		Dibenz(a,h)anthracene	1.4	0.24
WS4 (0.2m)	Made Ground	Benzo(b)fluoranthene	2.6	2.6
		Benzo(a)pyrene	2.1	2.2
		Dibenz(a,h)anthracene	0.56	0.24
WS7 (0.8m)	Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
SP1 (0.3m)	Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
TP1 (0.4m)	Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a

WS4 (0.9m)	Natural Clay	All determinants recorded at acceptable concentrations	n/a	n/a
WS9 (1.1m)	Natural Clay	All determinants recorded at acceptable concentrations	n/a	n/a
Notes: Barium EIC Generic Acceptance Criteria (EIC GAC) is 1300mg /kg (Residential) Chromium is assumed to be chromium III (not chromium IV).				

8.2 DISCUSSION OF SOIL GEOCHEMICAL EXCEEDANCES

Seven samples were collected for chemical analysis from the overlying Made Ground and two from the underlying natural Clay.

Both samples obtained from the natural Clay recorded acceptable concentrations below the corresponding GAC.

Of the seven samples collected from Made Ground, two of the samples collected recorded elevated concentrations of PAH when compared to the corresponding GAC.

Figure 7 presents a Made Ground Contamination Plan, which has been overlain on a proposed development plan and highlights only the positions (shown in Table 8.1) where samples were collected and tested from the overlying Made Ground.

8.2.1 PAH

Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene has been recorded above their respective GACs in the Made Ground of positions WS3 and WS4 in the north-east of the site. PAH which is typically found within ash or ashy products. The discovery of shallow PAH contamination is adjacent to the site entrance and possibly sources from the stockpiling of ash or ashy products (asphalt) to await off-site removal.

It is likely the impacted Made Ground shall be removed from site during groundworks and any reduced level dig to enable construction of the new apartment blocks upon the positions of WS3 and WS4.

8.2.2 TPH, BTEX, MTBE, PCB, Metals, Metalloids, Inorganics and Asbestos

All remaining determinands, with the exception of Arsenic (Ground & Water Limited position WS2), were analysed from across the site at a frequency considered to be suitably representative of site conditions and concurs with the aforementioned investigation by Ground & Water Limited.

None of the results indicated that concentrations of these other determinands were above the GAC and considered to present a risk. The position of Ground & Water Limited WS2 in local to Aviron WS3 and WS4 and similarly is likely to be removed from site and subsequently encapsulated.

8.2.3 Conclusions

Active remediation is not considered necessary, other than ensure soft landscaping areas have a sufficient thickness of 'clean' Topsoil to sustain plant ground.

8.2.4 Waste Management and Disposal

Whilst the majority chemical concentrations are below the GACs which determine the potential for exposure risk to exist to end users, this does not guarantee the chemical composition of the in-situ soils will meet an 'inert' waste classification. Sample COMP1 suggests inert waste and sample COMP2 suggest non-hazardous waste. Thus an element of both inert waste disposal and non-hazardous waste disposal should be expected and can this can be confirmed by the waste management contractor, who upon presentation of the laboratory results shall be able to classify waste soil.

Consideration should also be given towards soils within BH2 from 1.8m to 5.5m where a diesel odour was noted.

9.0 HAZARDOUS GROUND GAS MONITORING

9.1 STRATEGY

As previously presented within table 5.4.2 monitoring well installations were constructed in order to enable precautionary ground gas monitoring following the outcome of the preliminary ground gas assessment, which determined a very low risk.

The installation of the monitoring wells have suitable response zones to enable the capture of ground gases which may possibly migrate through granular and fractured units beneath proposed homes. Each monitoring well was completed with a 1m thick bentonite seal from ground level to prevent atmospheric influence.

9.2 MONITORING

The presence of soil vapours was determined prior to bulk ground gas monitoring using a MiniRAE Photon Ionisation Detector (PID) from RAEs Systems. The presence of hazardous bio-gases including methane (CH4), carbon dioxide (CO2) and oxygen (O2) was determined using a GFM Infra-Red Gas Analyser from Ribble Enviro Limited. The flow rate and atmospheric pressure, in millibars (mb), was also measured during the monitoring process. Depth to groundwater was measured using an electronic dip meter.

Monitoring work was completed on the dates specified within table 10.2 which also summarises weather conditions and atmosphere pressure. To determine rising or falling pressures local 'online' weather trends from the Met Office and/or the monitoring apparatus were consulted.

Table 10.2: Background Gas Monitoring Data

Date	Atmospheric Pressure	Rising/Falling Pressure?	Worst Case Conditions?	Groundwater above response zone?
8 May 2025	1017mB	Falling	No	No
18 May 2025	1016mB	Falling	No	No

Note 2 of C665 indicates 'worst case' conditions occur during falling and sub-1000mB atmospheric pressures. Section 5.5.1 of C665 indicates 'worst case' conditions are likely to occur during weather conditions such as rainfall, frost or dry weather.

9.3 MONITORING

Table 9.3 summaries the results obtained which are enclosed in **Appendix III**.

Table 9.3: Summary of Monitoring Results

Gas	Measured Conc. Range (% v/v)		Comments
	Low	High	
CH_4	0.0 (<0.1)	0.0 (<0.1)	Methane was not detected (<0.1%) and thus is below the guidance value of 1% at which point the characteristic situation is advised to increase to CS2.
CO_2	0.2	1.5	Carbon dioxide has been detected at concentrations below the guidance value of 5% at which point the characteristic situation is advised to increase to CS2.
O_2	18.5	19.9	Oxygen has been recorded at ambient concentrations, above 16%, being the point where it is considered there is potential for asphyxiation.
Vapour*	0.4	1.7	Very low (PID) concentrations have been recorded. This concurs with the ground conditions and geochemical laboratory results suggesting the absence of soil vapour risk to new units.

*vapour concentration in parts per million (ppm)

Monitoring positions remained constant and intact. No replacement monitoring positions were installed during the period of this project. No damage was observed to the monitoring wells during works.

It is considered the integrity of the monitoring wells has not been compromised as there is no evidence of surface damage which may affect the underlying installations. There is a bentonite seal within the bored annulus preventing escape of ground gases and entry of atmospheric gases. The gas valve remained closed prior to all monitoring occasions so passive venting of ground gas is unlikely to have occurred as site visits were unannounced.

9.4 INTERPRETATION OF DATA

Under normal use of the site (i.e. above ground), the risk presented by methane and carbon dioxide is dependent on both the concentrations and the rate of flow. In accordance with Wilson and Card methodology specified in the CIRIA C655 document, Gas Screening Values (GSV) were determined using the formula below.

GSV =	(Maximum steady concentration / 100) x Flow rate
GSV measured in litres per hour (l/hr)	Maximum steady concentration measured in percent (%) Flow rate measured in l/hr.

Based on the maximum concentrations and flows recorded, the **GSV** for **methane** was **0.0 L/hr** and the **GSV** for **carbon dioxide** was **0.0l/hr**.

Based on the outcome of the PRA, the results of the precautionary monitoring and GSV for carbon dioxide which is between below 0.07l/h the site is considered to conform the Characteristic Situation 1 (CS1).

Bio-ground gas protection is not considered necessary.

However, information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level)', ***and that basic radon protection measures are required.***

10.0 REVISED RISK ASSESSMENT

10.1 REVISED SOURCES OF CONTAMINATION

Table 10.1 summarises the sources of contamination are considered to exist, following completion of the site investigation and interpretation of test results.

Table 10.1: Revised Sources

Source	Description	Key Contaminants of Concern/Comments
Revised Potential Sources		
1. Local soil contamination	Soil contamination is considered to be local to: • PAH within the Made Ground of Aviron WS3 and WS4 in the north-east of the site beneath the proposed new apartment block. • Arsenic within the Made Ground of Ground & Water Limited WS2in the north-east of the site beneath the proposed new apartment block/access road	PAH and Arsenic, which are expected to be removed from site during groundworks and encapsulated.
2. Asbestos	Risk of Asbestos Containing Soils (ACS) and Asbestos Containing Materials (ACMs) from former land uses	Asbestos was not detected within the soil samples submitted for analysis by both Site operatives should remain vigilant is the event of unpredicted discoveries.
3. Radon	Basic radon protection required.	Radon risk identified from BGS mapping.
No Longer Considered to be Potential Sources		
Site-wide soil contamination	Based on interpretation against residential end use values soil contamination is not considered to be site-wide and more local to PAH and arsenic contamination in the north-east of the site	n/a
Groundwater	Groundwater contamination is not considered to exist beneath the site	n/a
Bio-ground gases/vapours	Ground gas concentrations are considered to represent CS1 by both Ground & Water Limited and Aviron	n/a.

10.2 REVISED CONCEPTUAL SITE MODEL

Following interpretation of the laboratory results, site dynamics and the revision of potential soil contaminants within table 10.1 a revised conceptual model has been prepared and is presented in table 11.2.

Table 10.2: Revised Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
Source 1 Local soil contamination (north-west of site)	Construction workers	Direct contact	Unlikely	Mild	Low ***Note 10.*** Soil contamination is present in the north-west of the site in the form of impacted PAH and Arsenic Made Ground. The Made Ground is expected to be removed during groundworks and the area encapsulated with permanent hardstanding of the building footprint and access road. ***Action. Operatives to wear suitable Personal Protective Equipment.***	24
	End users	Direct contact	Unlikely	Mild	Very Low *See Note 1o.*	25
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 10.*	26
	Soft landscaping	Root uptake	Likely	Medium	Moderate ***Note 11.*** Made Gound is likely to be unsuitable to sustain new plant growth in areas of proposed soft landscaping. ***Action. Import suitable thickness of sub-soil and Topsoil (BS3882) to sustain new planting.***	27
	Water supply pipes	Direct contact	Low likelihood	Mild	Low ***Note 12.*** Generally low concentrations of determinants. ***Action. Submit report to local water authority for water main material specification.***	28
	Buildings & infrastructure	Direct contact	Low likelihood	Mild	Moderate ***Note 13.*** Refer to section 11.7.	29

Table 10.2: Revised Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low ***Note 14***. Ground conditions are not considered to present a risk to controlled waters (and ecology).	30
	Surface water	Run-off	Unlikely	Mild	Very Low *See Note 14*.	31
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 14*.	32
Source 2 Asbestos	Construction workers	Inhalation	Low likelihood	Mild	Low ***Note 15.*** Asbestos has not been recorded within Made Ground of the two site investigations. However, due to the former occupancy of the site there remains potential for ACMs sporadically within Made Ground from former buildings. ***Action. Operatives to wear suitable Personal Protective Equipment and prepare Discovery Strategy to manage unexpected discoveries.***	33
	End users	Inhalation	Unlikely	Mild	Very Low ***Note 16.*** Asbestos, if encountered sporadically is expected to either be removed during groundworkers are encapsulated.	34
	Adjacent land users	Inhalation	Unlikely	Mild	Very Low *See Note 15.*	35
Source 3 Radon	End users	Inhalation of vapours/gas	Likely	Medium	Moderate ***Note 17.*** TBGS mapping indicates the site is in an area where 5-10% of properties are above the action level. ***Action. Install basic radon protection.***	36

10.3 RISK COMMENTARY

10.3.1 Contamination Risk from Soil to Human Health – Construction Workers

The concentrations of soil determinands are unlikely to present a short-term exposure risk to adult construction workers, specifically from the dermal contact, ingestion and inhalation pathways. Nonetheless it is customary to advise that groundworkers should ensure suitable PPE is worn as a precaution during development which would include:

- Gloves to prevent dermal contact with any contaminated soils. It is advised that disposable latex gloves are worn beneath the outer 'work' gloves.
- To prevent ingestion of contaminated soils construction workers should avoid putting hands or objects in their mouth whilst on-site.
- To prevent ingestion of contaminated soils prior to eating or drinking, construction workers should ensure their hands are properly washed, rinsed and dried.
- To prevent inhalation of contaminated soils and asbestos fibres (though not detected thus far) construction workers should wear dust masks on dry and windy days and when working around the northern barn face fit P3 filter masks. On damp or wet still days the risk of dust inhalation is low.

10.3.2 Contamination Risk from Soil to Human Health – End Users

Concentrations of soil determinants are unlikely to present a long-term exposure risk to site end users based on the application of the commercial end user GACs.

Furthermore, the site is likely to be covered in permanent hardstanding comprising the new building footprint, parking and loading bay, thus breaking the pollutant linkage.

Should narrow planted boarders be created to soften the scheme, clean imported Topsoil shall be necessary to sustain new plant growth which shall limit any exposure to native Made Ground beneath.

Active remediation to mitigate exposure risk to end users is not considered necessary.

10.3.3 Contamination Risk from Soil to Human Health – Domestic Water Supply

The geochemical laboratory results should be provided to the local water authority to ensure the correct materials are chosen for water supply pipes. Following the formal withdrawal of WRAS Guidance Note No. 9-04-03 (October 2002) "The Selection of Materials for Water Supply Pipes to be Laid in Contaminated Land" the UK Water Industry Research Ltd (UKWIR) report entitled "Guidance for the Selection of Water Supply Pipes

to be used in Brownfield Sites" (Reference 10/WM/03/21; ISBN: 1 84057 5697) should be consulted.

Generally, all services should be placed within dedicated runs backfilled with clean imported material.

The local water authority should be consulted on the design of new water mains.

10.3.4 Contamination Risk from Soils and Groundwater to Controlled Waters

Soil contamination is not considered to present a risk to controlled waters.

10.3.5 Risk from Ground Gas

The preliminary ground gas risk assessment suggested a very low risk from bio-ground gas and vapour ingress which upon completion of two rounds of monitoring confirms a similar level risk and a Characteristic Situation of CS1.

Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level)', and ***that basic radon protection measures are required.***

Notwithstanding the above, a Radon report is recommended immediately prior to any re-development plans as radon guidance periodically changes and the above advice may be outdated by the time of any re-development. It is therefore recommended an address-specific radon GeoReport be obtained from British Geological Survey, which is appropriate for redevelopment sites.

11.0 GEOTECHNICAL ASSESSMENT

This section provides a geotechnical assessment in connection with the proposed development as described above and considers the GEO Limit State: failure or excessive deformation of the ground, in accordance with EN 1997 Eurocode 7: Geotechnical Design (and the UK National Annex to Eurocode 7) where applicable.

It is assumed for the purposes of this assessment that the finished ground floor level of the proposed development building is the same as the ground level at each of the exploratory hole locations.

The assessment of the stability of any slopes or retaining structures across or adjacent the site, the requirement for additional retaining structures and the requirements for cut and fill that may be required to facilitate construction is outside the scope of this report. Although the GeoInsight reports indicates that there is a very low qualitative risk of ground dissolution of soluble rocks for the north-west of the site, an assessment to determine the quantitative risk of ground dissolution of soluble rocks is outside the scope of this report. Any solution features encountered during the groundworks phase will need to be assessed accordingly.

Where applicable the following assessment includes bearing resistance assuming conventional construction only and no allowances have been made for interaction between existing adjacent foundations and proposed foundations or loads.

Eurocode 7 Section 2.1 Basis for Geotechnical Design indicates that for each geotechnical design situation it shall be verified that no limit state is exceeded. Geotechnical design requirements have been established by three Geotechnical Categories, 1, 2 and 3. For the purpose of this assessment the development is Geotechnical Category 2: which include conventional types of structure and foundation with no exceptional risk or difficult or loading conditions.

Designs for structures in Geotechnical Category 2 should normally include quantitative geotechnical data and analysis to ensure that the fundamental requirements are satisfied. Routine procedures for field and laboratory testing and for design and execution may be used for Geotechnical Category 2 designs.

11.1 GROUND MODEL

Table 11.1 overleaf, provides the ground model for the site as determined from ground conditions encountered during the site investigation works.

Table 11.1: Ground Model				
Stratum	**Description**	**Top of Stratum (m bgl)**	**Bottom of Stratum (m bgl)**	**Average Thickness (m)**
Reworked Topsoil	Reworked Topsoil	GL	0.5 – 0.9	0.6
Made Ground	Silty sandy gravelly CLAY	GL	0.3 – 1.1	0.62
River Terrace Deposits	Silty sandy gravelly CLAY/SILT, with SAND and GRAVEL	0.3 – 1.1	5.0+	3.53
	Clayey silty gravelly SAND, and sandy GRAVEL.	3.1 – 4.6	5.6 – 5.9	1.0
Tarrant Chalk Member	Structureless CHALK of weathering Grade Dm/Dc	5.9	12.2	6.3
	Structureless CHALK of weathering Grade Dc	5.6	8.7	3.1
	CHALK of weathering Grade C	8.7 – 12.2	10.0 – 16.5	2.8
	CHALK of weathering Grade B	10.0 – 16.5	15.0 – 20.0	4.25
	CHALK of weathering Grade A	15.0 – 20.0	30.5+	-
Notes				
Hardstanding noted locally and possible infilled basement beneath the former main building. Softened soils locally to depths of between approximately 1.5m and 3.5m bgl in the SPTs. Structureless CHALK encountered to depths of between 8.7m and 12.2m bgl.				
Groundwater				
Groundwater at 6.9m and 3.0m bgl in BH1 and BH2 during the ground investigation works (April 2025). During monitoring, the installations in WS1, WS5 and WS9 were dipped 'dry' to the maximum installed depth of 5.06m bgl (May 2025).				

11.2 FOUNDATION DESIGN CONCEPT

The ground model and the following considerations will need to be taken in account in determining the foundation solution for the proposed development building:

- MADE GROUND to depths to depths of up to 1.1m bgl, possible infilled basement and obstructions.
- The depth to competent strata and the required bearing resistance of the proposed building.
- Temporary works required for excavations in MADE GROUND, coarse and softened soils and dewatering of possibly elevated seasonal groundwater, particularly in wetter winter months.

Overlying CLAY soils of the River Terrace Deposits are of medium-volume change potential, above coarse soils of the River Terrace Deposits of negligible volume change potential. The underlying CHALK soils are of low and medium density.

Due to the anticipated bearing resistance needed to support the proposed building, and the low strength soils encountered to depths of up to 3.5m bgl, a piled foundation solution is expected to be required.

11.2 EXCAVATION CONDITIONS

Excavation of the materials encountered during the ground investigation should be achieved using conventional hydraulic excavation techniques. Hydraulic breaking equipment is expected to be required to remove the remaining buildings and the overlying hardstanding across the site, as well as the possibility of an infilled basement and below ground obstructions.

11.2.1 Temporary Works

From the ground investigation undertaken, excavations in the MADE GROUND and natural coarse soils are not expected to remain stable in the short term. Due to the soils noted at shallow depth, and the requirement for excavations to facilitate the construction in potentially elevated groundwater, care should be taken to ensure that instability of excavations does not affect existing structures and services (e.g. foundations, roads, boundary walls or buildings) both on and off-site, and temporary support is expected to be required in order to achieve this. Further advice should therefore be sought from the appointed structural engineer and specialist contractor regarding temporary works.

General guidance can be found within CIRIA Report 97: Trenching Practice, dated 2001.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times.

11.2.2 Dewatering

Groundwater was noted in BH2 at a depth of 3.0m bgl during the ground investigation works of April 2025. However, groundwater was not encountered during the return monitoring in WS1, WS5 and WS9 to the maximum installed depth of 5.06m bgl (as of May 2025).

On the basis of the data obtained; dewatering may be required in shallow excavations beneath the site, should the seasonal water level rise during construction works.

Groundwater is expected to rise in wetter winter months, and ongoing groundwater monitoring is recommended to determine the seasonal groundwater level below the site.

Consideration should be given to a summer build programme when groundwater is expected to be lower.

11.3 EXISTING SERVICES/SUBSTRUCTURES

Due to the historical development of the site environs, existing services or sub-structures should be anticipated, such as the possibility of an infilled basement beneath the main building centrally within the site.

Where foundations or obstructions are encountered during excavations for the proposed foundations, all new foundations should be extended downwards to fully penetrate all redundant former construction.

11.4 BEARING STRATA

As discussed, due to the anticipated bearing resistance needed to support the proposed building, and the low strength soils encountered to depths of up to 3.5m bgl, a piled foundation solution is expected to be required.

11.4.1 Atterberg Limits and Material Properties

Atterberg limits tests conducted on the fine soils of the River Terrace Deposits at depths of between 1.0m and 3.0m bgl indicate that the strata comprise inorganic CLAY of low and intermediate plasticity (CL/CI). The modified plasticity index was determined to be between 10% and 26% indicating soils of low and medium-volume change potential. Locally the soils in WS4 at 2.0m, WS6 at 2.0m and WS9 at 3.0m are noted to be non-shrinkable with a MPI of <10%.

The results of undrained triaxial testing using samples from BH1 and BH2 at depths of 1.0m bgl indicate that the soils are classified as being of high and medium strength, with undrained shear strength of 91kPa and 68kPa respectively.

The results of particle size distribution analysis indicates that the coarse soils from the River Terrace Deposits comprise clayey gravelly fine to medium SAND, and clayey sandy fine to coarse GRAVEL of negligible volume change potential.

For the purposes of this assessment and in accordance with NHBC Standards Chapter 4.2, Building Near Trees, the overlying fine and coarse soils beneath the site are classified as being of medium and negligible-volume change potential respectively.

Saturation moisture content (SMC) tests indicate that in accordance with CIRIA C574, Engineering in Chalk, 2002, the chalk soils tested at depth are classified as being of low and medium density.

11.4.2 Desiccation

Using the ratio of the moisture content (MC) to the liquid limit (LL) (an empirical indicator of desiccation, after Driscoll, 1983), the test results indicate that locally the shrinkable strata tested beneath the site are potentially desiccated (MC:LL ratio to 0.45). An assessment in accordance with BRE 412 Desiccation in Clay Soils, 1996, using the shear strength and material property profiles, including liquidity index, indicates that the soils beneath the site are potentially desiccated to the localised maximum testing depths of up to 2.0m bgl.

Desiccated fine soils (silt and clay) result from moisture being withdrawn from the soil, typically by root action. Heave forces occur following the re-hydration of these soils, by swelling on account of increased moisture content.

Moisture content within fine soils can increase due to seasonal weather variations (rain) and also the removal of trees, whereby moisture is no longer being drawn from the soil by root action. The effect of heave is increased when trees are removed. The upward heave force can lift foundations causing structural damage (cracking of masonry, movement of door/window frames). Conversely during periods of dry weather, the moisture content reduces causing fine soils to shrink and the upward heave force to reduce; in such an event the foundation (re)settles. To remove the risk of continued and abnormal movement beneath the base of new foundations due to swelling and shrinking of fine soils the foundations should be placed beneath the desiccated zone.

Although foundations are likely to be extended below the desiccated zone, on piles, mitigation measures to prevent heave in the fine soils encountered across the site should be incorporated into the below ground construction.

The soil sampling and testing undertaken provides for a preliminary assessment only based on limited sampling and testing locations. To enable a comprehensive desiccation assessment, consideration should be given to additional soil sampling, in-situ testing and profiling and laboratory analysis including soil suction tests.

11.4.2 Design Parameters

Characteristic values for design parameters for the strata encountered beneath the site are included in table 11.4.2.

In the absence of laboratory triaxial test data an estimated critical state angle of shearing resistance (ϕ'_{crit}) of 26° and 30-32° is assumed for the CLAY and SAND/GRAVEL overlying the site, using Tables 2 and 4 of BS8002:1994 September 2001. The undrained cohesion is assumed to be zero, and the coarse soils are assumed to rounded and locally uniformly graded.

Typical values of the angle of shearing resistance (ϕ') have also been determined using CHALK of weathering Grade Dm, Dc, C, B, A using BS8002:1994 September 2001 and CIRIA C574, Engineering in Chalk, 2002.

Table 11.4.2: Design Parameters

Strata		Volume Change Potential	Unit Weight (kN/m³)	Critical State Angle of Shearing Resistance (ϕ'_{crit})	Typical Angle of Shearing Resistance (ϕ')	Worst Credible Angle of Shearing Resistance (ϕ')
RTD	Fine	Medium	17-19	26		
	Coarse	Negligible	19	30-32		
CHALK – Dm, Dc		Negligible (assumed)	19.1-19.6	30	31	29
CHALK – C, B, A		Negligible	19.1-19.6	35	39	34

Please note that when using this data for design purposes, the effects of eccentric loading are taken into account, and that the bearing pressure is limited to account for maximum tolerable settlement beneath the structures and adjacent properties.

Geotechnical laboratory material property test results are presented within **Appendix V.**

11.5 TREE INFLUENCE ON FOUNDATIONS

When considering the influence of trees on foundations, the material properties of the strata beneath the site and the distance and species of the trees to the foundations are the determining factors.

For the purposes of this assessment the overlying natural fine and coarse at shallow depth beneath the site are classified as being of medium and negligible volume change potential respectively.

It is anticipated that the proposed development building will be supported on piled foundations, and an adjustment to foundation depths in accordance with NHBC Standards Chapter 4.2, Building Near Trees, 2023 is therefore not required.

Mitigation measures to prevent heave in the overlying desiccated CLAY soils encountered should be incorporated into the below ground construction. Mitigation measures to prevent heave should extend to all aspects of in-ground construction, which may include services such as drainage and manholes.

Mitigation measures to protect existing adjacent tree species during the construction process may need to be considered.

11.6 FOUNDATION TYPE, DEPTH AND ALLOWABLE BEARING PRESSURE

11.6.1 Trench Fill/Strip Foundations

Due to the anticipated bearing resistance required, the low shear strength soils encountered to depths of up to 3.5m bgl, confirming the ground conditions noted in the Ground & Water Limited boreholes (BH01 and BH02), and the requirements of temporary works including excavation stability, a conventional shallow foundation solution is not considered to be viable for the high-rise structures.

Consideration should therefore be given to supporting the proposed development building on piled foundations.

It should be noted that the above recommendations have been made using data in the cable and percussion and window sample boreholes, as well as the trial pits completed.

11.6.2 Piled Foundations

It is anticipated that bored and continuous flight auger (CFA) piles would be appropriate for the site. However temporary casing is expected to be required given the ground and groundwater conditions encountered.

Given the proximity of the neighbouring premises, driven piles are not considered appropriate due to potential and undesirable ground disturbance. Premature refusal may also occur in the shallower SAND and GRAVEL of the River Terrace Deposits.

Buried concrete and other obstructions will need to be addressed prior to the commencement of piling.

The advice of a piling specialist should be sought to determine the working loads of their proprietary piling technique when considering the ground and groundwater conditions encountered beneath the site, and the health and safety implications of working within the confines of the site and adjacent neighbouring properties.

Structureless CHALK was encountered at depth below its sub-crop surface. The risk remains that dissolution features may be present which have not been encountered in this investigation. The piling specialist should therefore advise what ground conditions are assumed in their design and what contingencies are in place should voids be encountered during the installation of piles.

11.6.3 Floor Slabs and Heave

It is assumed at this stage that the ground floor slab beneath the proposed development building will be suspended on ground beams.

Mitigation measures to prevent heave in the overlying desiccated fine soils should be incorporated into the below ground construction.

Mitigation measures to prevent heave should extend to all aspects of in-ground construction, which may include services such as drainage and manholes.

11.7 CONCRETE CLASSIFICATION

In accordance with Building Research Establishment (BRE) Special Digest 1: 2005 - Concrete in Aggressive Ground, the following laboratory test data has been used to derive classifications for buried concrete (Table C1, natural ground locations) beneath the site:

- Soluble Sulphate (2:1 extract) – 0.01 to 0.44g/l
- pH – 7.7 to 8.6
- Total Sulphate SO_4 – 0.018 – 0.26%
- Total Sulphur – 0.02 – 0.08%
- Total Potential Sulphate – 0.06 – 0.24%
- Oxidisable Sulphide < 0.3%

"*BRE guidance suggests that 'if significant number of determination of oxidisable sulphides is above 0.3%, then use the results of total potential sulphate to determine the concrete class*".

Oxidisable sulphides have not been calculated above 0.3% SO_4 in the samples tested which do not exceed the threshold where the concrete classification is based on oxidisable sulphide and total potential sulphate.

Based on the results obtained for soluble sulphate, the Design Sulphate (DS) Class for shallow buried concrete beneath the site is DS-1. Assuming mobile groundwater (secondary and principal aquifers), the Aggressive Chemical Environment for Concrete (ACEC) Class is AC-1.

It should be noted that additional considerations for the determination of concrete class and appropriate aggregate use are set out in BRE Special Digest 1. These are considerations specific to the soil type, the proposed development and the type of concrete foundations to be used at the site.

Laboratory results for the pH, sulphate and sulphur testing are included within **Appendix IV**.

11.8 PAVEMENT DESIGN

The results of DCP/TRL testing indicate CBR values bottoming out at 2.8% to 8.3% for the overlying horizons, at the locations tested across the site.

However, due to the potential for desiccation to have artificially increased the CBR value locally, consideration may need to be given to an estimated design CBR value of 3% and 4% for thin and thick construction respectively for a 'silty clay' (PI < 30%) in accordance with Design Guidance for Road Pavement Foundations IAN 73 06 HD25[rev1] 2009.

The results of DCP testing are enclosed in **Appendix V**.

11.9 SOAKAWAY DRAINAGE

Soil infiltration tests were undertaken within trial pits SP1 to SP3 in general accordance with Building Research Establishment (BRE) Digest D365, February 2016, Soakaway Design.

The trial pits were excavated to depths of between 2.0m and 2.5m bgl and tested to determine the suitability for conventional soakaways in the overlying soils encountered at these locations.

Excavation of the trial pits was completed at a steady rate and the trial pits were rapidly filled with a tankered water supply. The subsequent fall in water level was observed over the time period specified within the table of results.

Three water fills were completed within each trial pit, which is indicated within table 11.9 along with the infiltration rates and comments.

Table 11.9: Soil Infiltration Rates				
Location (Test no.)	**Testing depths (bgl)**	**Strata Tested**	**Infiltration Rate (m/s)**	**Comments**
SP1 (T1)	0.83m – 2.0m	CLAY/SILT	8.47×10^{-6}	25% fill levels not reached after 140-240 minutes. Extrapolated rate determined. Tests not fully compliant.
SP1 (T2)	0.79m – 2.0m	CLAY/SILT	8.23×10^{-6}	
SP1 (T3)	0.8m – 2.0m	CLAY/SILT	5.84×10^{-6}	
SP2 (T1)	0.81m – 2.0m	CLAY/SILT	1.72×10^{-5}	75% and 25% fill levels reached after 130 minutes. Moderate to poor infiltration rate determined. Test partially compliant.
SP2 (T2)	1.26m – 2.0m	CLAY/SILT	1.26×10^{-5}	25% fill levels not reached after 180 minutes. Extrapolated rates determined. Tests not fully compliant.
SP2 (T3)	1.07m – 2.0m	CLAY/SILT	1.35×10^{-5}	
SP3 (T1)	0.8m – 2.5m	CLAY/SILT	2.36×10^{-4}	75% and 25% fill levels reached after 20-40 minutes. Moderate to good infiltration rates determined. Tests fully compliant.
SP3 (T2)	0.8m – 2.5m	CLAY/SILT	1.04×10^{-4}	
SP3 (T3)	0.84m – 2.5m	CLAY/SILT	1.17×10^{-4}	

The Chalk beneath the site is of low density, however, soakaway drainage is unlikely to discharge directly into Chalk. It is recommended that the Local Authority, build warranty providers and additional stake holders are consulted to determine if their preference is to follow the advice of CIRIA C574 (Engineering in Chalk, 2002) or not. C574 advised that where the chalk is of low density, or its density is not known, soakaways should be sited at least 10m away from any foundations, provided areas of dissolution can be avoided.

Shallow soakage drainage in the soils overlying the site may be suitable for the new development subject to design requirements, the proposed locations of soakaways, and the requirements of the Local Authority, build warranty providers and, if necessary, CIRIA C574.

Soil infiltration test results are included within **Appendix VI**.

12.0 CONCLUSIONS AND RECOMMENDATIONS

This tier 1 PRA desk study and Site Investigation including tier 2 GQRA has provided an assessment of the site's history, geo-environmental setting and an evaluation of ground conditions.

12.1 ENVIRONMENTAL

Table 12.1 summarises the pertinent environmental risks providing advice on further works and assessment.

Table 12.1: Environment Risk Summary

Medium	Item	Risk Description	Comments/Recommendations
Soils	1	Undiscovered soil contamination, such as asbestos from former building.	***Prepare Discovery Strategy to manage any unexpected soil contamination discoveries.***
	2	Any imported Topsoil should be chemically suitable for use in private gardens.	Import suitable Topsoil (BS3882) to sustain planting which can be verified my means of a verification plan and subsequent report.
	3	Ensure material encountered is suitable for desired water main.	Consult local water authority prior to water main installation.
	n/a	PAH and Arsenic Made Ground contamination in the north-west of the site.	Made Ground is expected to be removed during groundworks and subsequently encapsulated by permanents hardstanding of the building footprint and access road.
Radon	n/a	Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is in an Intermediate probability radon area (5 to 10% of homes are estimated to be at or above the Action Level)', and ***that basic radon protection measures are required.*** Notwithstanding the above, a Radon report is recommended immediately prior to any re-development plans as radon guidance periodically changes and the above advice may be outdated by the time of any re-development. It is therefore recommended an address-specific radon GeoReport be obtained from British Geological Survey, which is appropriate for redevelopment sites.	
Bio-ground Gas	n/a	Preliminary risk assessment and gas monitoring has determined very low risk from ground gas. Two rounds of precautionary monitoring has been completed which has determined acceptable gaseous concentrations. Bio-ground gas protection is not considered necessary.	
Groundwater	n/a	Ground conditions are not considered to present a risk to groundwater or controlled waters.	

Once the above risks have been evaluated/implemented the environmental risk assessment can be considered complete and the development suitable to proceed.

12.2 GROUND HAZARDS SUMMARY

This report and the Clients preferred foundation solution should be presented to the Local Authority or appropriate build warranty provider for approval prior to construction. Table 12.2 summarises the pertinent Ground Hazards Summary.

Table 12.2: Ground Hazards Summary

Construction Issue	Ground Hazard	Recommendation
Below Ground Obstructions	Shallow foundations, Made Ground, the possibility of an infilled basement and hard surfacing should be anticipated at shallow depth beneath the site.	Shallow obstructions likely to be removed with conventional excavation plant, machinery and breaking equipment. An allowance for casing should be made in natural coarse strata during the construction of piles.
Foundations	Low shear strength soils encountered to depths of up to 3.5m bgl, confirming ground conditions noted in the G&W boreholes (BH01 and BH02). Due to the required bearing resistance, a conventional shallow foundation solution is not expected to be viable for the proposed building. Shallow groundwater not encountered during return monitoring to the maximum installed depth of 5.06m bgl (May 2025)	Consideration should be given to supporting the proposed building on piled foundations. Dewatering not expected to be required in shallow excavations, however, groundwater expected to rise, particularly during wetter winter months. Consider ongoing groundwater monitoring. Shoring expected to be required in coarse soils. Overlying CLAY of medium volume change potential, above SAND/GRAVEL soils encountered of negligible volume change potential (NHBC Chapter 4.2, Building Near Trees).
Floor Slab and Heave	Assumed suspended at ground level.	Heave protection in overlying CLAY soils where encountered. Mitigation measures to prevent heave should extend to all aspects of in-ground construction, which may include services such as drainage and manholes.
Buried Concrete	Non-aggressive ground conditions encountered.	Concrete classification determined as DS-1, AC-1.
Drainage	Shallow soakaway drainage may be effective for the new development subject to design requirements. Low density chalk soils encountered.	Consider ongoing monitoring to determine the seasonal groundwater level beneath the site. Design in accordance with CIRIA C574 may be necessary and further consultation in this regard should be made, which may include adopting appropriate stand-off distance between soil infiltration devices and foundations.

13.0 PROJECT INSTRUCTION AND LIMITATIONS

13.1 SCOPE OF WORKS

The following scope of work was undertaken to an agreed brief set out in Aviron's proposal and involves the following:

- Two cable and percussion boreholes to 30.5m bgl to enable a piled foundation solution.
- Nine window sample boreholes to depths of up to 5.0m bgl, including SPTs at 1m intervals.
- Install three of the boreholes with monitoring pipe to enable return gas and groundwater readings and groundwater sampling.
- Machine excavated trial pits to depths of up to 3.0m bgl to enable soil infiltration testing.
- Log the strata within each exploratory hole noting any water strikes.
- Collect disturbed soil samples from exploratory holes and submit for geochemical laboratory tests to determine the presence or absence of soil contaminants, and geotechnical material property tests to enable foundation recommendations and allow roadway and drainage design.
- All soil samples shall be collected in accordance with the instruction and ground conditions and submitted to UKAS/MCERTS accredited laboratories for testing.
- Prepare an interpretative GERA report to interpret ground conditions with respect to potential environmental risks and provide recommendations for foundation design and engineering parameters.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

13.2 PUBLISHED GUIDANCE

This report follows the technical approach presented on Land contamination risk management (LCRM), accessed on gov.uk website. The guidance replaced the Contaminated Land Report 11 (CLR11) "Model Procedures for the Management of Land Contamination" prepared by the Environment Agency in 2004. CLR11, which was withdrawn in 2020, provided guidance on the application of management processes when assessing potentially contaminated land.

This project and report have been designed to fulfil the information requirements set out in LCRM.

This report is additionally prepared in accordance with current guidance notes, standards and practices as set out by the Environment Agency and statutory organisations in order to establish potential and significant contaminant linkages as defined in Part IIA of the Environmental Protection Act 1990.

13.3 LIMITATIONS

Aviron's scope of work has been designed to meet the timeframe and as such it may follow that further work would be prudent upon evaluation of the ground conditions. The scope of work provided shall provide a view of site conditions and understanding of potential geo-environmental risks and possible mitigation procedures.

The information used in this report has been derived from the site investigation, which in turn were based on known current and historical land uses identified at the site and surrounding area, available to Aviron at the time of the investigation.

Intrusive points chosen relate to the data collected and the risk assessment and recommendations will rely on these points only. It therefore follows that some areas of the site will not be examined. It is always possible that some areas not investigated may contain conditions which would be impossible to determine due to lack of evidence or time and budget restrictions.

This report provides recommendations for foundation design based upon the ground conditions encountered and where possible makes predictions for possible variations in ground conditions. However, it is always possible that not all variations in ground conditions can be accounted for and shall also be dependent upon design loadings and foundation construction techniques used. It should be acknowledged that ground conditions may vary from intrusive point to intrusive point and without undertaking continuous investigation it is impossible to entirely understand variations in ground conditions. Our recommendations should therefore not supersede the project's Consulting Structural and Civil Engineers design.

This report comprises a Ground Investigation Report in accordance with BS EN 1997-2, unless otherwise stated. This report does not constitute a Geotechnical Design Report (BS EN 1997-2) and geotechnical recommendations in this report are for guidance only.

In accordance with the BS EN 1998-1:2004+A1:2013 'Eurocode 8: Design of Structures for Earthquake Resistance – Part 1', the UK is located in an area of very low seismicity, and seismic loading need not be considered.

Unless otherwise stated, a preliminary or detailed risk assessment of unexploded ordnance (UXO) is outside the scope of this report.

Also, unless otherwise stated, an assessment of invasive species such as Japanese Knotweed and Himalayan Balsam is outside the scope of this report.

Should changes in legislation, statutory requirements or industry practices occurred following issue of this report, this report should be viewed in light of these changes.

Should a notable time period elapse between the date issue of this report and the date of application of this report changes to site dynamics may occur and in particular the site inspection notes may no longer be applicable should any change of use occur to the site in the interim.

14.0 REFERENCES AND OTHER SOURCES OF INFORMATION

Previous Reports

Ground & Water Phase 2 Site Investigation – reference GWPR4771/SIR, dated June 2022

References

Landmark Envirocheck database search report package reference 376556175 dated 12 May 2025

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BS EN ISO 14688-2:2004 Geotechnical investigation and testing – Identification and Classification of Soil – Principles for a Classification

BS EN ISO 22475-1:2006 Geotechnical investigation and testing - Sampling Methods and Groundwater Measurements

BS EN ISO 22476-3:2005 Standard Penetration Test

BS EN 1997-1.2004+A1:2013 Eurocode 7 Geotechnical Design Part 1 General Rules

BS EN 1997-2.2007 Eurocode 7 Geotechnical Design Part 2 Ground Investigation and Testing

NA to BS NA+A1:2014 to EN 1997-1.2004+A1:2013 UK National Annex to Eurocode 7 Geotechnical Design Part 1 General Rules

NA to BS EN 1997-2.2007 UK National Annex to Eurocode 7 Geotechnical Design Part 2 Ground Investigation and Testing

BS 8485:2015 Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

CIRIA C574 'Engineering in Chalk' 2002

CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' 2007

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SR2: Human health toxicological assessment of contaminants in soil, Science Report SC050021/SR2, Environment Agency, August 2008

SR7: Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Science Report SC050021/SR7, Environment Agency, November 2008

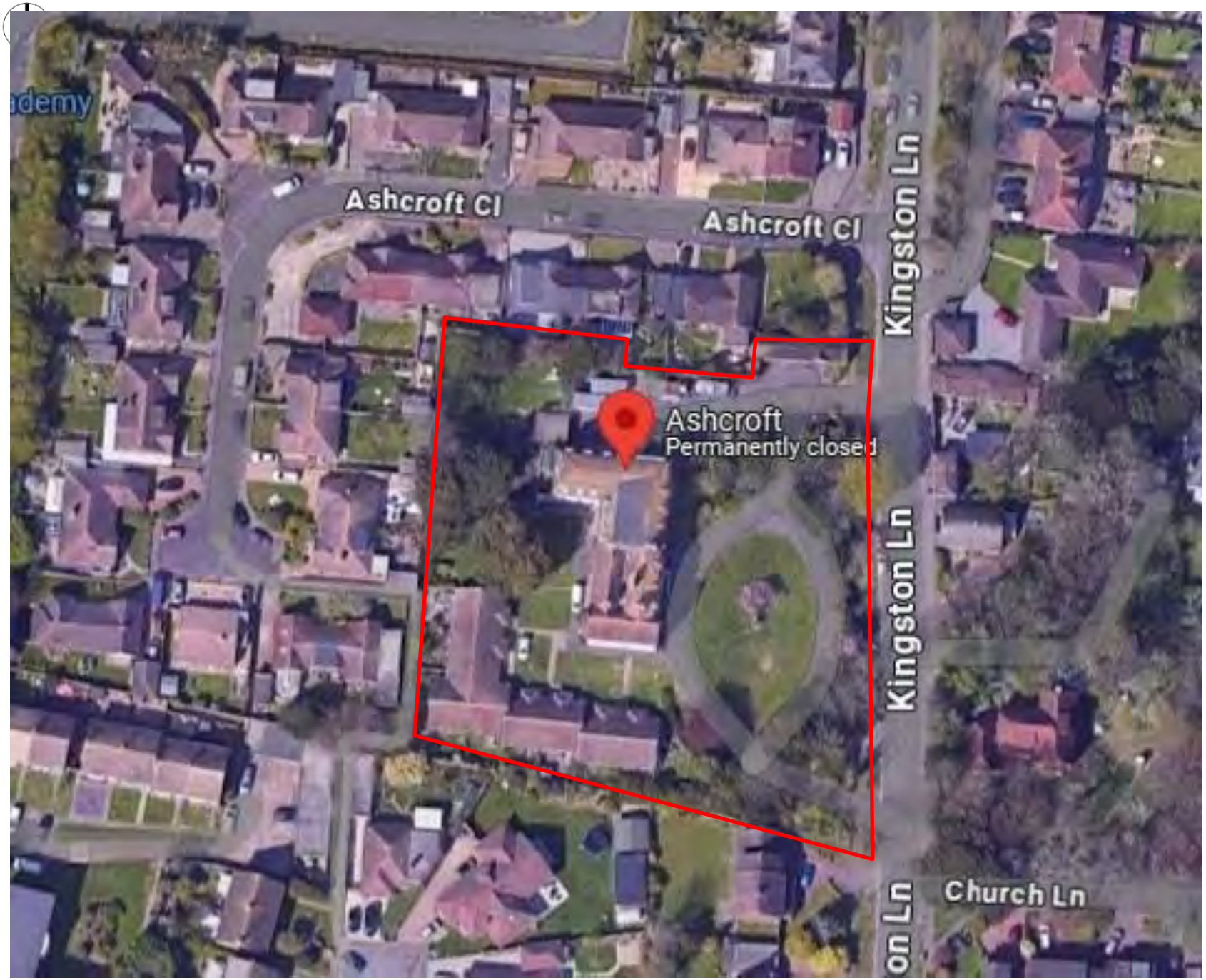
Stroud M A 1974. The Standard Penetration Test in Insensitive Clays and soft Rocks – Proc. ESOPTI 2(2) : 367-375

Stroud M 1988. The Standard Penetration Test - Its Application and Interpretation, ICE Geotechnical Conference on Penetration Testing in the UK

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Figures

1	Site Location Plan
2	Pre-Clearance Site Layout Plan
3	Site Photographs
4	Proposed Development Plan
5	Exploratory Hole Location Plan - Pre-Clearance Layout
6	Exploratory Hole Location Plan - Proposed Development
7	Made Ground Contamination Plan



Legend

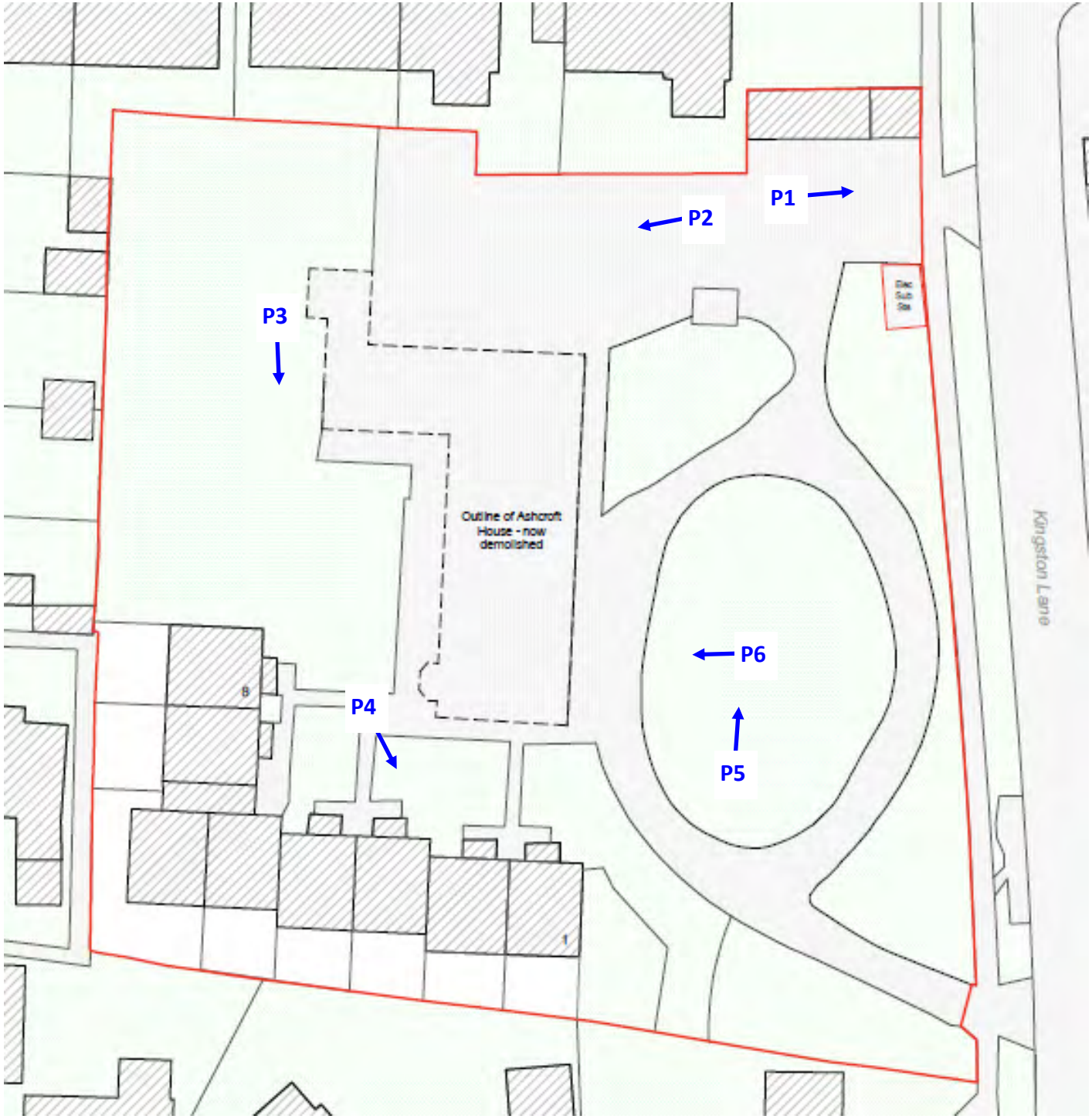
Approx. Site Boundary

Notes

Figure 1

Drawing Title	Site Location Plan
Project Number	25-127.01
Project Title	Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

Approx. Site Boundary

Photo Direction

Notes

Figure 2

Drawing Title

Pre-Clearance Site Layout Plan

Project Number	25-127.01

Project Title

Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Drawn by	DN
Checked by	JB
Scale	NTS

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Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

Legend

Notes

Figure 3

Drawing Title

Site Photographs

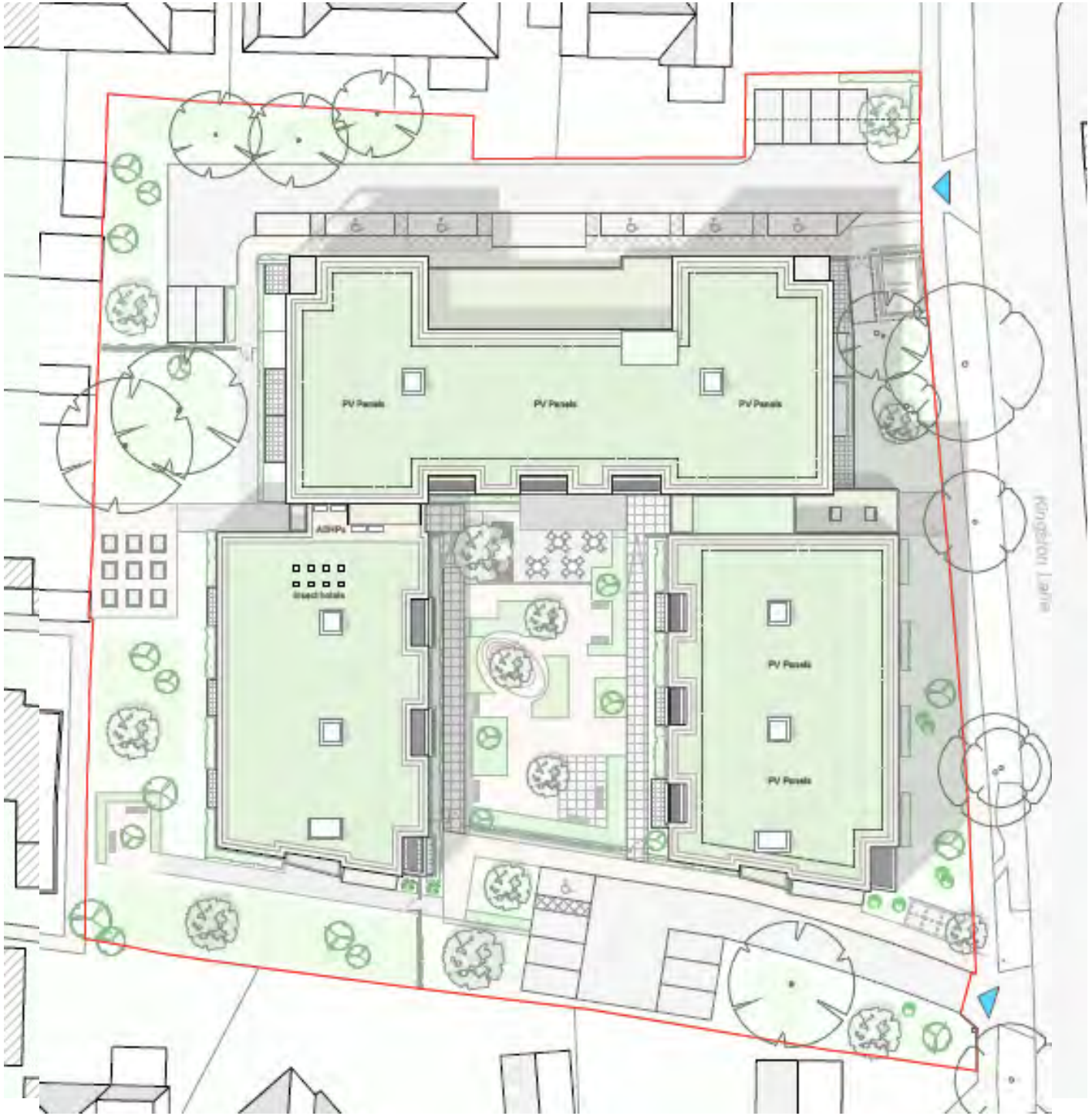
Project Number	25-127.01

Project Title

Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Drawn by	DN
Checked by	JB
Scale	NTS

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Legend

Site Boundary

Notes

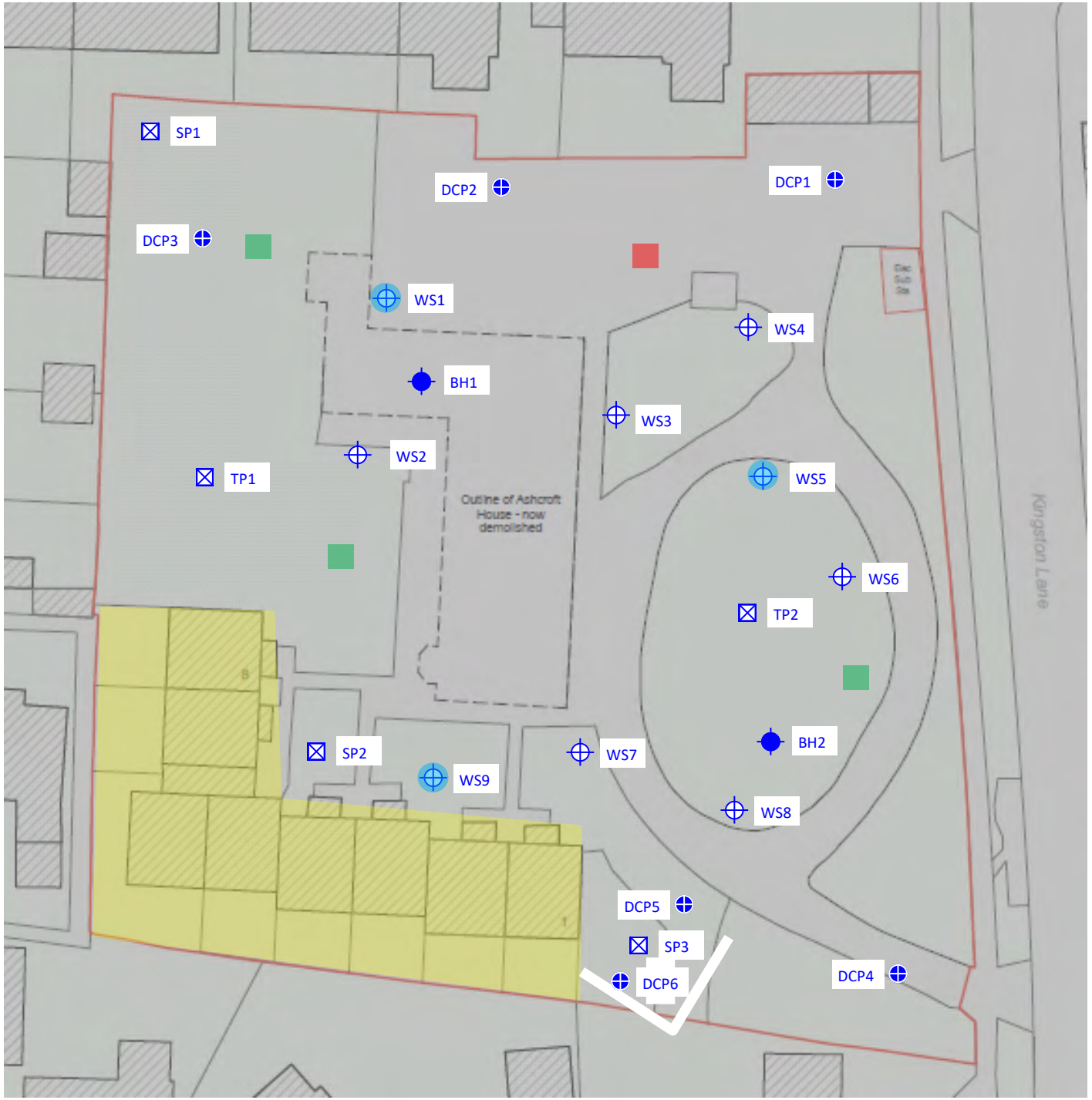
Figure 4

Drawing Title

Proposed Development Plan

Project Number	25-127.01
Project Title	Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
Drawn by	DN
Checked by	JB
Scale	NTS

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Legend

- Cable Percussion Borehole
- Window Sample Location
- Monitoring Well
- Mechanical Trial Pit
- CBR by DCP
- No access,

Notes

Figure 5

Drawing Title

Exploratory Hole Location Plan - Pre-Clearance Layout

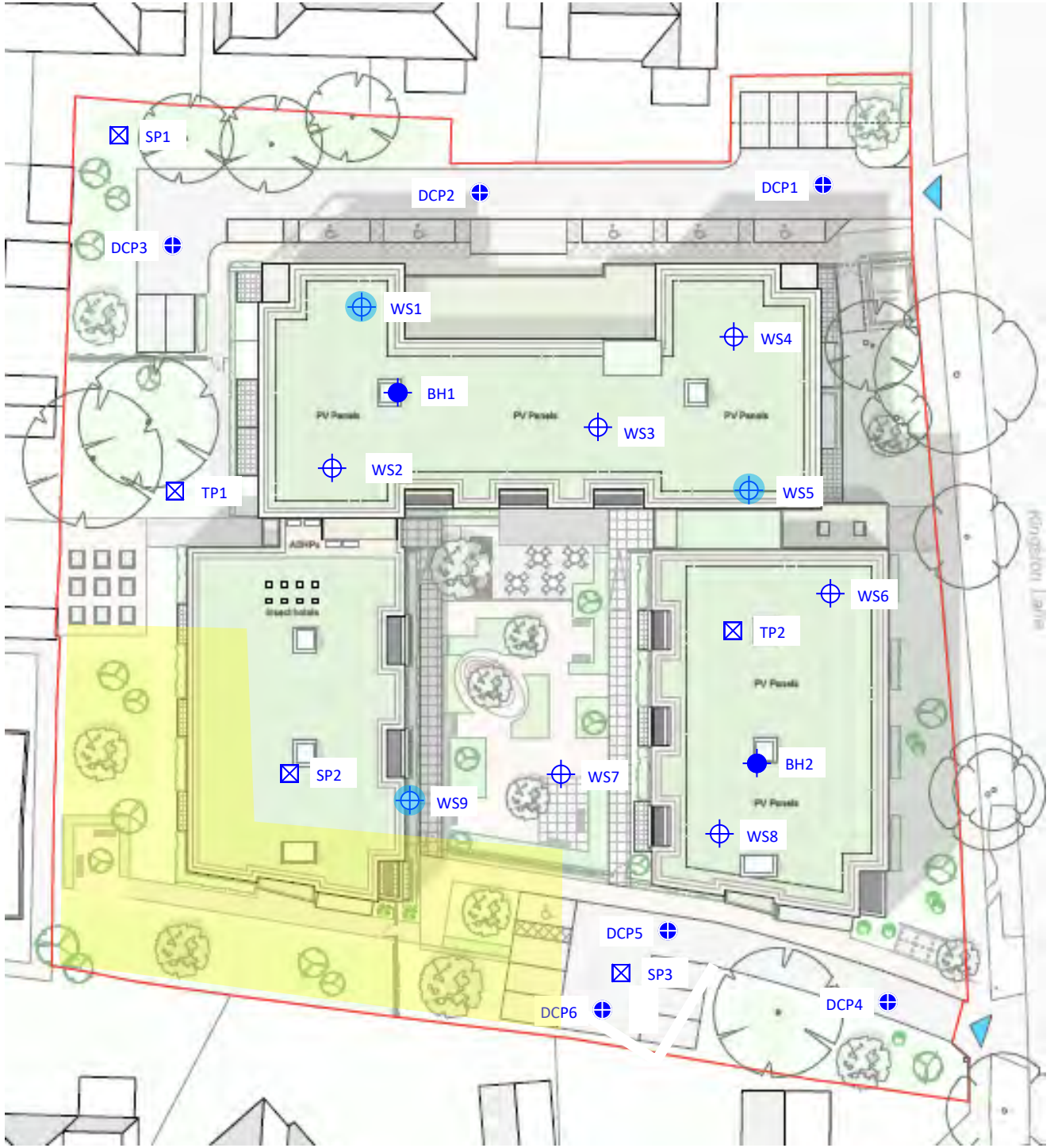
Project Number	25-127.01

Project Title

Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Drawn by	DN
Checked by	JB
Scale	NTS

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Legend

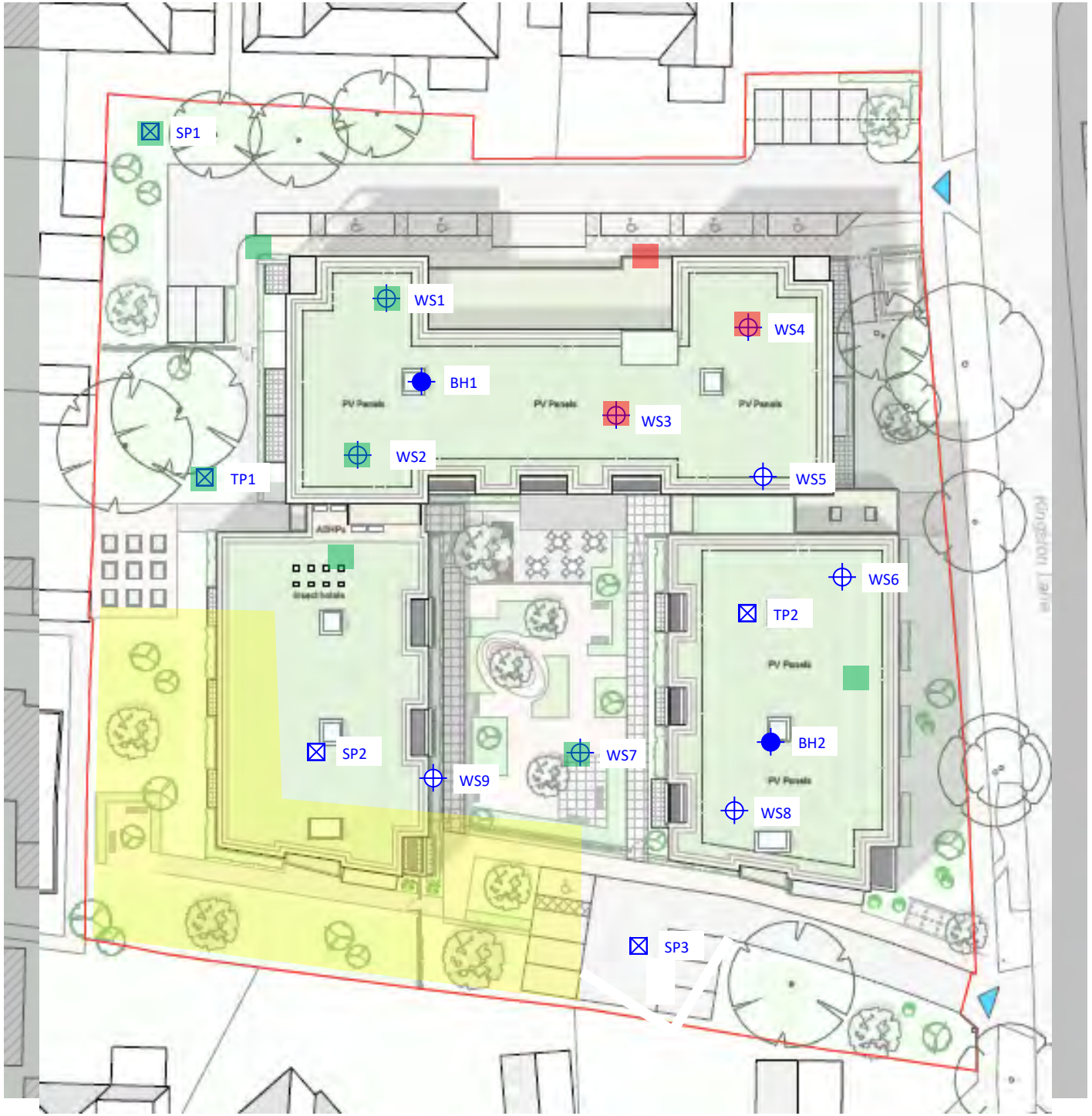
- Cable Percussion Borehole
- Window Sample Location
- Monitoring Well
- Mechanical Trial Pit
- CBR by DCP
- No access

Notes

Figure 6

Drawing Title	Exploratory Hole Location Plan - Proposed Development
Project Number	25-127.01
Project Title	Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
Drawn by	DN
Checked by	JB
Scale	NTS

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Legend

- Cable Percussion Borehole
- Window Sample Location
- Mechanical Trial Pit
- No access
- 'Contaminated' Location
- 'Uncontaminated' Location

Notes

Where exploratory holes are not high-lighted this indicates a sample was not obtained for testing.

Unlabelled positions from Ground & Water Limited.

Figure 7

Drawing Title

Made Ground Soil Contamination Plan

Project Number	25-127.01
Project Title	Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
Drawn by	DN
Checked by	JB
Scale	NTS

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Appendices

I	Envirocheck Database Reports
II	Exploratory Hole Logs and Photographs
III	Field Monitoring Results
IV	Soil Contamination Results and Assessment Criteria
V	Soil Geotechnical Results
VI	Soil Infiltration Results

Appendix

I Envirocheck Database Reports

Appendix

II Exploratory Hole Logs and Photographs

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	1 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 150mm	75mm	75mm	75mm	75mm	N' Value	Notes
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Frequent concrete rubble. (MADE GROUND)		(0.5) **0.5**											
Firm to stiff brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.4) **0.9**		0.7	1	D							
Stiff, high strength, brown silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.7) **1.6**		1.0	2	U							
				1.5	3	D							
Firm to stiff brown silty sandy slightly gravelly CLAY. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(2.3) **3.9**		2.0		SPT	4	3	3	4	3	13	
				2.45	4	D							
				3.0		SPT	5	3	4	3	4	14	
				3.45	5	D							
Firm to stiff light brown very silty sandy gravelly CLAY. Gravel is fine to coarse sub-rounded to rounded of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(0.7) **4.6**		4.0		SPT	3	4	4	4	4	16	
				4.45	6	D							
Medium dense to dense brown clayey gravelly fine to medium SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS) *Continued...*		(1.0)		5.0		SPT	10	8	7	9	8	32	

Casing record

Date	Diameter (mm)	Depth (m)
29/04/2025	150	20.00

Chiselling records

Time	From (m)	To (m)
1hr	GL	1.0
1hr	8.5	8.9

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	7.40	6.90	Fast	6.90	

Remarks

Groundwater encountered from 6.9m bgl.
No visual or olfactory evidence of contamination.
No roots present in borehole.
Borehole backfilled with arisings.
200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl.
SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By	
Logged	AC	
Checked	OB	Scale 01:25

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PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	2 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 150mm	75mm	75mm	75mm	75mm	N' Value	Notes
... continued Medium dense to dense brown clayey gravelly fine to medium SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)				5.0 - 5.45	7	B							
		5.6											
Structureless CHALK composed of slightly sandy silty sub-angular to rounded GRAVEL. Clasts are very weak and weak, white. Occasional medium to coarse sub-rounded to rounded gravel of flint. Grade Dc. (TARRANT CHALK MEMBER)		*(3.1)*		6.0		SPT	6	3	3	4	3	13	
				6.45	8	D							
				7.0		SPT	4	3	3	2	4	12	
				7.45	9	D							
				8.0		SPT	5	3	4	4	5	16	
				8.45	10	D							
		8.7											
Weak, white with frequent black specks CHALK. Fractures very closely spaced (10/40/60), infilled (2/5/10) with light brown comminuted chalk. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade C (TARRANT CHALK MEMBER)		*(1.3)*		9.0		SPT	6	4	5	4	5	18	
				9.45	11	D							
		10.0		10.0	12	U							

Casing record

Date	Diameter (mm)	Depth (m)
29/04/2025	150	20.00

Chiselling records

Time	From (m)	To (m)
1hr	GL	1.0
1hr	8.5	8.9

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	3 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
Weak, low to medium density, white, unstained CHALK. Fractures closely spaced (50/100/200), clean or infilled (0/2/5) with white comminuted chalk, with slight brown staining and occasional black specks. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade B (TARRANT CHALK MEMBER)		(5.0)		10.45	13	D							
				11.0									
				11.1	14	D							
				12.0		SPT	7	6	7	6	8	27	
				12.45	15	D							
				13.7	16	D							
				14.0		SPT	8	7	7	8	9	31	
				14.45	17	D							
		15.0											

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	150	20.00	1hr 1hr	GL 8.5	1.0 8.9	29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By	
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC	
	Checked	OB	Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	4 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
Moderately weak, low becoming medium density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)		(15.5)		15.1	18	D							
				16.0		SPT	7	8	7	9	11	35	
				16.45	19	D							
				17.0	20	D							
				17.5		SPT	8	7	8	10	12	37	
				17.95	21	D							
				18.5	22	D							
				19.0		SPT	9	8	9	11	13	41	
				19.45	23	D							
Continued...													

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	150	20.00	1hr 1hr	GL 8.5	1.0 8.9	29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	5 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Moderately weak, low becoming medium density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)				20.5	24	D							
				20.5	25	U							
				21.0	26	D							
				22.0		SPT	10	8	9	12	14	43	
				22.45	27	D							
				23.0	28	D							
				24.0		SPT	9	8	10	12	13	43	
				24.45	29	D							
Continued...													

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	150	20.00	1hr 1hr	GL 8.5	1.0 8.9	29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	6 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Moderately weak, low becoming medium density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)				25.5	30	D							
				26.0		SPT	10	9	11	13	15	48	
				26.45	31	D							
				27.0	32	D							
				28.0		SPT	11	10	9	14	17	50	
				28.45	33	D							
				29.0	34	D							
Continued...				30.0		SPT	10	9	13	15	18	55	

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	150	20.00	1hr 1hr	GL 8.5	1.0 8.9	29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	29/04/2025	29/04/2025	7 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Moderately weak, low becoming medium density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)		**30.5**		30.45	35	D							

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
29/04/2025	150	20.00	1hr 1hr	GL 8.5	1.0 8.9	29/04/2025	7.40	6.90	Fast	6.90	

Remarks		By
Groundwater encountered from 6.9m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. 200 Litres of water added into boreholw between 4.6m bgl to 5.6m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	1 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. (MADE GROUND)		(0.6) **0.6**											
Firm, medium strength, brown silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.7) **1.3**		0.7	1	D							
				1	2	U							
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.5) **2.8**		1.5	3	D							
				2.0		SPT	5	3	3	2	3	11	
				2.45	4	D							
Stiff brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.9) **3.7**		3.0		SPT	5	7	10	8	9	34	
				3.45	5	D							
Stiff brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional partings of coarse orange sand. (RIVER TERRACE DEPOSITS)		(1.2) **4.9**		4.0		SPT	6	5	5	7	7	24	
				4.45	6	D							
Continued...		(1.0)		5.0		SPT	12	10	9	10	8	37	

Casing record

Date	Diameter (mm)	Depth (m)
28/04/2025	150	20.00

Chiselling records

Time	From (m)	To (m)
1hr	GL	1.0
1hr	5.7	5.9

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	4.40	3.00	Slow	3.00	

Remarks

Groundwater encountered from 3.0m bgl.
No visual or olfactory evidence of contamination.
No roots present in borehole.
Borehole backfilled with arisings.

SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By
Logged	AC
Checked	OB

Scale 01:25

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PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	2 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Dense light brown clayey very sandy GRAVEL. Gravel is fine to coarse sub-rounded to rounded of flint. Frequent off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)				5.0 - 5.45	8	B							
		5.9											
Structureless CHALK composed of firm sandy gravelly CLAY and sandy silty sub-angular to rounded GRAVEL. Clasts are very weak and weak, medium density, white. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade Dm/Dc. (TARRANT CHALK MEMBER)		*(6.3)*		6.0		SPT	3	2	2	2	2	8	
				6.45	8	D							
				7.0		SPT	3	2	3	2	3	10	
				7.45	9	D							
				8.0	10	U							
				8.5	11	D							
				9.0		SPT	2	2	1	1	1	5	
				9.45	12	D							
Continued...				10.0		SPT	3	2	1	2	1	6	

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	150	20.00	1hr 1hr	GL 5.7	1.0 5.9	28/04/2025	4.40	3.00	Slow	3.00	

Remarks		By
Groundwater encountered from 3.0m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	3 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Structureless CHALK composed of firm sandy gravelly CLAY and sandy silty sub-angular to rounded GRAVEL. Clasts are very weak and weak, medium density, white. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade Dm/Dc. (TARRANT CHALK MEMBER)				10.45	13	D							
				11.2	14	D							
				12.0		SPT	4	3	3	4	3	13	
		12.2											
Weak, low density, white with frequent black specks CHALK. Fractures very closely spaced (10/40/60), infilled (2/5/10) with light brown comminuted chalk. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade C (TARRANT CHALK MEMBER)		*(4.3)*		12.45	15	D							
				12.8	16	D							
				14.0		SPT	7	4	4	5	5	18	
				14.45	17	D							
Continued...				15	18	D							

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	150	20.00	1hr 1hr	GL 5.7	1.0 5.9	28/04/2025	4.40	3.00	Slow	3.00	

Remarks		By
Groundwater encountered from 3.0m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	4 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 150mm	75mm	75mm	75mm	75mm	N' Value	Notes
... continued Weak, low density, white with frequent black specks CHALK. Fractures very closely spaced (10/40/60), infilled (2/5/10) with light brown comminuted chalk. Occasional fine to coarse sub-rounded to rounded gravel of flint. Grade C (TARRANT CHALK MEMBER)				16.0		SPT	6	4	4	5	5	18	
		16.5		16.45	19	D							
Weak, medium density, white, unstained CHALK. Fractures closely spaced (50/150/300), clean or infilled (0/1/3) with white comminuted chalk, with slight yellow brown staining and occasional black specks. Occasional medium to coarse sub-rounded to rounded gravel of flint. Grade B (TARRANT CHALK MEMBER)		*(3.5)*		17.3	20	D							
				18.0		SPT	7	5	6	5	6	22	
				18.45	21	D							
				19.2	22	D							
		20.0		20.0		SPT	6	4	5	7	8	24	

Casing record

Date	Diameter (mm)	Depth (m)
28/04/2025	150	20.00

Chiselling records

Time	From (m)	To (m)
1hr	GL	1.0
1hr	5.7	5.9

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	4.40	3.00	Slow	3.00	

Remarks

Groundwater encountered from 3.0m bgl.
No visual or olfactory evidence of contamination.
No roots present in borehole.
Borehole backfilled with arisings.

SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By
Logged	AC
Checked	OB

Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	5 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
Moderately weak, low density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)		(10.5)		20.45	23	D							
				21.2	24	D							
				22.0		SPT	9	5	8	7	9	29	
				22.45	25	D							
				23.0	26	D							
				24.0		SPT	8	6	7	7	8	28	
				24.45	27	D							
Continued...													

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	150	20.00	1hr 1hr	GL 5.7	1.0 5.9	28/04/2025	4.40	3.00	Slow	3.00	

Remarks		By
Groundwater encountered from 3.0m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	6 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Moderately weak, low density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)				25.5	28	D							
				26.0	29	U							
				26.5	30	D							
				27.1	31	D							
				28.0		SPT	9	7	8	8	8	31	
				28.45	32	D							
				29.0	33	D							
Continued...				30.0		SPT	10	7	8	9	11	35	

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	150	20.00	1hr 1hr	GL 5.7	1.0 5.9	28/04/2025	4.40	3.00	Slow	3.00	

Remarks		By
Groundwater encountered from 3.0m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings.	Logged	AC
SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Checked	OB

Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

PERCUSSION DRILLING LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	BH2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	28/04/2025	28/04/2025	7 of 7
Method/Plant Used:	Co-ordinates:	Ground Level:	
Dando 150 (STAR)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results					N' Value	Notes
				Depth	No	Type	150mm	75mm	75mm	75mm	75mm		
... continued Moderately weak, low density, white, unstained CHALK. Fractures possibly medium spaced, probably clean, unstained. Occasional medium sub-rounded gravel of flint. Grade A (TARRANT CHALK MEMBER)		**30.5**		30.45	34	D							

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
28/04/2025	150	20.00	1hr 1hr	GL 5.7	1.0 5.9	28/04/2025	4.40	3.00	Slow	3.00	

Remarks		By
Groundwater encountered from 3.0m bgl. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	WS1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
Archway Dart (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Rare concrete rubble. Rare timber waste. (MADE GROUND)		(0.7) **0.7**		0.5	1	ES								
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.7) **1.4**		1.0	2	D/SPT	2	3	3	2	3	2	10	
Firm becoming stiff light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(1.1) **2.5**		2.0	3	D/SPT	3	3	2	4	4	5	15	
Very stiff orange brown silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. (RIVER TERRACE DEPOSITS)		(0.5) **3.0**												HP 5.2
				3.0	4	D/SPT	2	3	3	7	16	24	50	For 290mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Gas and groundwater monitoring well installed to 3.0m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU	25-127.01	WS2

Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1

Method/Plant Used:	Co-ordinates:	Ground Level:
Archway Dart (3D)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Rare concrete rubble. (MADE GROUND)		(0.5) **0.5**		0.1 - 0.3	1	WAC								
				0.4	2	ES								
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.0) **1.5**		1.0	3	D/SPT	1	2	2	2	2	3	9	
Firm light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(0.4) **1.9**												
Interbedded stiff sandy gravelly CLAY and dense brown grey very clayey sandy GRAVEL. Gravel is fine to medium angular to sub-rounded of flint. Occasional medium size angular to sub-rounded cobbles of flint. (RIVER TERRACE DEPOSITS)		(1.2) **3.1**		2.0	4	D/SPT	4	7	7	8	7	10	32	
				2.55		SPT	8	9	12	9	8	7	36	
				3.0	5	D/SPT	5	6	6	3	5	4	18	
Stiff brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.0) **4.1**		4.0	6	D/SPT	4	4	4	5	4	6	19	
Firm light grey light brown slightly silty slightly gravelly CLAY. Gravel is fine to medium sub-rounded of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(0.3) **4.4**												
Dense brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.2) **4.6**		4.5	7	D/SPT	10	11	22	23	5		50	For 160mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	WS3
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
Archway Dart (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Frequent concrete rubble. (MADE GROUND)		(0.8)		0.1 - 0.3	1	WAC								
				0.6	2	ES								
		0.8												
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.1)		1.0		SPT	1	2	2	3	3	2	10	
		1.9												
Stiff, becoming soft light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(2.3)		2.0		SPT	3	4	4	6	5	6	21	
				3.0		SPT	4	3	2	1	2	1	6	
				4.0		SPT	5	5	6	9	9	10	34	
		4.2												
Dense light brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.8)												
		5.0		5.0	3	D/SPT	6	10	12	11	13	14	50	

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	WS4
Client:	**Start:**	**End:**	**Sheet:**
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1
Method/Plant Used:	**Co-ordinates:**	**Ground Level:**	
Archway Dart (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 75mm	75mm	75mm	75mm	75mm	75mm	N' Value	Notes
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Frequent concrete rubble. Roots. (MADE GROUND)		(0.5) **0.5**		0.1 - 0.3	1	WAC								
				0.2	2	ES								
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Roots to 1.1m bgl. (RIVER TERRACE DEPOSITS)		(1.0) **1.5**		0.9	3	ES								
				1.0	4	D/SPT	1	2	2	3	3	3	11	
Firm brown silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3) **1.8**												
Stiff becoming firm light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(1.4) **3.2**		2.0	5	D/SPT	4	5	5	7	8	8	28	
				3.0	6	D/SPT	2	2	2	4	3	3	12	
Firm becoming stiff light brown very silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(1.0) **4.2**		3.6		SPT	15	10	10	10	6	6	32	
				4.0	7	D								
Dense becoming very dense light brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.8) **5.0**		5.0	8	D/SPT	9	11	12	14	15	9	50	For 290mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. Roots noted to 1.1m bgl. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU	25-127.01	WS5
Client:	**Start:**	**End:**	**Sheet:**
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1
Method/Plant Used:	**Co-ordinates:**	**Ground Level:**
Archway Dart (3D)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Rootlets to 0.4m. (Reworked TOPSOIL)		(0.5) 0.5		0.1 - 0.3	1	WAC								
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.8) 1.3		1.0		SPT	1	1	2	2	3	3	10	
Firm becoming stiff light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		(2.3) 3.6		2.0		SPT	1	2	2	3	4	4	13	
				3.0		SPT	2	3	5	6	7	6	24	
Firm to stiff brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.9) 4.5		4.0	2	D/SPT	2	2	3	4	5	5	17	
Medium dense light brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.5) 5.0		5.0	3	D/SPT	1	2	3	4	5	4	16	

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. Rootlets noted to 0.4m bgl. Gas and groundwater monitoring well installed to 5.0m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	AC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU	25-127.01	WS6

Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1

Method/Plant Used:	Co-ordinates:	Ground Level:
Archway Dart (3D)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Rootlets to 0.5m. (Reworked TOPSOIL)		(0.6) 0.6		0.1	1	ES								
Soft brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.0) 1.6		1.0	2	D/SPT	1	1	2	2	1	1	6	
Soft to firm light brown very clayey sandy slightly chalky gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3) 1.9												
Firm becoming stiff brown orange silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.8) 3.7		2.0	3	D/SPT	2	2	2	3	4	3	12	
				3.0	4	D/SPT	6	4	6	5	7	6	24	
Very dense light brown light orange clayey gravelly fine to medium SAND. Gravel is medium to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3) 4.0		4.0	5	D/SPT	12	11	15	15	15	5	50	For 235mm

Casing record

Date	Diameter (mm)	Depth (m)
24/04/2025	101	1.00

Chiselling records

Time	From (m)	To (m)

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	-	-	-	Dry	

Remarks

No groundwater encountered.
No visual or olfactory evidence of contamination.
Rootlets noted to 0.5m bgl.
Borehole backfilled with arisings.

SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By
Logged	AC
Checked	OB

Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	WS7
Client:	**Start:**	**End:**	**Sheet:**
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1
Method/Plant Used:	**Co-ordinates:**	**Ground Level:**	
Archway Dart (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Roots (Reworked TOPSOIL)		(0.5) **0.5**		0.1 - 0.3	1	WAC								
				0.4	2	ES								
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Roots to 1.5m. (RIVER TERRACE DEPOSITS)		(1.8) **2.3**		1.0	3	D/SPT	1	2	2	2	3	3	10	
				2.0	4	D/SPT	1	1	5	8	9	10	32	
Stiff becoming firm brown orange silty sandy very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.2) **3.5**		3.0	5	D/SPT	1	2	2	3	4	4	13	
Medium dense becoming very dense light brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.5) **4.0**		4.0	6	D/SPT	8	12	13	13	14	10	50	For 285mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	101	1.00				24/04/2025	-	-	-	Dry	

Remarks		By
No groundwater encountered. No visual or olfactory evidence of contamination. Roots noted to 1.5m bgl. Borehole backfilled with arisings.	Logged	AC
SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU	25-127.01	WS8

Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1

Method/Plant Used:	Co-ordinates:	Ground Level:
Archway Dart (3D)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 75mm	75mm	75mm	75mm	75mm	75mm	N' Value	Notes
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. (Reworked TOPSOIL)		(0.9)		0.1 - 0.3	1	WAC								
				0.8	2	ES								
		0.9												
Soft becoming firm and stiff brown silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.7)		1.0		SPT	1	0	1	1	1	1	4	
				1.25										HP 8.9
				1.5										HP 11+
				1.75										HP 9.7
				2.0		SPT	1	2	3	4	5	5	17	
				2.25										HP 11+
		2.6												
Orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3)												
		2.9												
Firm brown silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3)		3.0		SPT	8	8	8	9	9	9	35	
		3.1												
Dense becoming very dense light brown light orange clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.9)												
				4.0		SPT	5	7	8	10	11	11	40	
		5.0		5.0		SPT	10	11	11	13	16	10	50	For 295mm

Casing record

Date	Diameter (mm)	Depth (m)
24/04/2025	101	1.00

Chiselling records

Time	From (m)	To (m)

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	-	-	-	Dry	

Remarks

No groundwater encountered.
No visual or olfactory evidence of contamination.
No roots present in borehole.
Borehole backfilled with arisings.

SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By
Logged	AC
Checked	OB

Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU	25-127.01	WS9

Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2025	24/04/2025	1 of 1

Method/Plant Used:	Co-ordinates:	Ground Level:
Archway Dart (3D)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Firm brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Frequent sub-angular fine to coarse gravel size fragments of brick. Rare whole bricks. Reworked topsoil. Rootlets to 0.4m. (MADE GROUND)		*(0.7)*		0.1 - 0.3	1	WAC								
				0.4	2	ES								
		0.7												
Firm brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		*(1.5)*		1.0	3	D/SPT	1	2	3	3	3	3	12	HP
				1.1	4	ES								
				2.0	5	D/SPT	1	2	3	2	2	3	10	
		2.2												
Firm becoming stiff light brown very silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. Rare medium size sub-rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (TARRANT CHALK MEMBER) (RIVER TERRACE DEPOSITS)		*(1.3)*		3.0	6	D/SPT	2	3	4	5	9	10	28	
		3.5												
Stiff light brown very clayey sandy gravelly SILT. Gravel is fine to medium sub-rounded to rounded of flint. Occasional medium size sub-rounded to rounded cobbles of flint. Occasional off white weak fine to coarse gravel size clasts of chalk. (RIVER TERRACE DEPOSITS)		*(1.5)*		4.0		SPT	6	5	5	6	6	7	24	
		5.0		5.0		SPT	2	4	7	8	8	9	32	

Casing record

Date	Diameter (mm)	Depth (m)
24/04/2025	101	1.00

Chiselling records

Time	From (m)	To (m)

Water level observations (depths in metres below gl)

Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
24/04/2025	-	-	-	Dry	

Remarks

No groundwater encountered.
No visual or olfactory evidence of contamination.
Rootlets noted to 0.4m bgl.
Gas and groundwater monitoring well installed to 5.0m bgl.

SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample

	By
Logged	AC
Checked	OB

Scale 01:25

Aviron Associates Limited - Badgemore House || Badgemore Park || Gravel Hill || Henley on Thames || RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

Exploratory Hole Photos

Project Number 25-127.01 **Project Title** Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU **Taken by** AC **Date** 24/04/2025



WS1 arisings



WS2 arisings



WS3 arisings



WS4 arisings



WS5 arisings



WS6 arisings

Exploratory Hole Photos

Project Number 25-127.01 **Project Title** Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU **Taken by** AC **Date** 24/04/2025



WS7 arisings



WS8 arisings



WS9 arisings

TRIAL PIT LOG

Project:		Project No.	Trial Pit:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	TP1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2024	24/04/2024	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
2.5T Bobcat (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	Laboratory Test Details
Dark brown, humic, very clayey, silty, slightly gravelly SAND. Gravel is fine to medium, subangular to rounded of flint. Frequent, subangular, fine to medium, gravel-sized fragments of brick. Occasional whole bricks. Rootlets to 0.2m. (Reworked TOPSOIL)		(0.3) 0.3					
Firm, brown, very sandy, slightly silty, slightly gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.8) 1.1					
Firm, brown, very sandy, very gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.7) 1.8					
Firm, light brown, very clayey, sandy, very gravelly SILT. Gravel is fine to medium, subrounded to rounded of flint and chalk. (RIVER TERRACE DEPOSITS)		(0.3) 2.1					
Firm, orange, brown, silty, sandy, gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. Occasional medium-sized, subrounded to rounded cobbles of flint. (RIVER TERRACE DEPOSITS)		(0.9) 3.0					

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
2.20	0.50	3.00	24/04/2024	Dry	-	-	-	

Remarks		By
Roots to 0.2m. No groundwater encountered. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.	Logged	OC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House - Greys Road - Henley on Thames - RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

TRIAL PIT LOG

Project:		Project No.	Trial Pit:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	TP2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2024	24/04/2024	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
2.5T Bobcat (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	Laboratory Test Details
Firm, brown, very silty, sandy, slightly gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. Occasional subangular, fine to coarse, gravel-sized fragments of brick. Rootlets to 0.5m. (Reworked TOPSOIL)		(0.5) 0.5					
Stiff, brown, silty, sandy, gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.8) 1.3		1.0	1	D	
Firm, brown, very sandy, very clayey, very gravelly SILT. Gravel is fine to medium, subrounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.5) 1.8					
Firm and stiff, dark brown, silty, sandy, very gravelly CLAY. Gravel is fine to medium sub-rounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(1.2) 3.0		2.0 3.0	2 3	D D	

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
2.29	0.50	3.00	24/04/2024	Dry	-	-	-	

Remarks		By
Roots to 0.5m No groundwater encountered No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.	Logged	OC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House - Greys Road - Henley on Thames - RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

TRIAL PIT LOG

Project:		Project No.	Trial Pit:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	SP1
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2024	24/04/2024	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
2.5T Bobcat (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	Laboratory Test Details
Firm, brown, very silty, sandy, slightly gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. Occasional subangular, fine to coarse, gravel-sized fragments of brick. Rootlets to 0.6m. (Reworked TOPSOIL)		(0.6) **0.6**					
Firm to stiff, light brown, very sandy, silty, slightly gravelly CLAY. Gravel is fine to medium, subrounded of flint. (RIVER TERRACE DEPOSITS)		(0.6) **1.2**		1.0	1	D	
Firm, dark brown, very sandy, silty, slightly gravelly CLAY. Gravel is fine to medium, subrounded of flint. (RIVER TERRACE DEPOSITS)		(0.4) **1.6**					
Firm, brown, very sandy, very clayey, very gravelly SILT. Gravel is fine to medium, subrounded to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.2) **1.8**					
Stiff, dark brown, very sandy, very gravelly, silty CLAY. Gravel is fine to medium, subrounded to subangular of flint (RIVER TERRACE DEPOSITS)		(0.2) **2.0**		2.0	2	D	

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.90	0.50	2.00	24/04/2024	Dry	-	-	-	

Remarks		By
Roots to 0.6m. No groundwater encountered. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.	Logged	OC
	Checked	OB
	Scale	01:25

Aviron Associates Limited - Badgemore House - Greys Road - Henley on Thames - RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

TRIAL PIT LOG

Project:		Project No.	Trial Pit:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	SP2
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2024	24/04/2024	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
2.5T Bobcat (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	Laboratory Test Details
Dark brown, humic, very clayey, silty, gravelly SAND. Gravel is fine to medium, subangular to rounded of flint. Frequent, subangular, fine to medium, gravel-sized fragments of brick. Occasional whole bricks, large pieces of concrete, wood and plastic sheeting (MADE GROUND)		(1.1)		0.7	1	D	
		1.1					
Firm and stiff, brown, silty, sandy, slightly gravelly CLAY. (Gravel is fine to coarse, subrounded to subangular of flint. (RIVER TERRACE DEPOSITS)		(0.7)		1.5	2	D	
		1.8					
Firm, light brown, very clayey, sandy, slightly gravelly, slightly chalky SILT. Gravel is fine to medium, subrounded of flint. (RIVER TERRACE DEPOSITS)		(0.2)		2.0	3	D	
		2.0					

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.50	0.50	2.00	24/04/2024	Dry	-	-	-	

Remarks		By
No roots present in trial pit. No groundwater encountered. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.	Logged	OC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House - Greys Road - Henley on Thames - RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

TRIAL PIT LOG

Project:		Project No.	Trial Pit:
Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU		25-127.01	SP3
Client:	Start:	End:	Sheet:
Bugler Developments Limited	24/04/2024	24/04/2024	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
2.5T Bobcat (3D)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	Laboratory Test Details
Firm, brown, very silty, sandy, slightly gravelly CLAY. Gravel is fine to medium, subrounded to rounded of flint. Roots to 0.4m. (Reworked TOPSOIL)		(0.6) 0.6					
Firm, light brown, silty, sandy, slightly gravelly CLAY. Gravel is fine to medium, subrounded of flint. (RIVER TERRACE DEPOSITS)		(0.8) 1.4		1.0	1	D	
Firm, brown, silty, sandy, very gravelly CLAY. Gravel is fine to coarse, subangular of flint. (RIVER TERRACE DEPOSITS)		(0.5) 1.9					
Firm to stiff, light brown, clayey, sandy, silty, SILT. Gravel is fine to medium, subrounded of flint and chalk. (RIVER TERRACE DEPOSITS)		(0.3) 2.2		2.0	2	D	
Stiff, dark brown, very silty, very sandy, very gravelly CLAY. Gravel is fine to coarse, subangular to rounded of flint. (RIVER TERRACE DEPOSITS)		(0.3) 2.5		2.5	3	D	

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
2.05	0.50	2.50	24/04/2024	Dry	-	-	-	

Remarks		By
Roots to 0.4m. No groundwater encountered. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.	Logged	OC
	Checked	OB
		Scale 01:25

Aviron Associates Limited - Badgemore House - Greys Road - Henley on Thames - RG9 4NR - T:01491 413 722 - M: 07787771686 - E:james@aviron.co.uk

Exploratory Hole Photos

Project Number 25-127.01 **Project Title** Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU **Taken by** OC **Date** 24/04/2025



TP1 Hole



TP2 Hole



SP1 Hole



TP1 Arisings



TP2 Arisings



SP1 Arisings

Exploratory Hole Photos

Project Number 25-127.01 **Project Title** Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU **Taken by** OC **Date** 24/04/2025



SP2 Hole



SP3 Arisings



SP2 Arisings



SP3 Arisings

Appendix

III Field Monitoring Results

MONITORING DATA SHEET

SITE Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
PROJECT 25-127.01

VISIT NUMBER 1
DATE 08/05/2025

EQUIPMENT GFM435 + MiniRAE
TAKEN BY AC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	11:26	n/a	0.0	0.0	20.4	1017	0.0	n/a	n/a	n/a	n/a	n/a
WS1	11:30	0.0	0.0	0.2	19.4	1017	0.9	Dry	2.95	0	0	CS-1
WS5	11:35	0.0	0.0	1.3	18.5	1017	1.1	Dry	4.99	0	0	CS-1
WS9	11:43	0.0	0.0	0.4	19.8	1017	0.4	Dry	5.06	0	0	CS-1

Weather Observations					
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C	
Dry	Clear	Calm	None	Before	15
Moist	Sunny	Light	Slight		
Wet	Slight	Moderate	Moderate	After	15
Snow	Cloudy	Strong	Heavy		
Frozen	Overcast				
	Fog/Mist				

Pressure Observations			
Source	Pressure Records		Trend
Metoffice	Location	**Southwick**	Falling
GFM435	Time	**6:00am**	Steady
	Pressure	**1020mB**	Rising

Notes	
Worst case conditions? (<1000mB and Falling)	No

Aviron Associates Limited
Badgemore House - Badgemore Park - Gravel Hill - Henley on Thames - RG9 4NR
T: 01491 413 722 - E: james@aviron.co.uk

MONITORING DATA SHEET

SITE Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU
PROJECT 25-127.01

VISIT NUMBER 2
DATE 22/05/2025

EQUIPMENT GFM435 + MiniRAE
TAKEN BY AC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	14:32	n/a	0.0	0.0	20.4	1016	0.0	n/a	n/a	n/a	n/a	n/a
WS1	14:35	0.0	0.0	0.4	19.9	1016	1.7	Dry	2.95	0	0	CS-1
WS5	14:46	0.0	0.0	1.5	19.5	1016	1.3	Dry	4.99	0	0	CS-1
WS9	14:54	0.0	0.0	0.6	19.8	1016	0.6	Dry	5.06	0	0	CS-1

Weather Observations					
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C	
Dry	Clear	Calm	None	Before	15
Moist	Sunny	Light	Slight		
Wet	Slight	Moderate	Moderate	After	15
Snow	Cloudy	Strong	Heavy		
Frozen	Overcast				
	Fog/Mist				

Pressure Observations			
Source	Pressure Records		Trend
Metoffice	Location	**Southwick**	Falling
GFM435	Time	**6:00am**	Steady
	Pressure	**1019mB**	Rising

Notes	
Worst case conditions? (<1000mB and Falling)	No

Aviron Associates Limited
Badgemore House - Badgemore Park - Gravel Hill - Henley on Thames - RG9 4NR
T: 01491 413 722 - E: james@aviron.co.uk

Appendix

IV Soil Contamination Results and Assessment Criteria

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	25-14408-1
Initial Date of Issue:	07-May-2025
Re-Issue Details:	
Client	Aviron Associates Ltd
Client Address:	Badgemore House Badgemore Park Gravel Hill Reading Henley on Thames RG9 4NR
Contact(s):	David Norman James Burkitt Orlando Blackwell
Project	25-170.01 (coolbox 2) Ashcroft House

Quotation No.:		**Date Received:**	30-Apr-2025
Order No.:		**Date Instructed:**	30-Apr-2025
No. of Samples:	5		
Turnaround (Wkdays):	5	**Results Due:**	07-May-2025
Date Approved:	07-May-2025		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 25-170.01 (coolbox 2) Ashcroft House

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-14408	25-14408	25-14408	25-14408	25-14408
Quotation No.:				**Chemtest Sample ID.:**		1967258	1967259	1967260	1967261	1967262
				Sample Location:		WS7	SP1	TP1	WS9	COMP2
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.4	0.3	0.4	1.1	0.1
				Bottom Depth (m):						0.3
				Date Sampled:		24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
ACM Type		N	2192		N/A	-	-	-	-	
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	
Moisture		N	2030	%	0.020	13	13	14	15	13
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	
Other Material		N	2040		N/A	Stones, Roots and	Stones, Roots and	Stones, Roots and	Stones and	
Soil Texture		N	2040		N/A	Loam	Loam	Clay	Clay	
pH at 20C		M	2010		4.0	7.8	8.6	8.2	.2	
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.71	0.52	0.94	0.70	
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	< 0.010	0.011	< 0.010	
Total Sulphur		U	2175	%	0.010	0.020	0.020	0.020	0.020	
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Sulphate (Total)		U	2430	%	0.010	0.21	0.10	0.018	0.11	
Arsenic		M	2455	mg/kg	0.5	6.1	9.1	9.3	18	
Barium		M	2455	mg/kg	0.5	52	83	91	100	
Cadmium		M	2455	mg/kg	0.10	0.38	0.39	0.49	0.33	
Chromium		M	2455	mg/kg	0.5	8	23	31	53	
Copper		M	2455	mg/kg	0.50	14	16	18	28	
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	< 0.05	0.06	
Nickel		M	2455	mg/kg	0.50	3	18	22	41	
Lead		M	2455	mg/kg	0.50	24	62	23	24	
Selenium		M	2455	mg/kg	0.25	0.52	0.43	0.68	0.79	
Zinc		M	2455	mg/kg	0.50	46	94	82	87	
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	0.05	< 0.05	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0	< 3.0	< 3.0	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0	
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	

Results - Soil

Project: 25-170.01 (coolbox 2) Ashcroft House

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-14408	25-14408	25-14408	25-14408	25-14408
Quotation No.:				**Chemtest Sample ID.:**		1967258	1967259	1967260	1967261	1967262
				Sample Location:		WS7	SP1	TP1	WS9	COMP2
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.4	0.3	0.4	1.1	0.1
				Bottom Depth (m):						0.3
				Date Sampled:		24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	< 5.0	< 5.0	< 5.0	< 5.0	
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10	
Organic Matter		M	2625	%	0.40	0.1	0.69	0.72	0.48	
Naphthalene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluoranthene		M	2700	mg/kg	0.10	< 0.10	0.33	< 0.10	< 0.10	
Pyrene		M	2700	mg/kg	0.10	< 0.10	0.44	< 0.10	< 0.10	
Benzo[a]anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Chrysene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[a]pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Total Of 16 PAH's		M	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Benzene		M	2760	µg/kg	1.0	1.0	< 1.0	< 1.0	< 1.0	
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	

Results - Soil

Project: 25-170.01 (coolbox 2) Ashcroft House

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-14408	25-14408	25-14408	25-14408	25-14408
Quotation No.:				**Chemtest Sample ID.:**		1967258	1967259	1967260	1967261	1967262
				Sample Location:		WS7	SP1	TP1	WS9	COMP2
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.4	0.3	0.4	1.1	0.1
				Bottom Depth (m):						0.3
				Date Sampled:		24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025	24-Apr-2025
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**					
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	

Results - Single Stage WAC

Project: 25-170.01 (coolbox 2) Ashcroft House

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-14408							
Chemtest Sample ID:	1967262							
Sample Ref:								
Sample ID:								
Sample Location:	COMP2							
Top Depth(m):	0.1							
Bottom Depth(m):	0.3							
Sampling Date:	24-Apr-2025							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625		M	%	0.59	3	5	6
Loss On Ignition	2610		M	%	2.7	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800		N	mg/kg	< 2.0	100	--	--
pH at 20C	2010		M		8.0	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0008	0.0084	0.5	2	25
Barium	1455		U	0.005	0.054	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0016	0.016	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	< 0.0002	< 0.0020	0.5	10	30
Nickel	1455		U	0.0011	0.011	0.4	10	40
Lead	1455		U	0.0013	0.013	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.008	0.080	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.17	1.7	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	11	110	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	4.6	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.8
WAC Sample Weight	4542

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - The required amount of sample for analysis was not received
H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.: 25-14423-1

Initial Date of Issue: 08-May-2025

Re-Issue Details:

Client *Aviron Associates Ltd*

Client Address: *Badgemore House*
Badgemore Park
Gravel Hill
Reading
Henley on Thames
RG9 4NR

Contact(s): *David Norman*
James Burkitt
Orlando Blackwell

Project *25-170.01 (coolbox 1) Ashcroft House*

Quotation No.:

Order No.:

No. of Samples: *6*

Turnaround (Wkdays): 5

Date Approved: 08-May-2025

Approved By:



Details: David Smith, Technical Director

Date Received: 30-Apr-2025

Date Instructed: 30-Apr-2025

Results Due: 07-May-2025

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 25-170.01 (coolbox 1) Ashcroft House

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-14423	25-14423	25-14423	25-14423	25-14423	25-14423
Quotation No.:				**Chemtest Sample ID.:**		1967317	1967318	1967319	1967320	1967321	1967322
				Client Reference:		*WS1*	*WS2*	*WS3*	*WS4*	*COMP1*	*WS4*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.5*	*0.4*	*0.6*	*0.2*	*0.1*	*0.9*
				Bottom Depth (m):						*0.3*	
				Date Sampled:		*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type		N	2192		N/A	-	-	-	-		-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected
Moisture		N	2030	%	0.020	15	14	5	17	11	15
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown		Brown
Other Material		N	2040		N/A	chalk and Stones	Stones	Stones	Roots and Stones		None
Soil Texture		N	2040		N/A	Sand	and	Clay	Loam		Sand
pH at 20C		M	2010		4.0	.78	7.7	7.8	7.9		8.4
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	0.92	0.51	1.0	1.6		0.98
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.39	0.15	0.44	0.22		0.056
Total Sulphur		U	2175	%	0.010	0.040	0.030	0.080	0.060		0.020
Cyanide (Total)		M	2300	mg/kg	0.50	0.80	2.9	1.0	< 0.50		< 0.50
Sulphate (Total)		U	2430	%	0.010	0.17	0.075	0.26	0.18		0.056
Arsenic		M	2455	mg/kg	0.5	8.7	27	22	15		14
Barium		M	2455	mg/kg	0.5	73	76	120	140		110
Cadmium		M	2455	mg/kg	0.10	0.30	0.49	0.48	0.57		0.25
Chromium		M	2455	mg/kg	0.5	26	28	30	7		47
Copper		M	2455	mg/kg	0.50	15	7	25	25		22
Mercury		M	2455	mg/kg	0.05	< 0.05	< 0.05	0.08	0.10		< 0.05
Nickel		M	2455	mg/kg	0.50	17	20	24	23		33
Lead		M	2455	mg/kg	0.50	24	23	88	120		24
Selenium		M	2455	mg/kg	0.25	0.46	0.52	0.49	0.65		0.67
Zinc		M	2455	mg/kg	0.50	64	62	120	110		79
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25		< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0	< 2.0	< 2.0		< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	< 3.0	< 3.0	7.1	< 3.0		< 3.0
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10		< 10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	< 5.0	< 5.0	8.1	< 5.0		< 5.0
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	< 10	< 10	< 10		< 10

Results - Soil

Project: 25-170.01 (coolbox 1) Ashcroft House

Client: Aviron Associates Ltd				**Chemtest Job No.:**		25-14423	25-14423	25-14423	25-14423	25-14423	25-14423
Quotation No.:				**Chemtest Sample ID.:**		1967317	1967318	1967319	1967320	1967321	1967322
				Client Reference:		*WS1*	*WS2*	*WS3*	*WS4*	*COMP1*	*WS4*
				Sample Type:		*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
				Top Depth (m):		*0.5*	*0.4*	*0.6*	*0.2*	*0.1*	*0.9*
				Bottom Depth (m):						*0.3*	
				Date Sampled:		*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*
				Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05	< 0.05	< 0.05		< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25		< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.1	< 2.0	12	5.5		< 2.0
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	9.3	< 2.0	16	6.8		< 2.0
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	< 1.0	< 1.0	1.1	< 1.0		< 1.0
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	14	< 5.0	27	2		< 5.0
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	14	< 10	28	12		< 10
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	15	< 10	35	14		< 10
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	15	< 10	36	14		< 10
Organic Matter		M	2625	%	0.40	0.64	0.93	1.7	2.8		0.71
Naphthalene		M	2700	mg/kg	0.10	< 0.10	< 0.10	0.55	0.50		< 0.10
Acenaphthylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	0.66	0.23		< 0.10
Acenaphthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	0.54	0.10		< 0.10
Fluorene		M	2700	mg/kg	0.10	< 0.10	< 0.10	0.64	< 0.10		< 0.10
Phenanthrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	5.3	2.0		< 0.10
Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	2.2	0.40		< 0.10
Fluoranthene		M	2700	mg/kg	0.10	0.52	< 0.10	17	3.8		< 0.10
Pyrene		M	2700	mg/kg	0.10	0.79	< 0.10	18	4.8		< 0.10
Benzo[a]anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	8.0	2.2		< 0.10
Chrysene		M	2700	mg/kg	0.10	< 0.10	< 0.10	7.8	2.4		0.10
Benzo[b]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	9.6	2.6		< 0.10
Benzo[k]fluoranthene		M	2700	mg/kg	0.10	< 0.10	< 0.10	4.1	1.2		< 0.10
Benzo[a]pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	7.3	2.1		< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2700	mg/kg	0.10	< 0.10	< 0.10	4.2	1.2		< 0.10
Dibenz(a,h)Anthracene		M	2700	mg/kg	0.10	< 0.10	< 0.10	1.4	0.56		< 0.10
Benzo[g,h,i]perylene		M	2700	mg/kg	0.10	< 0.10	< 0.10	4.2	1.7		< 0.10
Total Of 16 PAH's		M	2700	mg/kg	2.0	< 2.0	< 2.0	91	26		< 2.0
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0

Results - Soil

Project: 25-170.01 (coolbox 1) Ashcroft House

Client: Aviron Associates Ltd			**Chemtest Job No.:**			25-14423	25-14423	25-14423	25-14423	25-14423	25-14423
Quotation No.:			**Chemtest Sample ID.:**			1967317	1967318	1967319	1967320	1967321	1967322
			Client Reference:			*WS1*	*WS2*	*WS3*	*WS4*	*COMP1*	*WS4*
			Sample Type:			*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
			Top Depth (m):			*0.5*	*0.4*	*0.6*	*0.2*	*0.1*	*0.9*
			Bottom Depth (m):							*0.3*	
			Date Sampled:			*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*	*24-Apr-2025*
			Asbestos Lab:			DURHAM	DURHAM	DURHAM	DURHAM		DURHAM
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10

Results - Single Stage WAC

Project: 25-170.01 (coolbox 1) Ashcroft House

						Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	25-14423							
Chemtest Sample ID:	1967321							
Sample Ref:						**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:								
Client Reference:	*COMP1*							
Top Depth(m):	*0.1*							
Bottom Depth(m):	*0.3*							
Sampling Date:	*24-Apr-2025*							
Determinand	**SOP**	**HWOL Code**	**Accred.**	**Units**				
Total Organic Carbon	2625		M	%	0.70	3	5	6
Loss On Ignition	2610		M	%	2.6	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.05	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	78	500	--	--
Total (Of 17) PAH's	2800		N	mg/kg	42	100	--	--
pH at 20C	2010		M		8.2	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.026	--	To evaluate	To evaluate
Eluate Analysis				**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455		U	0.0027	0.027	0.5	2	25
Barium	1455		U	0.013	0.13	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0007	0.0066	0.5	10	70
Copper	1455		U	0.0022	0.022	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0015	0.015	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.005	0.046	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	110	1100	1000	20000	50000
Total Dissolved Solids	1020		N	170	1700	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.7
WAC Sample Weight	[E] 609.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Chemtest Sample ID	*Clients Sample Ref:*	*Clients Sample ID:*	*Clients Reference:*	*Sampled Date:*	Deviation Code(s):	Containers Received:
1967321			*COMP1*	*24-Apr-2025*	E	Amber Glass 250ml
1967321			*COMP1*	*24-Apr-2025*	E	Amber Glass 60ml
1967321			*COMP1*	*24-Apr-2025*	E	Plastic Bag
1967321			*COMP1*	*24-Apr-2025*	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	RE PW PL LE DW GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key	
U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
Text example	All items indicated in italic font represent customer-supplied information that may not be independently verified by the laboratory

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

NEW_ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

Sample Deviation Codes

As a result of any of the below deviations applying, the test results may be unreliable

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - The required amount of sample for analysis was not received

H - Appropriate cooling measures were not taken for sample transportation

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Report Information

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

Asbestos Tests LOD = LOQ

Limit of Detection = Limit of Quantification for asbestos results only

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Residential with Homegrown Produce
Soil Screening Values
Private Gardens

Determinant	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Criteria
METALS, SEMI-METALS, INROGANICS + PAH				
Arsenic	37	37	37	C4SL/LQM S4UL
Boron	290	290	290	LQM S4UL
Cadmium	11	11	11	LQM S4UL
Chromium III	910	910	910	LQM S4UL
Chromium IV	6	6	6	LQM S4UL
Copper	2,400	2,400	2,400	LQM S4UL
Mercury	1.2	1.2	1.2	LQM S4UL
Nickel	180	180	180	LQM S4UL
Lead	200	200	200	LQM S4UL
Selenium	250	250	250	LQM S4UL
Zinc	3,700	3,700	3,700	LQM S4UL
Free Cyanide	34	34	34	ATRISK
Acenaphthene	210	510	1100	LQM S4UL
Acenaphthylene	170	420	920	LQM S4UL
Anthracene	2,400	5,400	11,000	LQM S4UL
Benzo(a)anthracene	7.2	11	13	LQM S4UL
Benzo(a)pyrene	2.2	2.7	3	LQM S4UL
Benzo(b)fluoranthene	2.6	3.3	3.7	LQM S4UL
Benzo(ghi)perylene	320	340	350	LQM S4UL
Benzo(k)fluoranthene	77	93	100	LQM S4UL
Chrysene	15	22	27	LQM S4UL
Dibenz(ah)anthracene	0.24	0.28	0.3	LQM S4UL
Fluoranthene	280	560	890	LQM S4UL
Fluorene	170	400	860	LQM S4UL
Indeno(123-cd)pyrene	27	36	41	LQM S4UL
Naphthalene	2.3	5.6	13	LQM S4UL
Phenanthrene	95	220	440	LQM S4UL
Pyrene	620	1,200	2,000	LQM S4UL
Phenols	280	550	1,100	LQM S4UL
TOTAL PETROLEUM HYDOCARBONS				
Benzene	0.087	0.17	0.37	LQM S4UL
Toluene	130	290	660	LQM S4UL
Ethlybenzene	47	110	260	LQM S4UL
o-xylene	60	140	330	LQM S4UL
m-xylene	59	140	320	LQM S4UL
p-xylene	56	130	310	LQM S4UL
Aliphatic EC 5-6	42	78	160	LQM S4UL
Aliphatic EC >6-8	100	230	530	LQM S4UL
Aliphatic EC >8-10	27	65	150	LQM S4UL
Aliphatic EC >10-12	130	330	760	LQM S4UL
Aliphatic EC >12-16	1,100	2,400	4,300	LQM S4UL
Aliphatic EC >16-35	65,000	92,000	110,000	LQM S4UL
Aliphatic EC >35-44	65,000	92,000	110,000	LQM S4UL
Aromatic EC 5-7 (benzene)	70	140	300	LQM S4UL
Aromatic EC >7-8 (toluene)	130	290	660	LQM S4UL
Aromatic EC >8-10	34	83	190	LQM S4UL
Aromatic EC >10-12	74	180	380	LQM S4UL
Aromatic EC >12-16	140	330	660	LQM S4UL
Aromatic EC >16-21	260	540	930	LQM S4UL
Aromatic EC >21-35	1,100	1,500	1,700	LQM S4UL
Aromatic EC >35-44	1,100	1,500	1,700	LQM S4UL
Aromatic EC >44-70	1,600	1,800	1,900	LQM S4UL
ASBESTOS				
None Detectable			Aviron Adopted Value	

Appendix

V Soil Geotechnical Results

Summary of Water Content, Liquid Limit (1 point) and Plastic Limit Results

Job No.	Project Name	Programme	
37219	Ashcroft House, Shoreham, BN43 6YU	Samples received	30/04/2025
		Schedule received	01/05/2025
Project No.	Client	Project started	01/05/2025
25-127.01-2	Aviron	Testing Started	21/05/2025

Hole No.	Sample				Soil Description	Water content	Passing 425µm	Preparation	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type		%	%		%	%	%	
BH1	-	1.00	1.45	U	High strength brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular to angular)	15.9	57	Tested after washing to remove >425um	47	18	29	
BH2	-	1.00	1.45	U	Medium strength brown slightly sandy silty CLAY with rare fm sub-angular to angular gravel	22.9	99	Tested in natural condition	41	19	22	

80g/300 cone used unless otherwise stated, Corretation factor for 1 point method carried out using Table 1 (BS1377: 1990, Part 2)

Test Methods: BS EN ISO 17892
Part 1: 2014+A1:2022 Water content
Part 12: 2018 +A2:2022 Liquid & plastic limit

These results only apply to the items tested
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Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

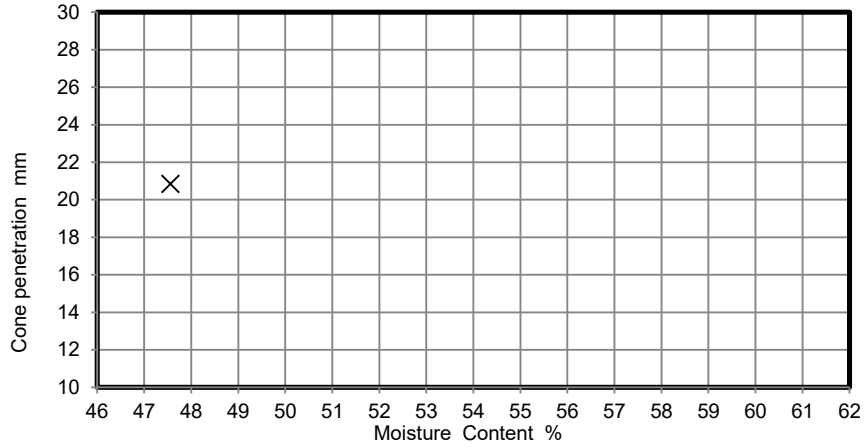
Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved
Initials J.P
Date: 22/05/2025

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	BH1
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01-2	Client	Aviron	Depth Top m	1.00
Soil Description	High strength brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular to angular)			Depth Base m	1.45
				Sample Type	U
				Samples received	30/04/2025
				Schedules received	01/05/2025
				Project Started	01/05/2025
				Date Tested	21/05/2025



WATER CONTENT	**15.9**	**%**
% PASSING 425µm SIEVE	**57**	**%**
LIQUID LIMIT	**47**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**29**	**%**

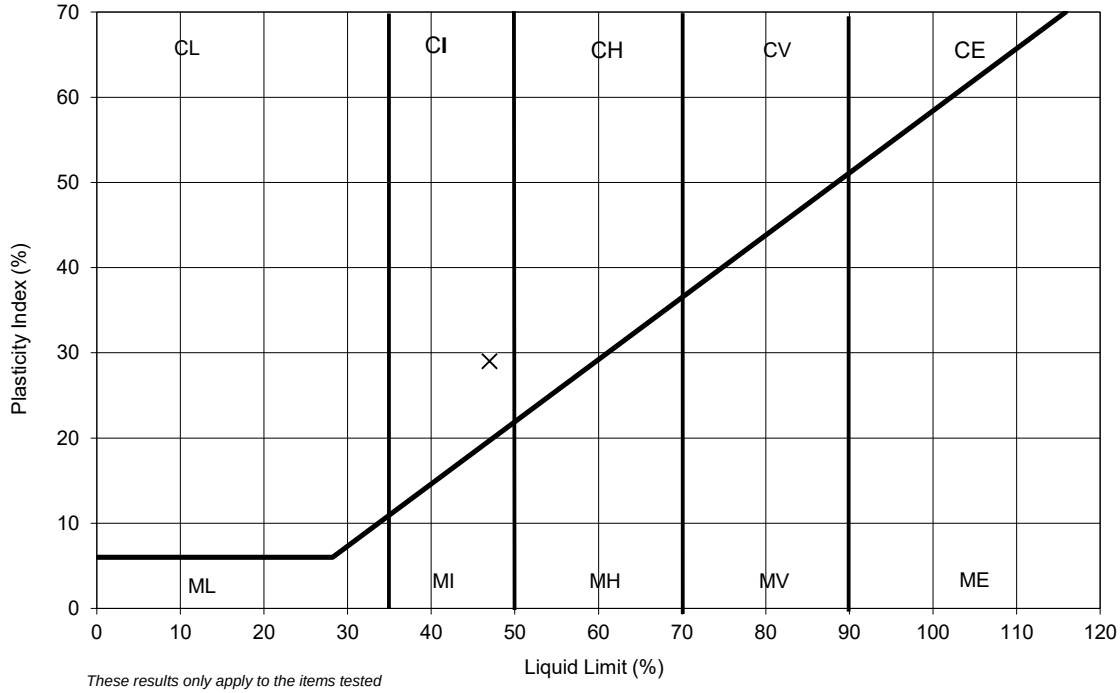
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 22/05/2025

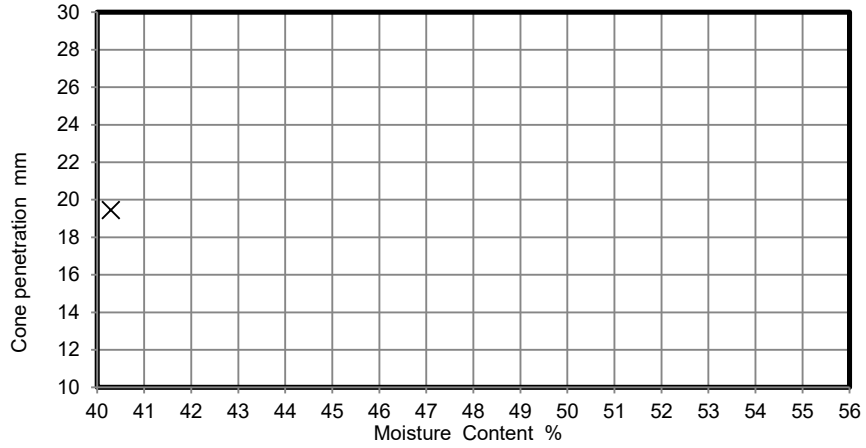
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

UKAS TESTING 2519

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

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	BH2
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01-2	Client	Aviron	Depth Top m	1.00
Soil Description	Medium strength brown slightly sandy silty CLAY with rare fm sub-angular to angular gravel			Depth Base m	1.45
				Sample Type	U
				Samples received	30/04/2025
				Schedules received	01/05/2025
				Project Started	01/05/2025
				Date Tested	21/05/2025



WATER CONTENT	**22.9**	**%**
% PASSING 425µm SIEVE	**99**	**%**
LIQUID LIMIT	**41**	**%**
PLASTIC LIMIT	**19**	**%**
PLASTICITY INDEX	**22**	**%**

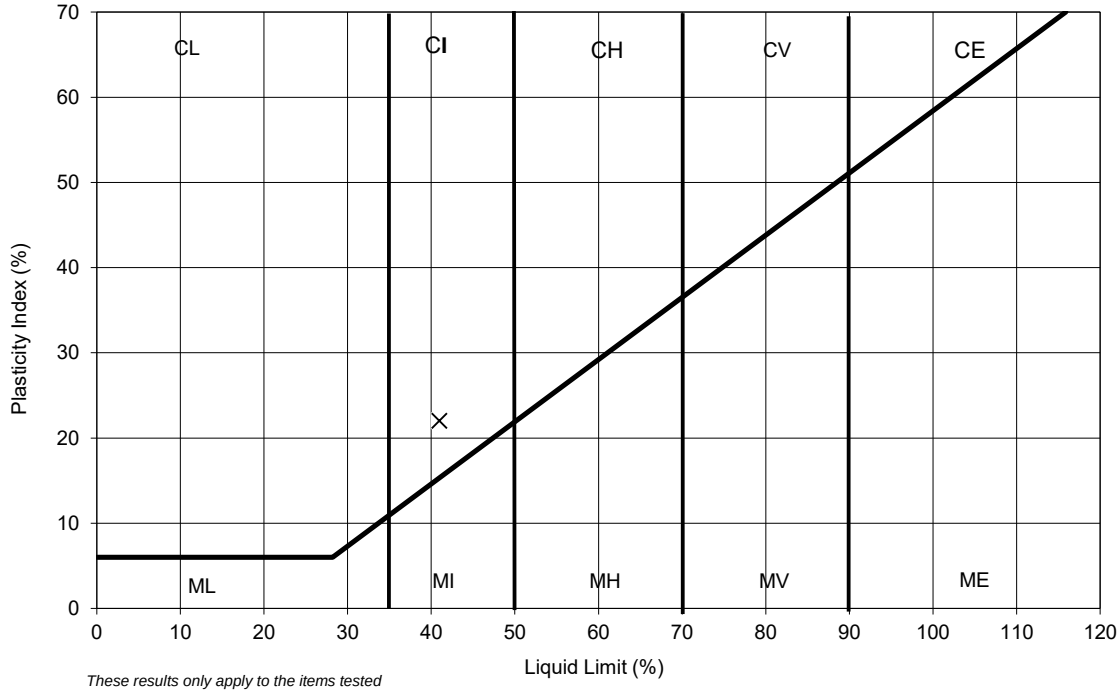
Preparation Method

Tested in natural condition

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 22/05/2025

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

Summary of Water Content, Liquid Limit (1 point) and Plastic Limit Results

Job No.	Project Name	Programme	
37219	Ashcroft House, Shoreham, BN43 6YU	Samples received	30/04/2025
		Schedule received	19/05/2025
Project No.	Client	Project started	19/05/2025
25-127.01	Aviron	Testing Started	22/05/2025

Hole No.	Sample				Soil Description	Water content	Passing 425µm	Preparation	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type		%	%		%	%	%	
WS1	-	1.00	-	D	Brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and angular to sub-angular)	18.9	70	Tested after >425um removed by hand	42	18	24	
WS1	-	2.00	-	D	Yellowish brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular flint)	21.5	73	Tested after washing to remove >425um	31	17	14	
WS2	-	1.00	-	D	Brown slightly sandy silty CLAY with rare fine sub-angular gravel	19.0	99	Tested after >425um removed by hand	41	18	23	
WS4	-	1.00	-	D	Brown slightly sandy silty CLAY	20.4	100	Tested in natural condition	43	19	24	
WS4	-	2.00	-	D	Brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular)	15.5	66	Tested after washing to remove >425um	28	17	11	
WS6	-	1.00	-	D	Brown sandy silty CLAY with rare fine sub-angular gravel	25.2	99	Tested after >425um removed by hand	31	18	13	
WS6	-	2.00	-	D	Brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular)	14.7	76	Tested after washing to remove >425um	29	17	12	
WS7	-	1.00	-	D	Brown silty CLAY with rare fine sub-angular gravel	21.6	99	Tested after >425um removed by hand	43	17	26	
WS7	-	2.00	-	D	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)	22.9	60	Tested after washing to remove >425um	47	18	29	
WS9	-	1.00	-	D	Brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and angular to sub-angular flint)	20.3	87	Tested after >425um removed by hand	37	18	19	
WS9	-	2.00	-	D	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)	22.8	72	Tested after >425um removed by hand	44	18	26	
WS9	-	3.00	-	D	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)	13.9	49	Tested after washing to remove >425um	34	16	18	

80g/300 cone used unless otherwise stated, Corretation factor for 1 point method carried out using Table 1 (BS1377: 1990, Part 2)

Test Methods: BS EN ISO 17892
Part 1: 2014+A1:2022 Water content
Part 12: 2018 +A2:2022 Liquid & plastic limit

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

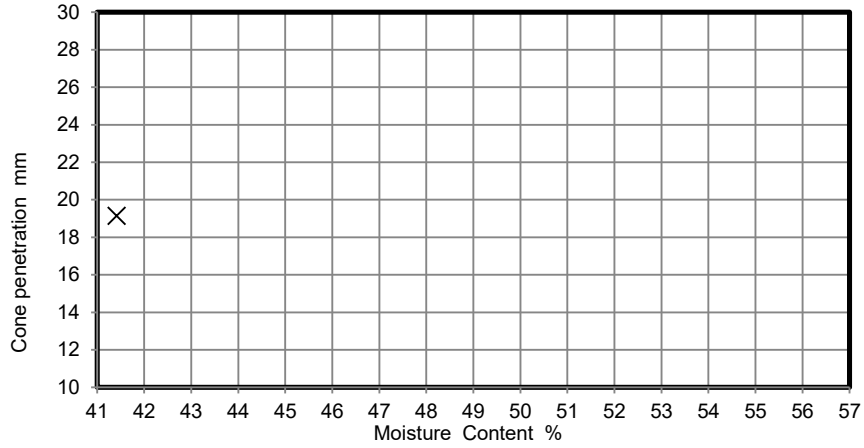
Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved
Initials J.P
Date: 27/05/2025

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS1
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**18.9**	**%**
% PASSING 425µm SIEVE	**70**	**%**
LIQUID LIMIT	**42**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**24**	**%**

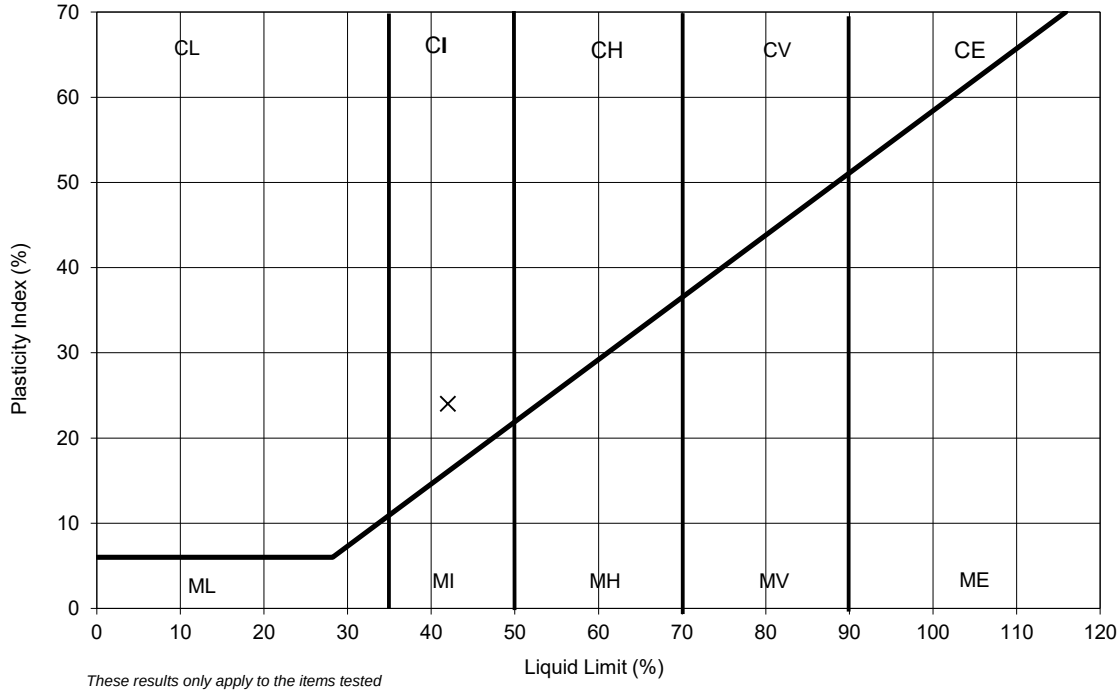
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 27/05/2025

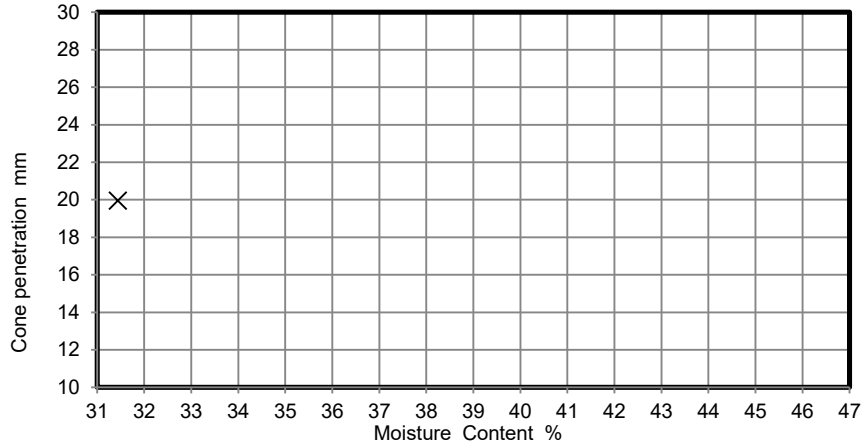
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS1
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	2.00
Soil Description	Yellowish brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular flint)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	22/05/2025



WATER CONTENT	**21.5**	**%**
% PASSING 425µm SIEVE	**73**	**%**
LIQUID LIMIT	**31**	**%**
PLASTIC LIMIT	**17**	**%**
PLASTICITY INDEX	**14**	**%**

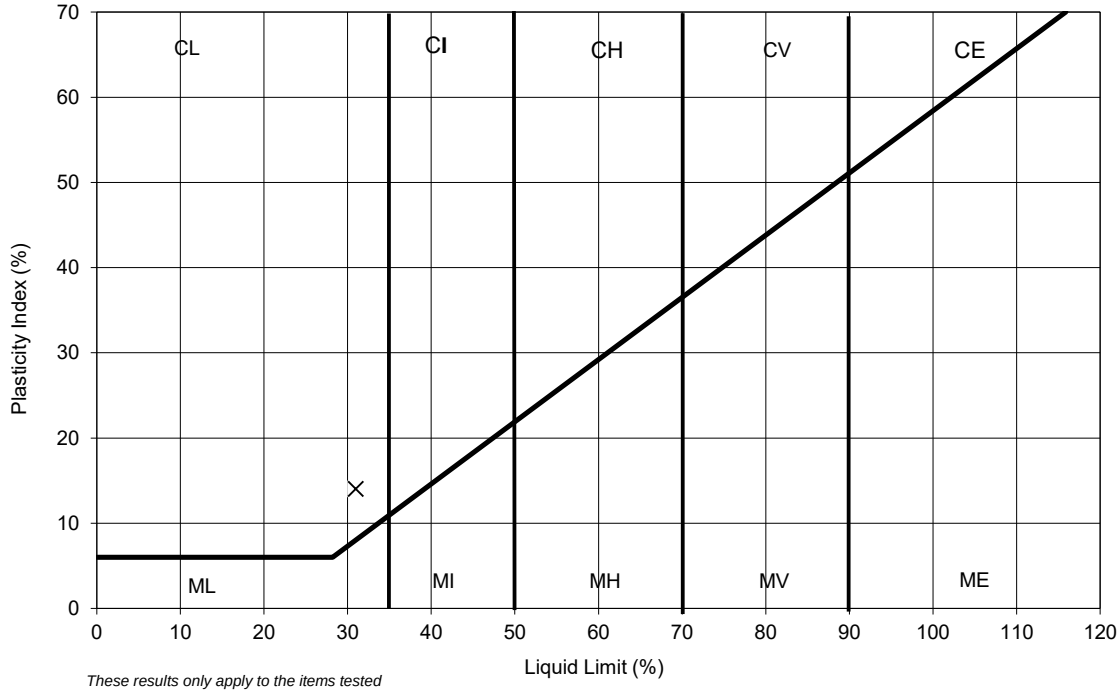
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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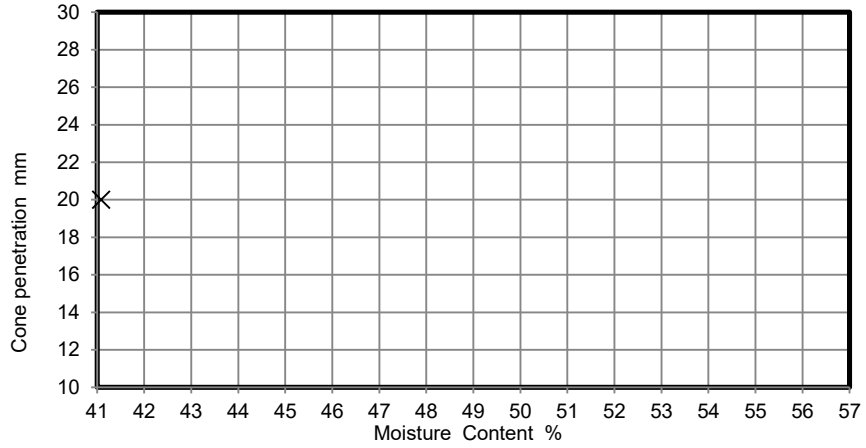
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UKAS TESTING 2519

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS2
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown slightly sandy silty CLAY with rare fine sub-angular gravel			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**19.0**	**%**
% PASSING 425µm SIEVE	**99**	**%**
LIQUID LIMIT	**41**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**23**	**%**

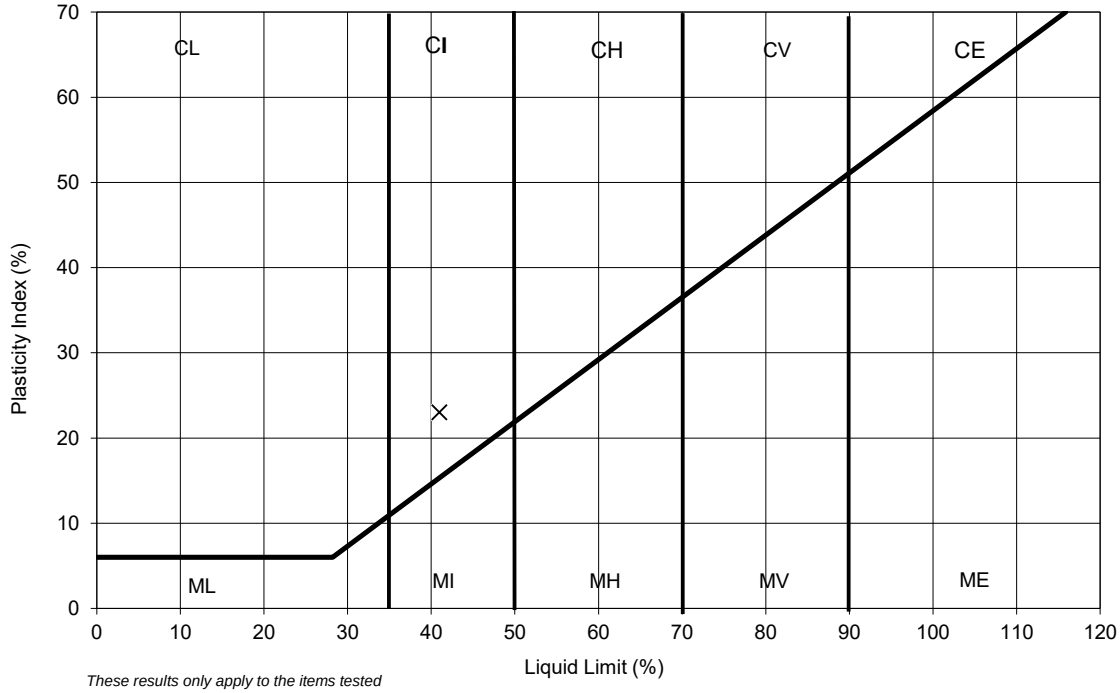
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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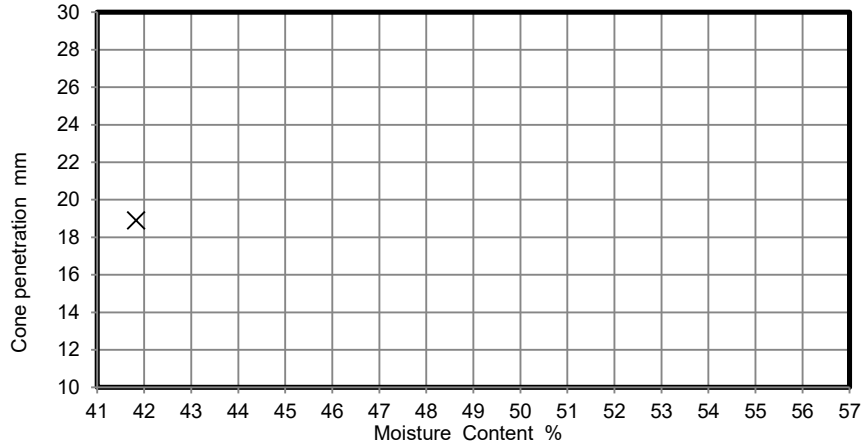
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS4
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown slightly sandy silty CLAY			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	22/05/2025



WATER CONTENT	**20.4**	**%**
% PASSING 425µm SIEVE	**100**	**%**
LIQUID LIMIT	**43**	**%**
PLASTIC LIMIT	**19**	**%**
PLASTICITY INDEX	**24**	**%**

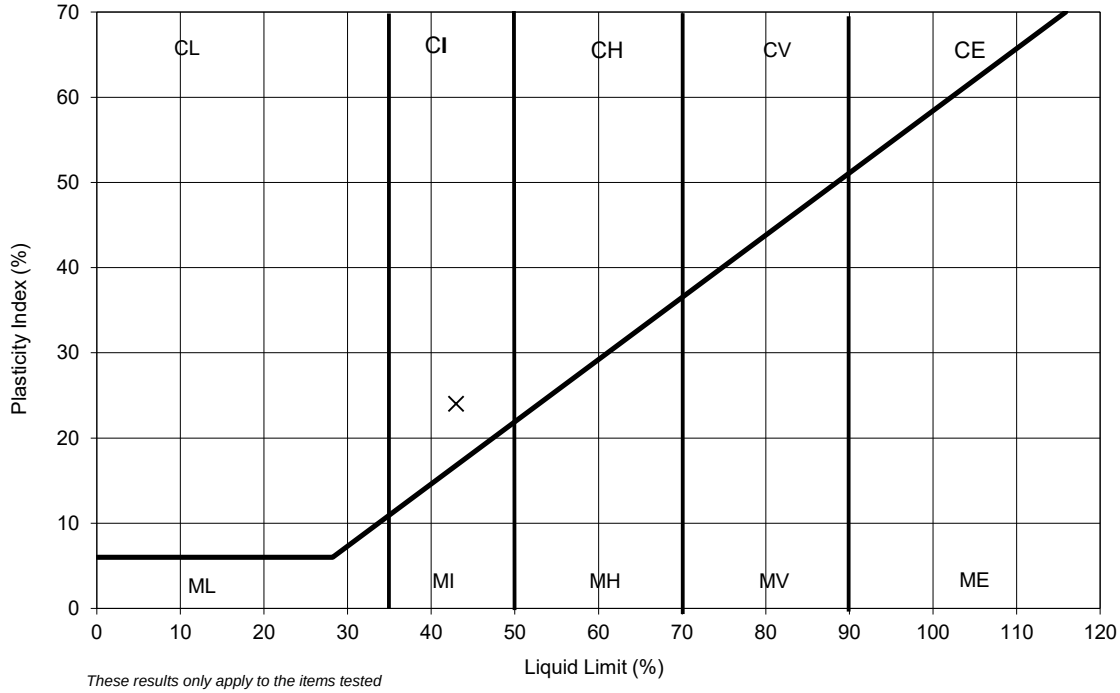
Preparation Method

Tested in natural condition

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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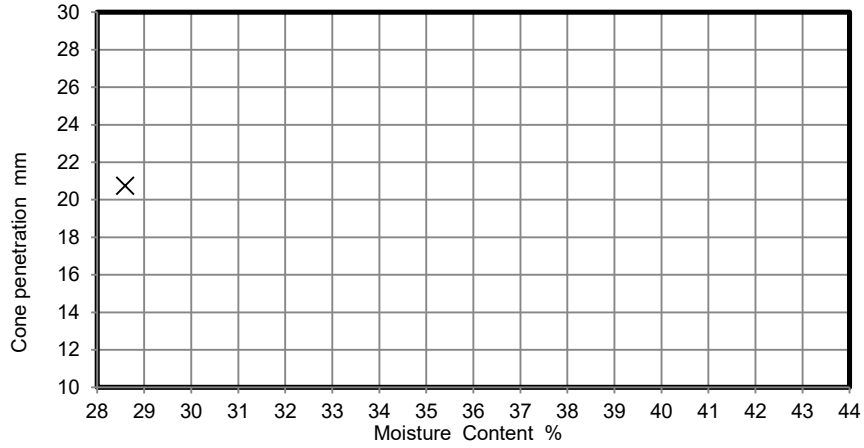
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS4
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	2.00
Soil Description	Brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**15.5**	**%**
% PASSING 425µm SIEVE	**66**	**%**
LIQUID LIMIT	**28**	**%**
PLASTIC LIMIT	**17**	**%**
PLASTICITY INDEX	**11**	**%**

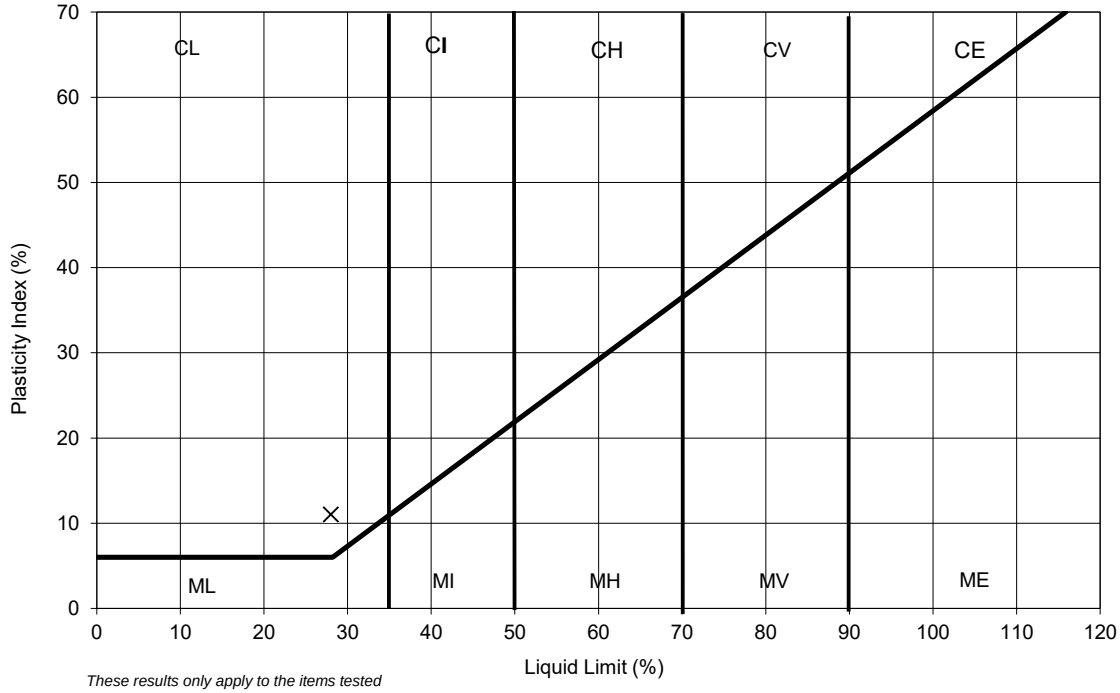
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



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TEST METHOD

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BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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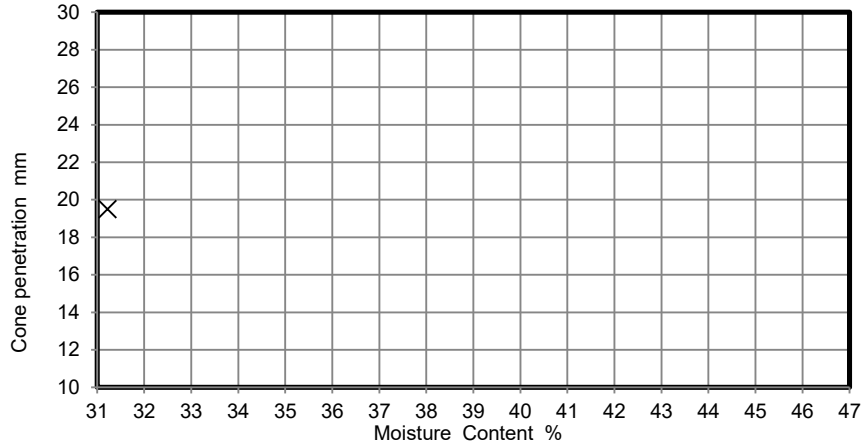
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS6
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown sandy silty CLAY with rare fine sub-angular gravel			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	22/05/2025



WATER CONTENT	**25.2**	**%**
% PASSING 425µm SIEVE	**99**	**%**
LIQUID LIMIT	**31**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**13**	**%**

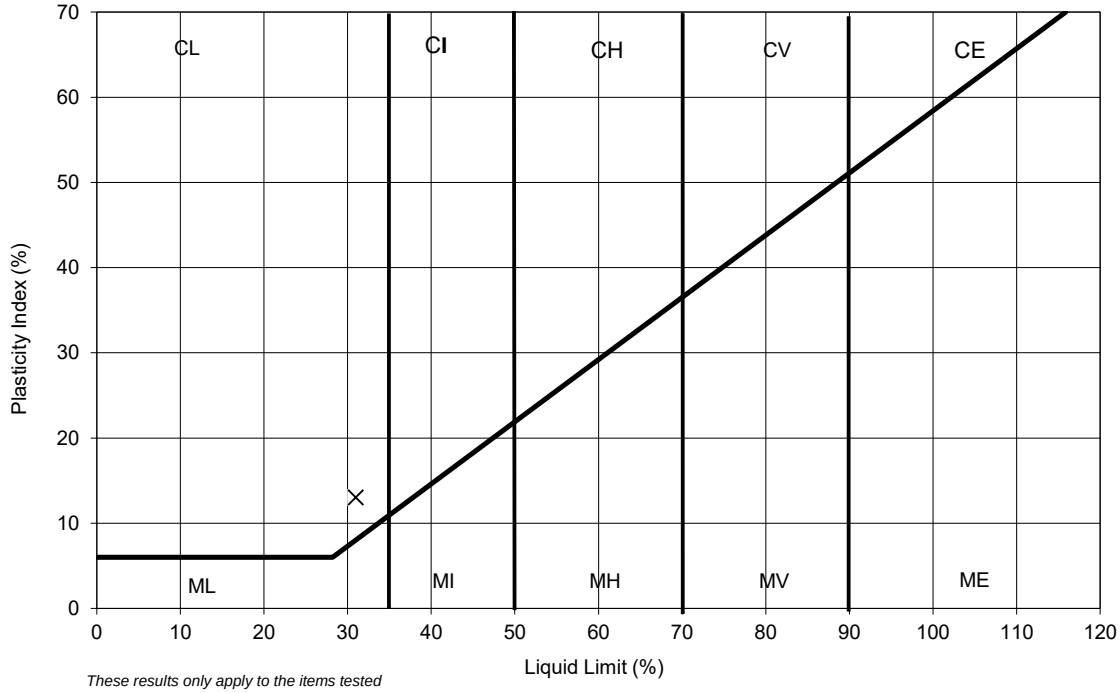
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

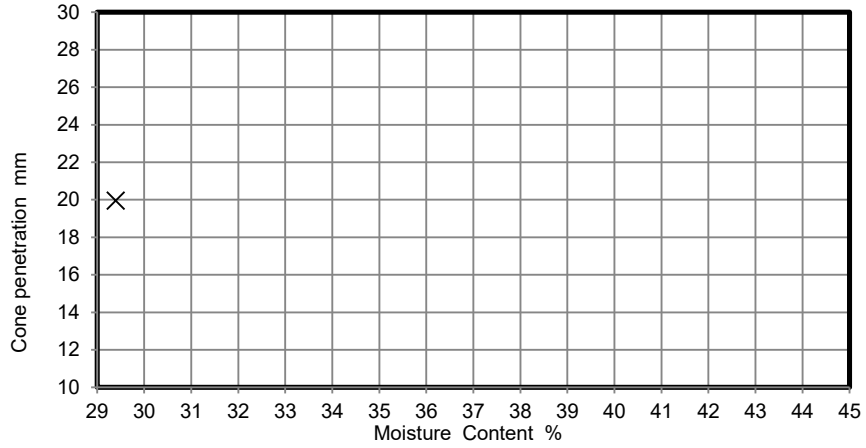
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	37219
				Borehole/Pit No.	WS6
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	2.00
Soil Description	Brown slightly gravelly sandy silty CLAY (gravel is fm and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**14.7**	**%**
% PASSING 425µm SIEVE	**76**	**%**
LIQUID LIMIT	**29**	**%**
PLASTIC LIMIT	**17**	**%**
PLASTICITY INDEX	**12**	**%**

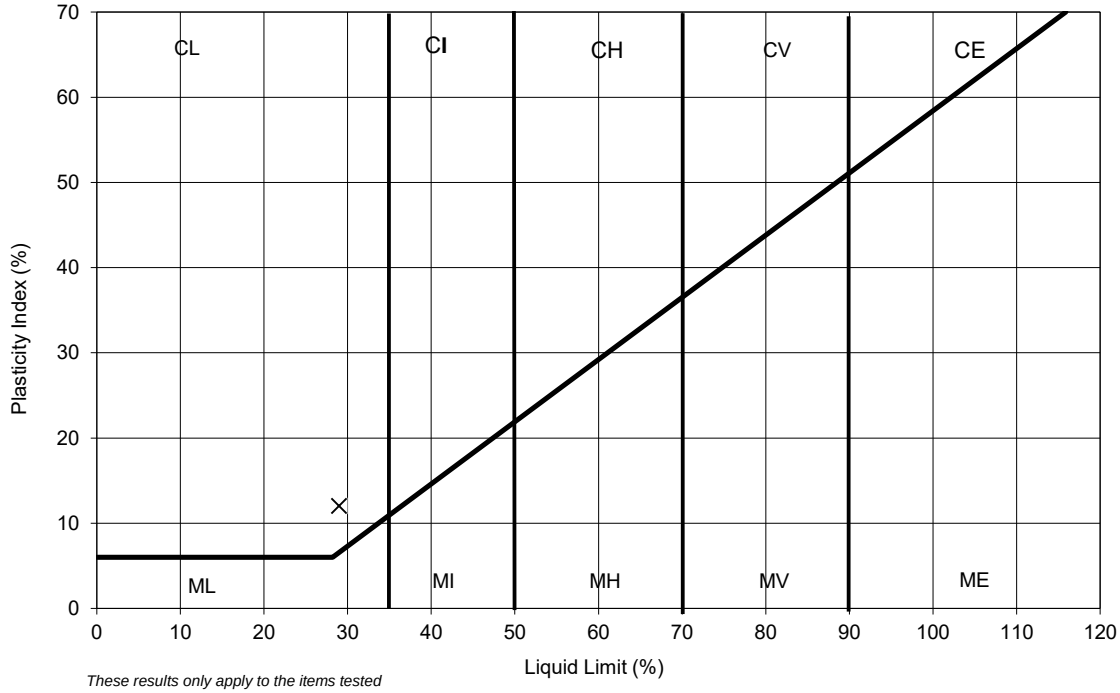
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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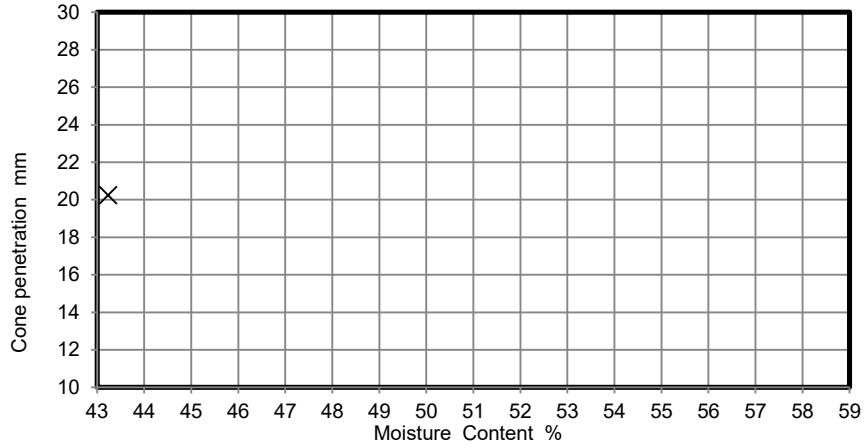
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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS7
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown silty CLAY with rare fine sub-angular gravel			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**21.6**	**%**
% PASSING 425µm SIEVE	**99**	**%**
LIQUID LIMIT	**43**	**%**
PLASTIC LIMIT	**17**	**%**
PLASTICITY INDEX	**26**	**%**

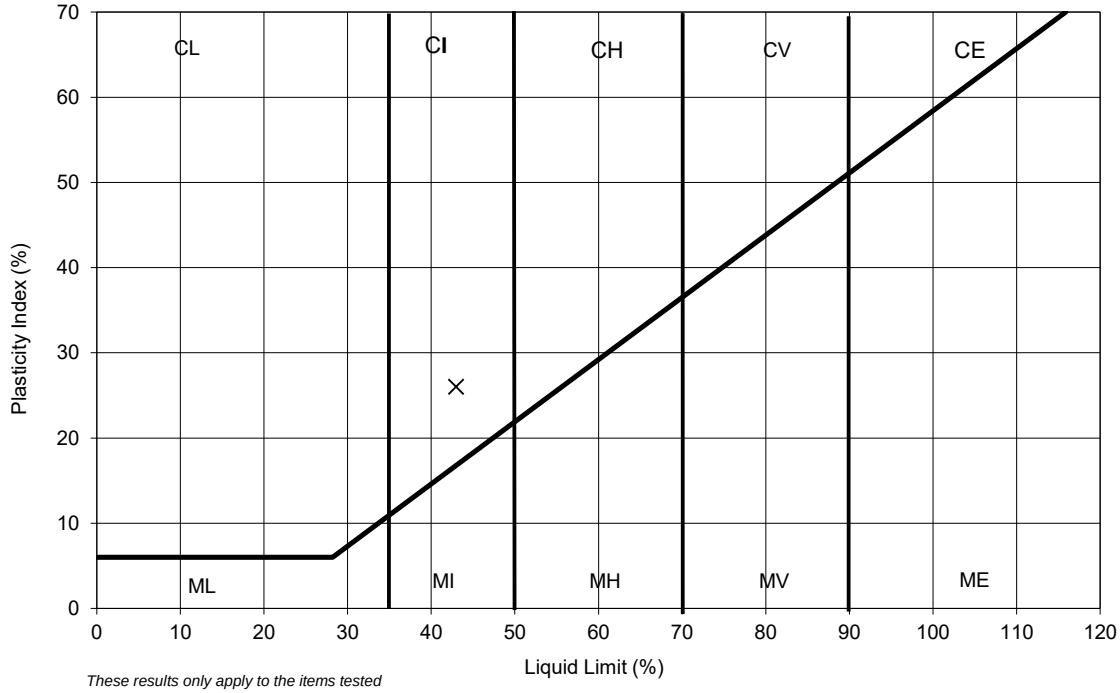
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

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Initials: J.P
Date: 27/05/2025

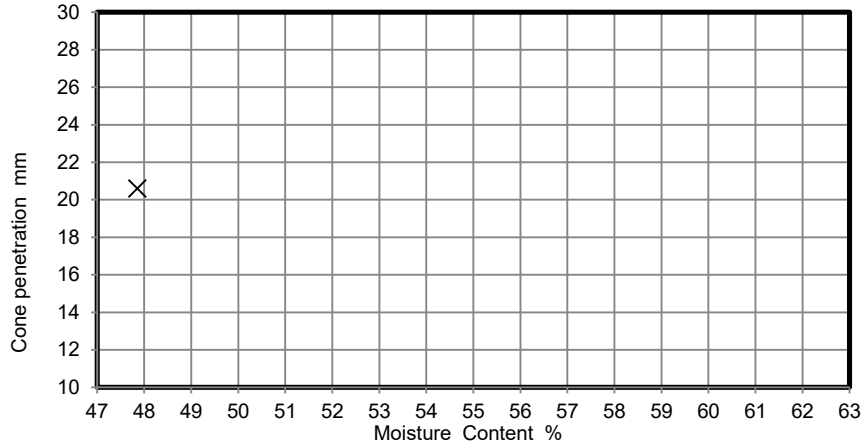
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Tel: 01923 711 288 Email: James@k4soils.com

2519

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

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS7
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	2.00
Soil Description	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**22.9**	**%**
% PASSING 425µm SIEVE	**60**	**%**
LIQUID LIMIT	**47**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**29**	**%**

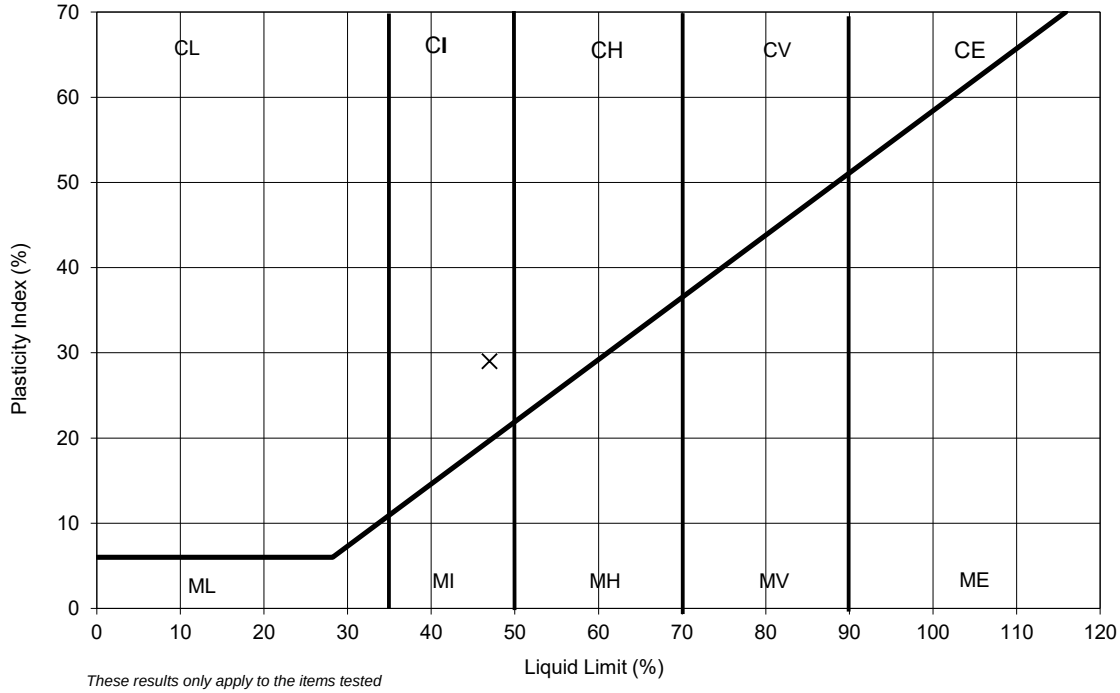
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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

TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 27/05/2025

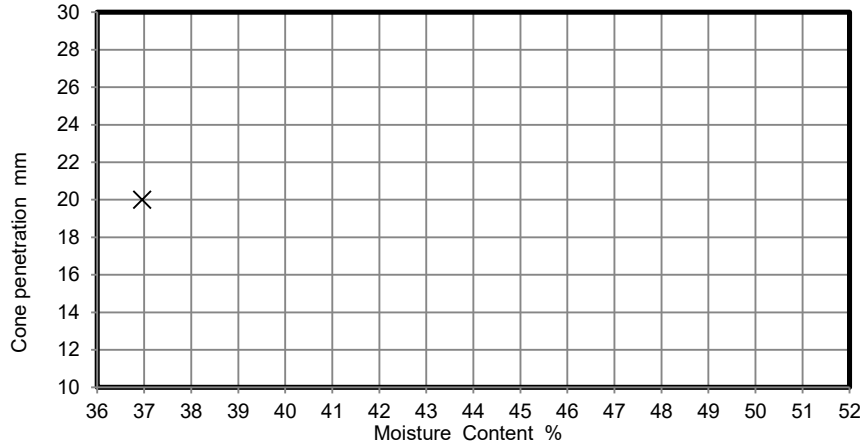
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

UKAS TESTING 2519

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

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS9
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	1.00
Soil Description	Brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and angular to sub-angular flint)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**20.3**	**%**
% PASSING 425µm SIEVE	**87**	**%**
LIQUID LIMIT	**37**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**19**	**%**

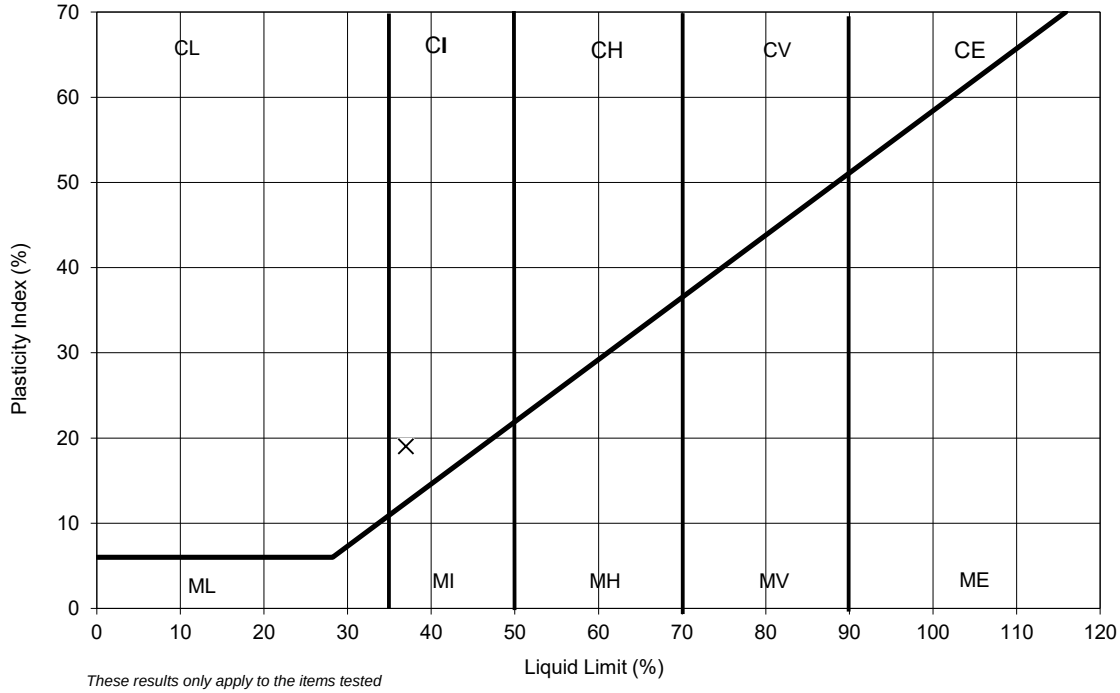
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 27/05/2025

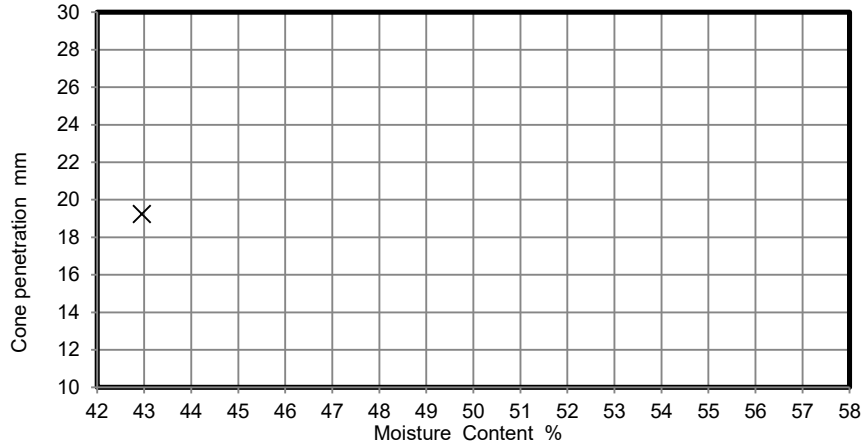
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

UKAS TESTING 2519

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS9
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	2.00
Soil Description	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**22.8**	**%**
% PASSING 425µm SIEVE	**72**	**%**
LIQUID LIMIT	**44**	**%**
PLASTIC LIMIT	**18**	**%**
PLASTICITY INDEX	**26**	**%**

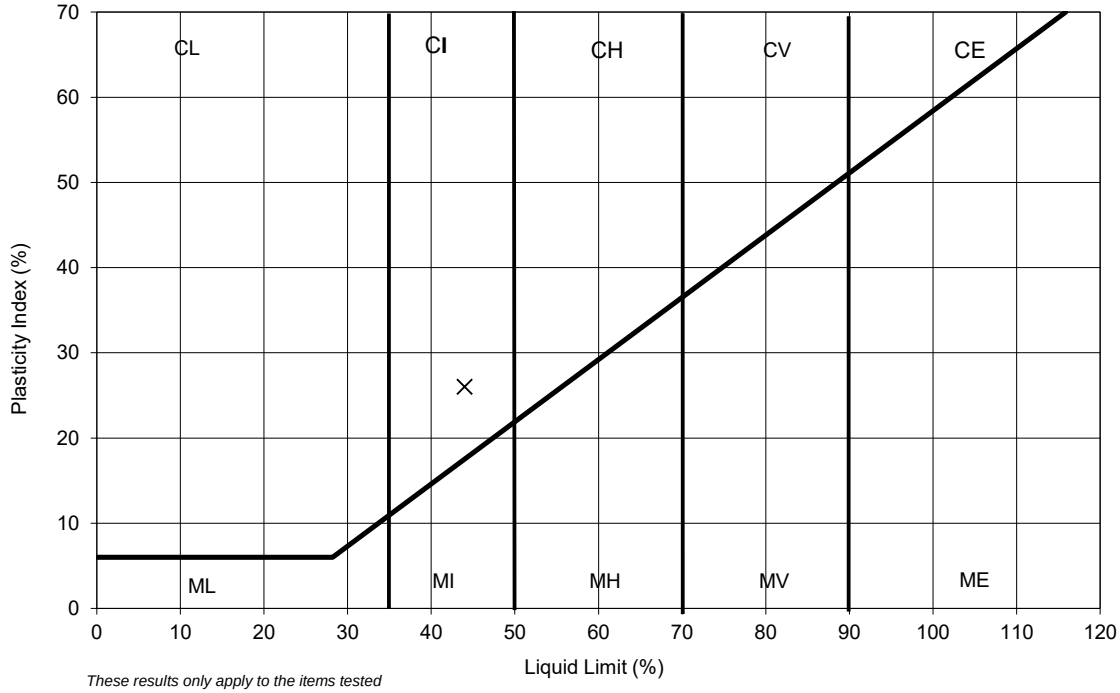
Preparation Method

Tested after >425um removed by hand

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 27/05/2025

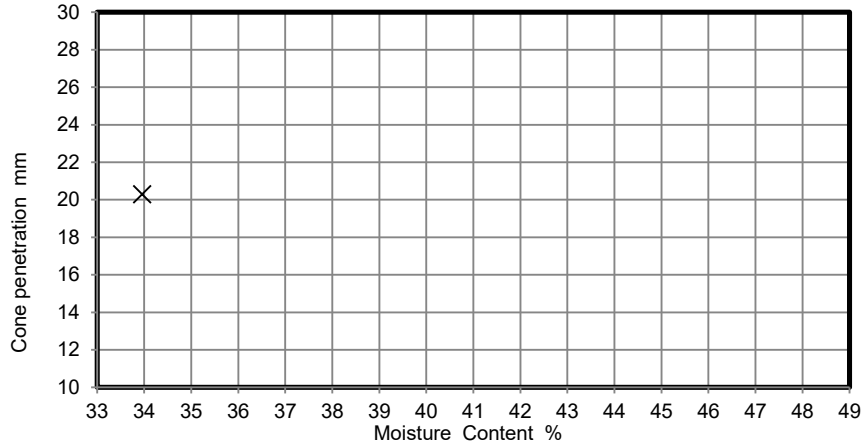
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

UKAS TESTING 2519

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

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

				Job No.	37219
				Borehole/Pit No.	WS9
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top m	3.00
Soil Description	Brown slightly sandy gravelly silty CLAY (gravel is fmc and angular to sub-angular)			Depth Base m	-
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
				Project Started	19/05/2025
				Date Tested	23/05/2025



WATER CONTENT	**13.9**	**%**
% PASSING 425µm SIEVE	**49**	**%**
LIQUID LIMIT	**34**	**%**
PLASTIC LIMIT	**16**	**%**
PLASTICITY INDEX	**18**	**%**

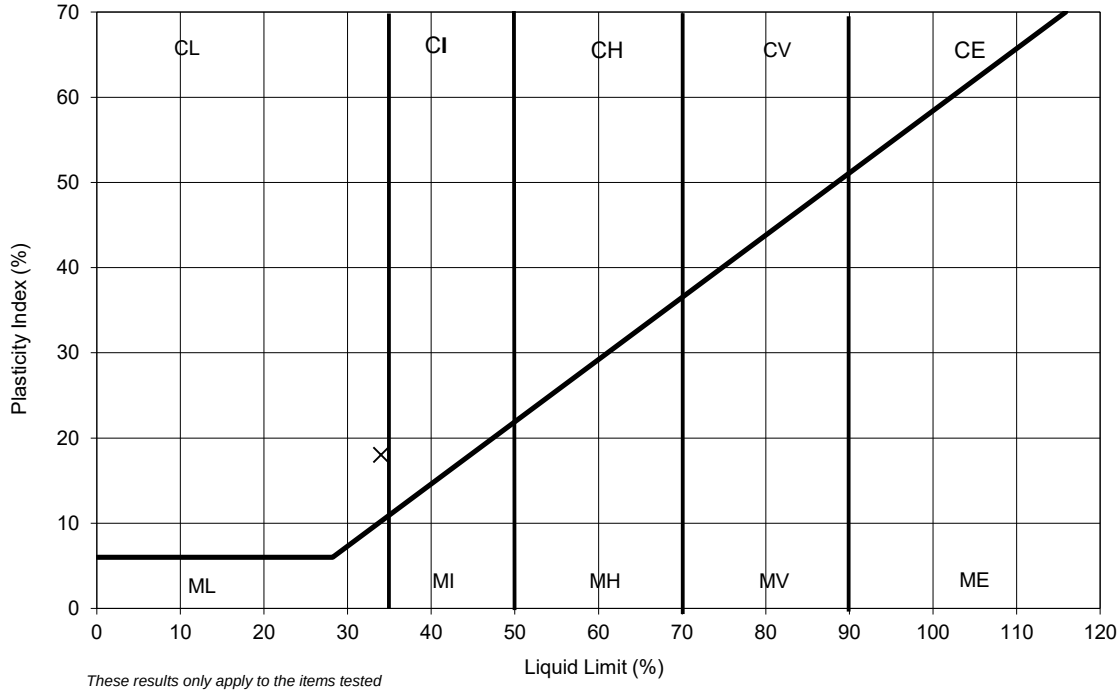
Preparation Method

Tested after washing to remove >425um

Remarks

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

PLASTICITY INDEX



These results only apply to the items tested

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TEST METHOD

BS EN ISO17892: Part 1:2014+A1:2022 Water Content
BS EN ISO 17892: Part 12:2018+A2:2022 Liquid Limit & Plastic Limit

Checked and Approved

Initials: J.P
Date: 27/05/2025

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

2519

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

Unconsolidated Undrained Triaxial Compression tests without measurement of pore pressure
Summary of Results

Tests carried out in accordance with BS EN ISO 17892-8:2018

Job No.	Project Name	Programme	
37219	Ashcroft House, Shoreham, BN43 6YU	Samples received	30/04/2025
		Schedule received	01/05/2025
Project No.	Client	Project started	01/05/2025
25-127.01-2	Aviron	Testing Started	22/05/2025

Hole No.	Sample Ref	Top m	Base m	Type	Soil Description	Test Type	Density bulk Mg/m3	Density dry Mg/m3	w %	Length mm	Diameter mm	σ3 kPa	At failure: Axial strain %	σ1 - σ3 kPa	cu kPa	Mode	Remarks
BH1	-	1.00	1.45	U	High strength brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular to angular)	UU	2.11	1.75	20.6	198	102	30	20	182	91	C	
BH2	-	1.00	1.45	U	Medium strength brown slightly sandy silty CLAY with rare fm sub-angular to angular gravel	UU	2.05	1.65	24.3	198	102	30	20	136	68	C	

Legend
UU - single stage test (single and multiple specimens) — σ3 Cell pressure — Mode of failure ; B - Brittle
UUM - Multistage test on a single specimen — σ1 - σ3 Maximum corrected deviator stress — P - Plastic
suffix R - remoulded or recompacted — cu Undrained shear strength, ½ (σ1 - σ3) — C - Compound

Test Report by K4 SOILS LABORATORY
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Email: james@k4soils.com

Checked and Approved
Initials: J.P
Date: 22/05/2025

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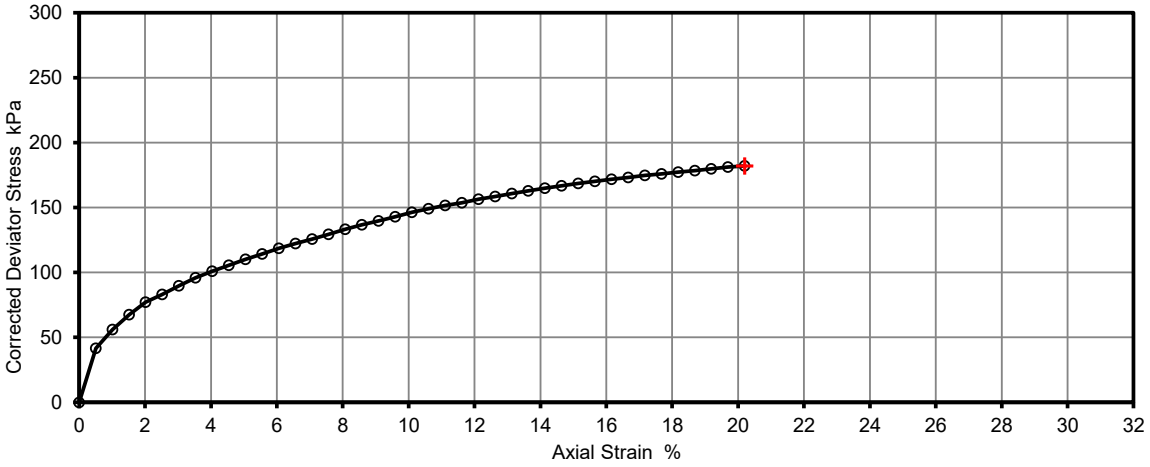
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	37219
				Borehole/Pit No.	BH1
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01-2	Client	Aviron	Depth Top	1.00 m
Soil Description	High strength brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular to angular)			Depth Base	1.45 m
				Sample Type	U
				Samples received	30/04/2025
				Schedules received	01/05/2025
Test Method	BS EN ISO 17892-8:2018			Date of test	22/05/2025

Remarks

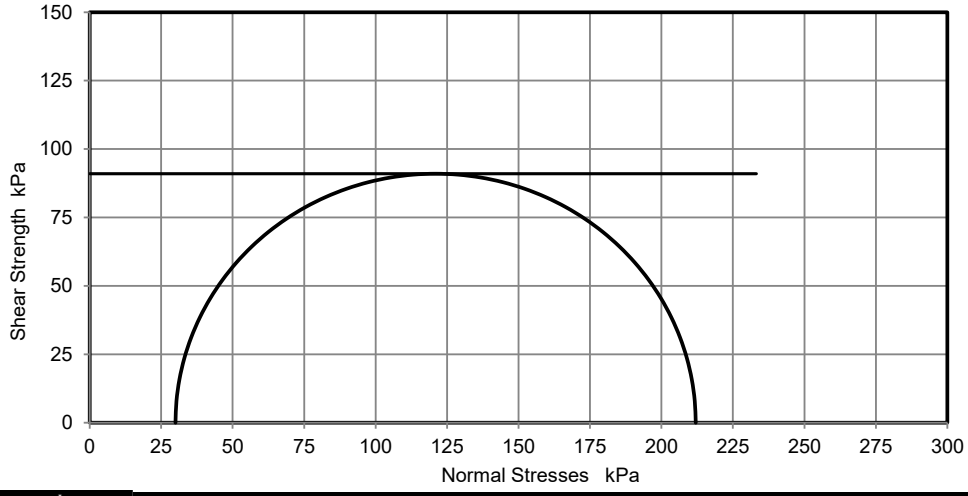
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	2.11	Mg/m3
Water Content	20.6	%
Dry Density	1.75	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	20	%
Deviator Stress, (σ1 - σ3)f	182	kPa
Undrained Shear Strength, cu	91	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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

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

Checked and Approved
Initials: J.P
Date 22/05/2025

UKAS TESTING 2519

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

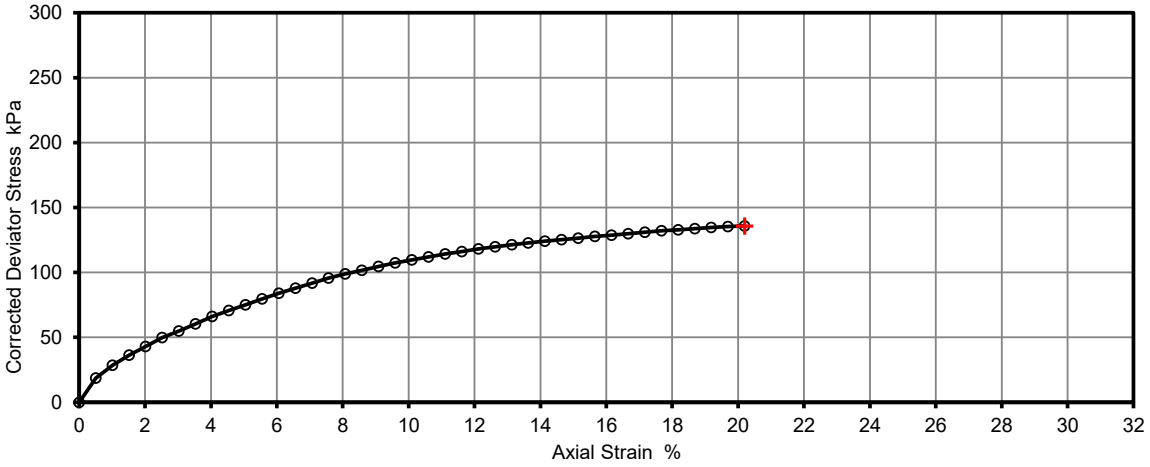
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen			Job Ref	37219
				Borehole/Pit No.	BH2
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01-2	Client	Aviron	Depth Top	1.00 m
Soil Description	Medium strength brown slightly sandy silty CLAY with rare fm sub-angular to angular gravel			Depth Base	1.45 m
				Sample Type	U
				Samples received	30/04/2025
				Schedules received	01/05/2025
Test Method	BS EN ISO 17892-8:2018			Date of test	22/05/2025

Remarks

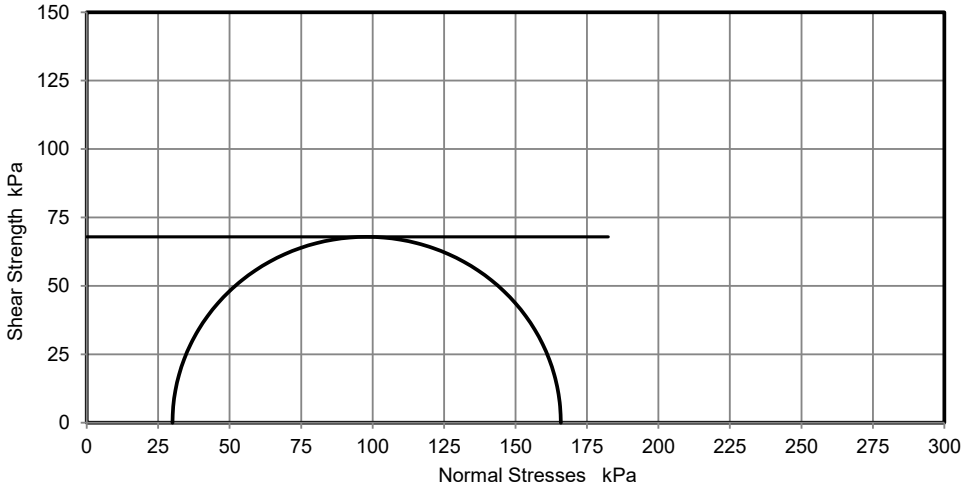
Position within sample

Test Number	1	
Length	198.0	mm
Diameter	102.0	mm
Bulk Density	2.05	Mg/m3
Water Content	24.3	%
Dry Density	1.65	Mg/m3
Rate of Strain	2.0	%/min
Cell Pressure	30	kPa
Axial Strain	20	%
Deviator Stress, (σ1 - σ3)f	136	kPa
Undrained Shear Strength, cu	68	kPa ½(σ1 - σ3)f
Mode of Failure	Compound	

Deviator Stress v Axial Strain



Mohr Circles



Deviator stress corrected for area change and membrane effects

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Date 22/05/2025

UKAS TESTING 2519

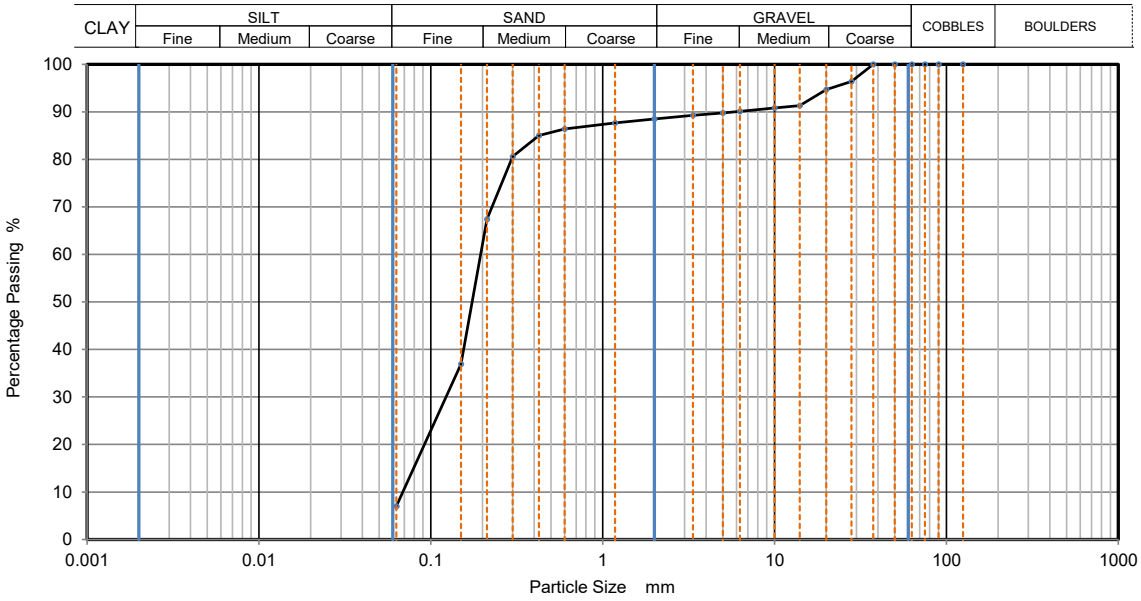
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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

PARTICLE SIZE DISTRIBUTION

Site Name	Ashcroft House, Shoreham, BN43 6YU			Job Ref	37219
				Borehole/Pit No.	BH1
Project No.	25-127.01-2	Client	Aviron	Sample No.	-
Soil Description	Brown clayey gravelly SAND (gravel is fmc and sub-rounded to sub-angular)			Depth Top	5.00 m
				Depth Base	5.45 m
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	01/05/2025
Test Method	BS EN ISO 17892 Part 4: 2016			Project started	01/05/2025
				Date tested	12/05/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	96		
20	95		
14	91		
10	91		
6.3	90		
5	90		
3.35	89		
2	89		
1.18	88		
0.6	86		
0.425	85		
0.3	81		
0.212	67		
0.15	37		
0.063	7		

Sample Proportions	% dry mass
Very coarse	0
Gravel	12
Sand	81
Fines <0.063mm	7

Grading Analysis		
D100	mm	
D60	mm	0.195
D30	mm	0.123
D10	mm	0.0687
Uniformity Coefficient		2.8
Curvature Coefficient		1.1

Remarks

Preparation and testing in accordance with ISO17892 Part 4 unless noted below

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K4 Soils Laboratory

Unit 8, Olds Close, Watford, Herts, WD18 9RU

Email: james@k4soils.com

Tel: 01923 711288

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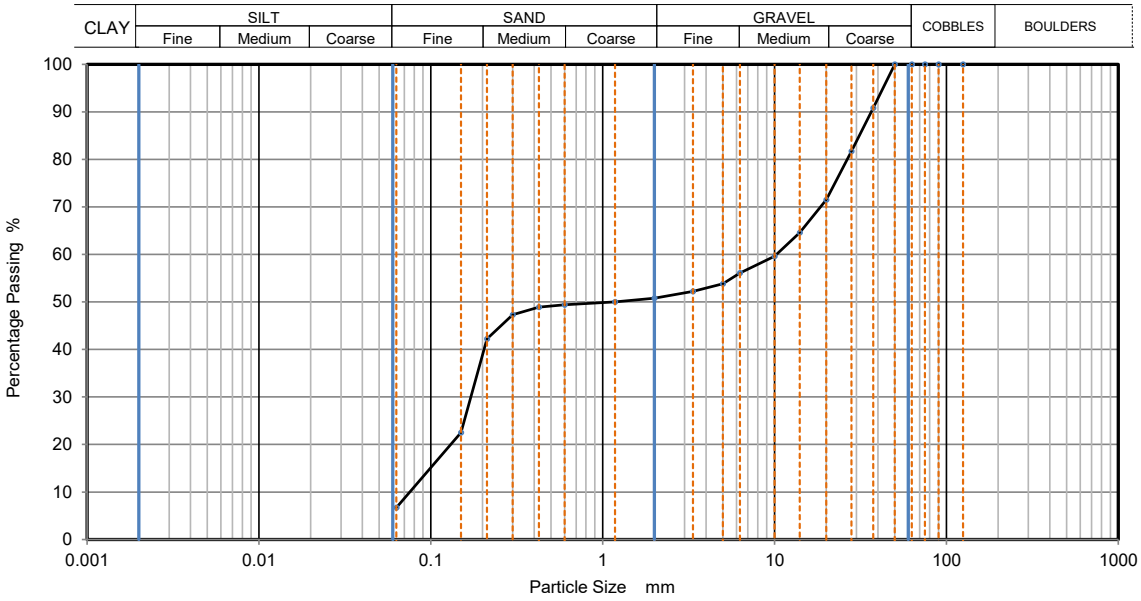
Initials: **J.P**

Date: 22/05/2025

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) MSF-5-R3

PARTICLE SIZE DISTRIBUTION

Site Name	Ashcroft House, Shoreham, BN43 6YU			Job Ref	37219
				Borehole/Pit No.	BH2
Project No.	25-127.01-2	Client	Aviron	Sample No.	-
Soil Description	Brown clayey very sandy GRAVEL (gravel is fmc chalk and occasional fmc sub-angular to angualr flint)			Depth Top	5.00 m
				Depth Base	5.45 m
				Sample Type	B
				Samples received	30/04/2025
				Schedules received	01/05/2025
Test Method	BS EN ISO 17892 Part 4: 2016			Project started	01/05/2025
These results only apply to the items tested				Date tested	12/05/2025



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	91		
28	82		
20	72		
14	65		
10	60		
6.3	56		
5	54		
3.35	52		
2	51		
1.18	50		
0.6	49		
0.425	49		
0.3	47		
0.212	42		
0.15	23		
0.063	7		

Sample Proportions	% dry mass
Very coarse	0
Gravel	49
Sand	44
Fines <0.063mm	7

Grading Analysis		
D100	mm	
D60	mm	10.3
D30	mm	0.171
D10	mm	0.0754
Uniformity Coefficient		140
Curvature Coefficient		0.038

Remarks

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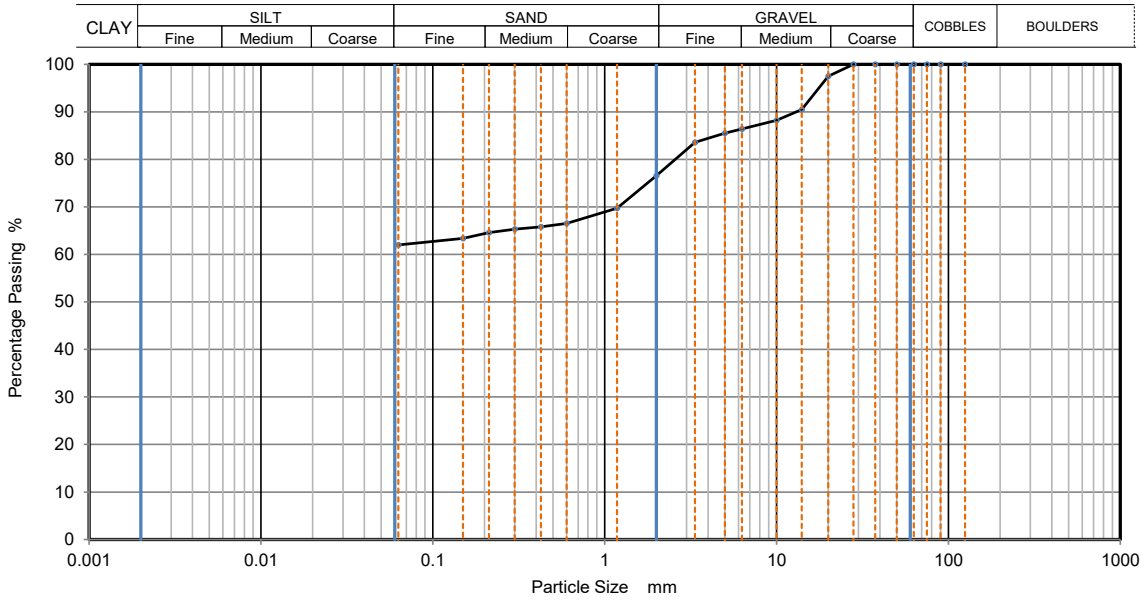
Initials: **J.P**

Date: 22/05/2025

PARTICLE SIZE DISTRIBUTION

				Job Ref	37219
				Borehole/Pit No.	WS2
Site Name	Ashcroft House, Shoreham, BN43 6YU			Sample No.	-
Project No.	25-127.01	Client	Aviron	Depth Top	2.00 m
Soil Description	Brown and light brown slightly sandy slightly gravelly silty CLAY with occasional calcareous nodules (gravel is fmc and angular to sub-angular)			Depth Base	- m
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
Test Method	BS EN ISO 17892 Part 4: 2016			Project started	19/05/2025
				Date tested	27/05/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	91		
10	88		
6.3	86		
5	86		
3.35	84		
2	77		
1.18	70		
0.6	67		
0.425	66		
0.3	65		
0.212	65		
0.15	63		
0.063	62		

Sample Proportions	% dry mass
Very coarse	0
Gravel	23
Sand	15
Fines <0.063mm	62

Grading Analysis		
D100	mm	
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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K4 Soils Laboratory

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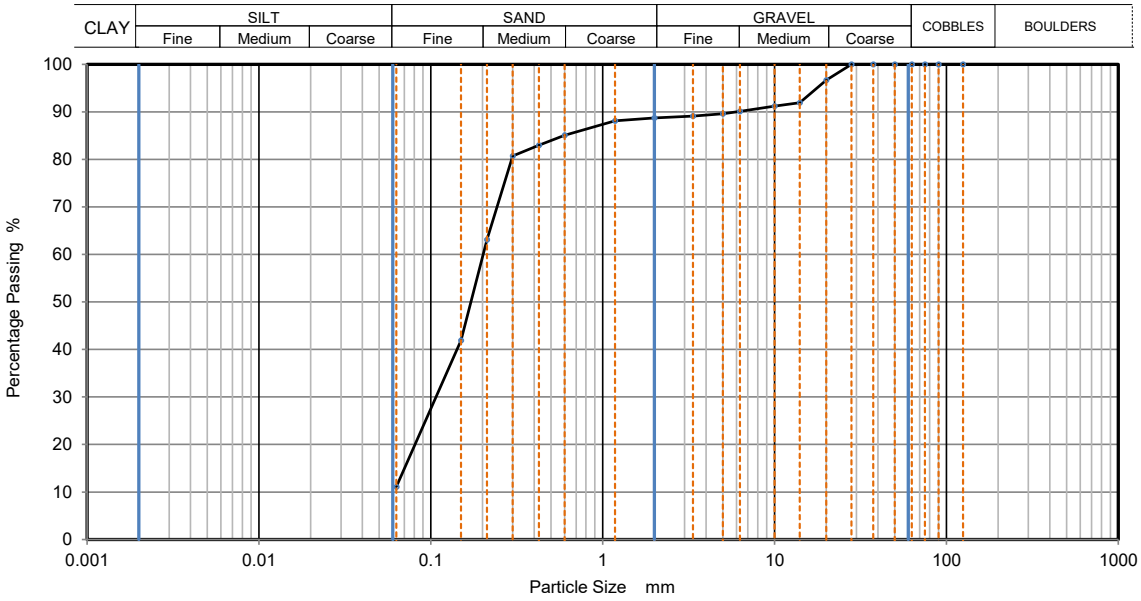
Initials: **J.P**

Date: 27/05/2025

PARTICLE SIZE DISTRIBUTION

Site Name	Ashcroft House, Shoreham, BN43 6YU			Job Ref	37219
				Borehole/Pit No.	WS6
Project No.	25-127.01	Client	Aviron	Sample No.	-
Soil Description	Brown silty clayey gravelly SAND (gravel is fmc and sub-rounded to sub-angular)			Depth Top	4.00 m
				Depth Base	- m
				Sample Type	D
				Samples received	30/04/2025
				Schedules received	19/05/2025
Test Method	BS EN ISO 17892 Part 4: 2016			Project started	19/05/2025
				Date tested	27/05/2025

These results only apply to the items tested



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	92		
10	91		
6.3	90		
5	90		
3.35	89		
2	89		
1.18	88		
0.6	85		
0.425	83		
0.3	81		
0.212	63		
0.15	42		
0.063	11		

Sample Proportions	% dry mass
Very coarse	0
Gravel	11
Sand	78
Fines <0.063mm	11

Grading Analysis		
D100	mm	
D60	mm	0.201
D30	mm	0.107
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

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Tel: 01923 711288

Checked and Approved

Initials: **J.P**

Date: 27/05/2025

2519 Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr) MSF-5-R3

Saturation Moisture Content - Summary of Results
Tested in accordance with BS1377 : Part 2 : 1990, clause 3.3 unless annotated otherwise.

Job No.	Project Name	Programme	
37219	Ashcroft House, Shoreham, BN43 6YU	Samples received	30/04/2025
		Schedule received	01/05/2025
Project No.	Client	Project started	01/05/2025
25-127.01-2	Aviron	Testing Started	15/05/2025

Hole No.	Sample				Description	SMC	NMC	Bulk Density	Dry Density	Remarks - Sample size complies with BS1377:1990: Part 2 (Yes/No)
	Ref	Top m	Base m	Type		%	%	Mg/m3	Mg/m3	
BH1	-	10.00	10.45	U	Off white putty CHALK with fmc intact chalk fragments	28	27	1.96	1.55	NO
BH1	-	15.10	-	D	Fm intact CHALK fragments	28	28	1.95	1.53	NO
BH1	-	20.50	20.95	U	Fm intact CHALK fragments	27	26	1.97	1.56	NO
BH2	-	8.00	8.45	U	Off white putty CHALK with fmc intact chalk fragments	25	24	1.99	1.60	NO
BH2	-	12.80	-	D	Fm intact CHALK fragments	28	28	1.96	1.53	NO
BH2	-	19.20	-	D	Fm intact CHALK fragments	26	26	2.00	1.59	NO
BH2	-	26.00	26.45	U	Off white putty CHALK with fmc intact chalk fragments	29	29	1.96	1.52	NO

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

Checked and Approved

Initials **J.P**

Date: **22/05/2025**

These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP1**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

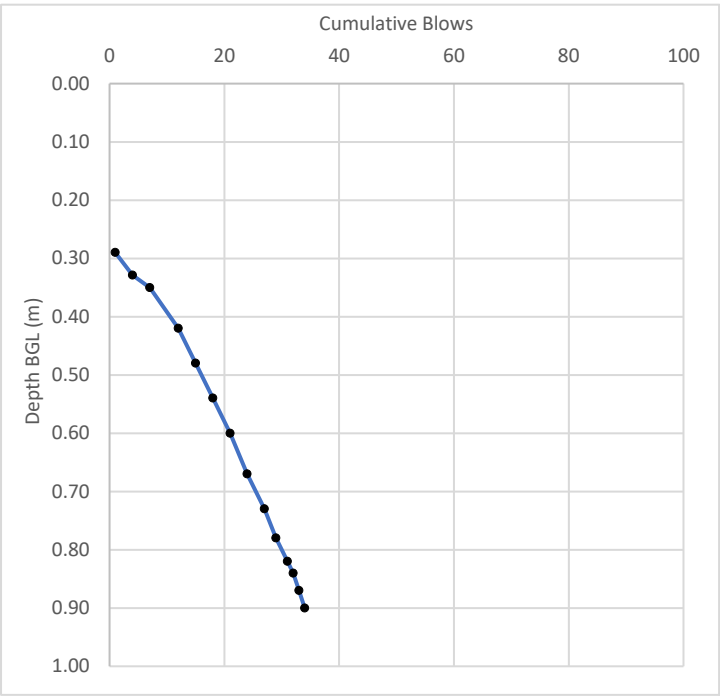
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		300	0.270	-0.270		
1	1	320	0.290	-0.290	20.0	12.7
3	4	359	0.329	-0.329	13.0	20.1
3	7	380	0.350	-0.350	7.0	38.6
5	12	450	0.420	-0.420	14.0	18.6
3	15	510	0.480	-0.480	20.0	12.7
3	18	570	0.540	-0.540	20.0	12.7
3	21	630	0.600	-0.600	20.0	12.7
3	24	700	0.670	-0.670	23.3	10.8
3	27	760	0.730	-0.730	20.0	12.7
2	29	810	0.780	-0.780	25.0	10.1
2	31	850	0.820	-0.820	20.0	12.7
1	32	870	0.840	-0.840	20.0	12.7
1	33	900	0.870	-0.870	30.0	8.3
1	34	930	0.900	-0.900	30.0	8.3

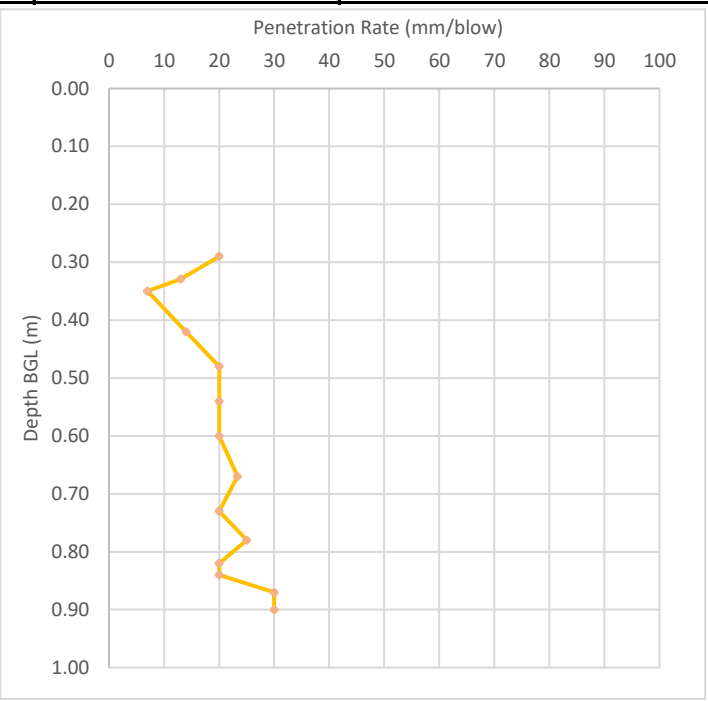
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

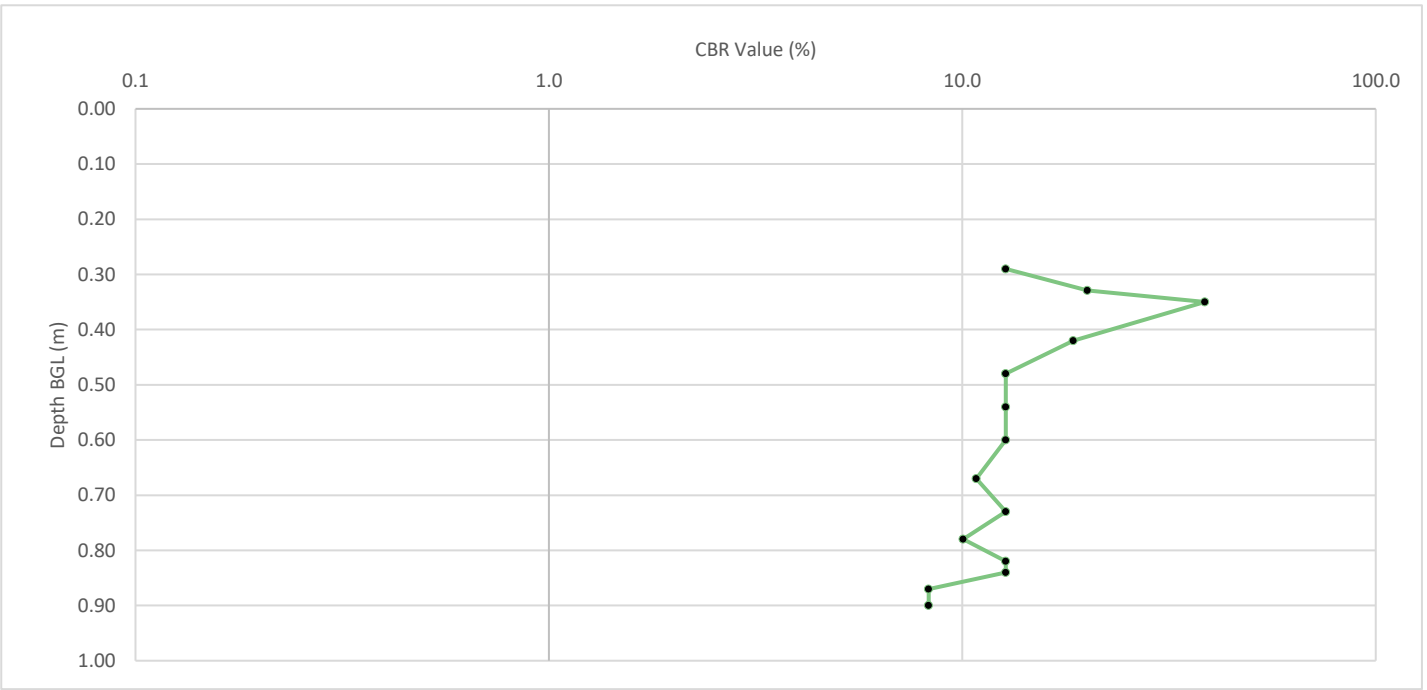
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP1**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP2**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

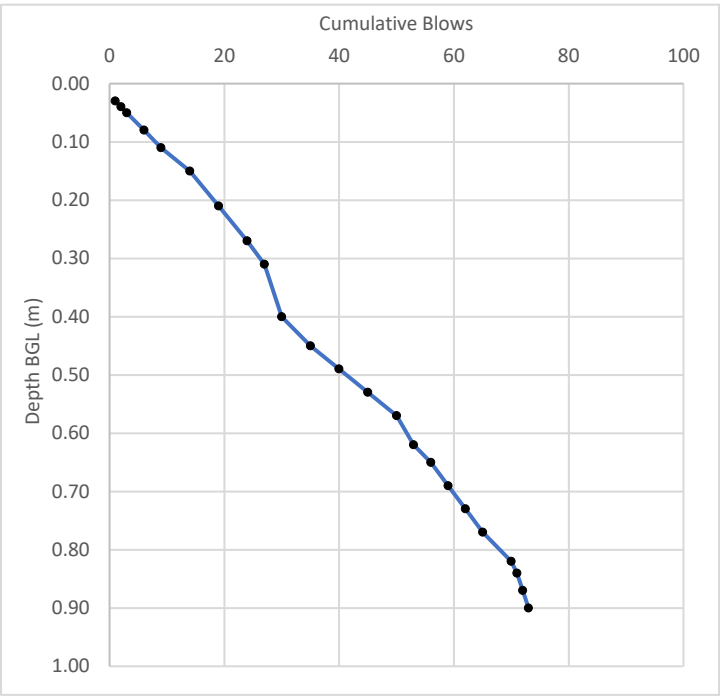
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		50	0.020	-0.020		
1	1	60	0.030	-0.030	10.0	26.5
1	2	70	0.040	-0.040	10.0	26.5
1	3	80	0.050	-0.050	10.0	26.5
3	6	110	0.080	-0.080	10.0	26.5
3	9	140	0.110	-0.110	10.0	26.5
5	14	180	0.150	-0.150	8.0	33.5
5	19	240	0.210	-0.210	12.0	21.8
5	24	300	0.270	-0.270	12.0	21.8
3	27	340	0.310	-0.310	13.3	19.5
3	30	430	0.400	-0.400	30.0	8.3
5	35	480	0.450	-0.450	10.0	26.5
5	40	520	0.490	-0.490	8.0	33.5
5	45	560	0.530	-0.530	8.0	33.5
5	50	600	0.570	-0.570	8.0	33.5
3	53	650	0.620	-0.620	16.7	15.4
3	56	680	0.650	-0.650	10.0	26.5
3	59	720	0.690	-0.690	13.3	19.5
3	62	760	0.730	-0.730	13.3	19.5
3	65	800	0.770	-0.770	13.3	19.5
5	70	850	0.820	-0.820	10.0	26.5
1	71	870	0.840	-0.840	20.0	12.7
1	72	900	0.870	-0.870	30.0	8.3
1	73	930	0.900	-0.900	30.0	8.3

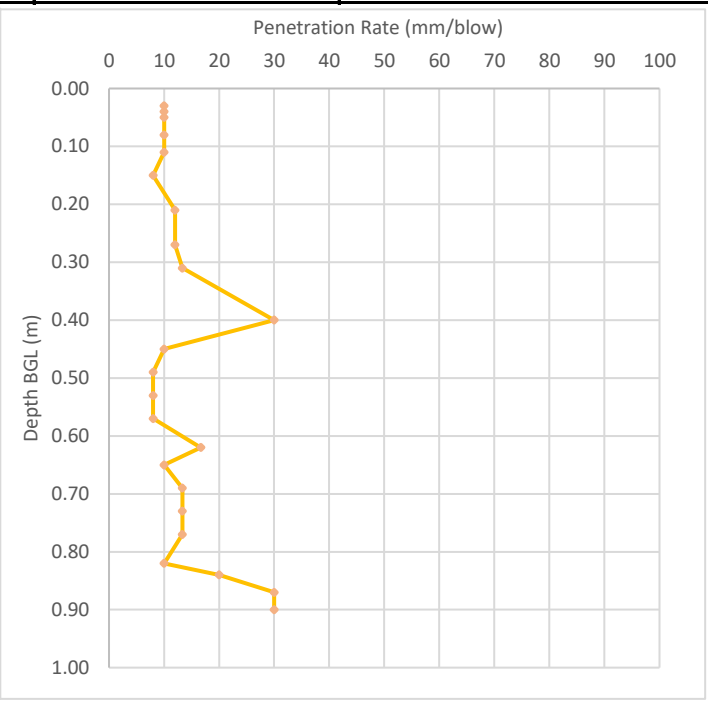
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

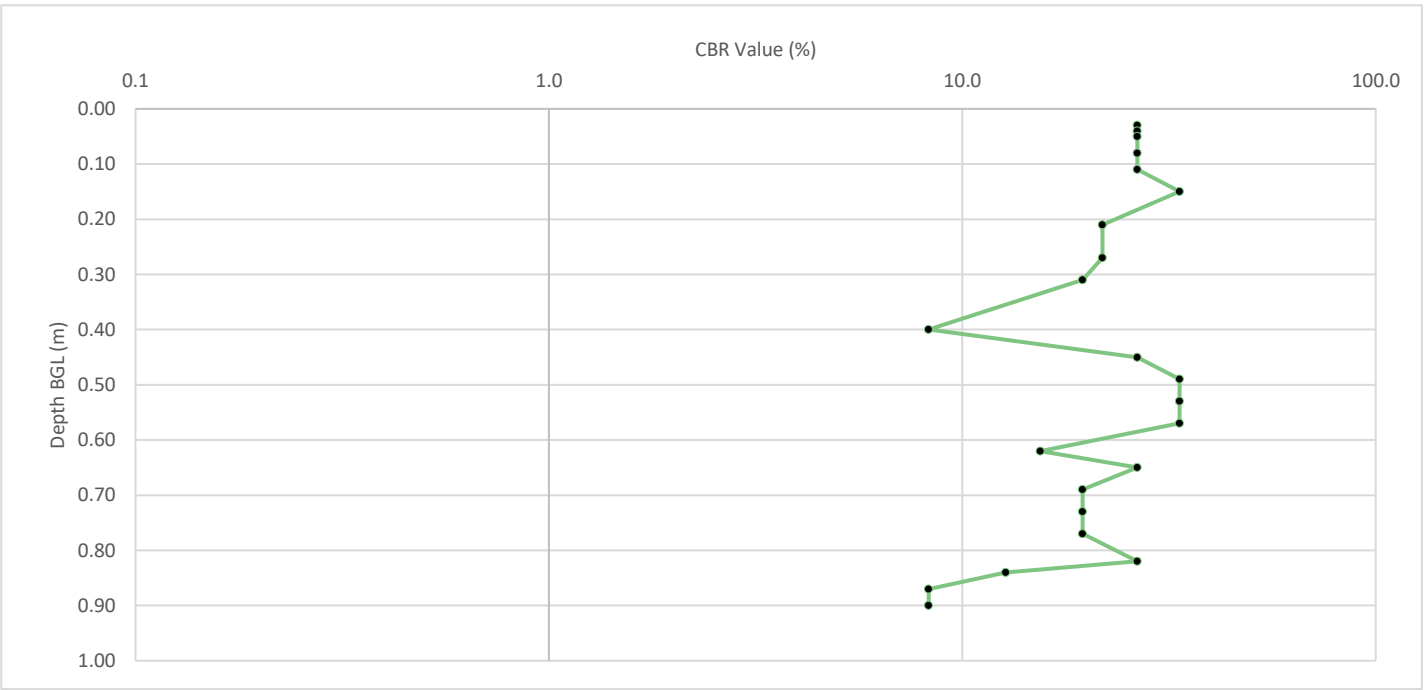
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP2**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP3**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

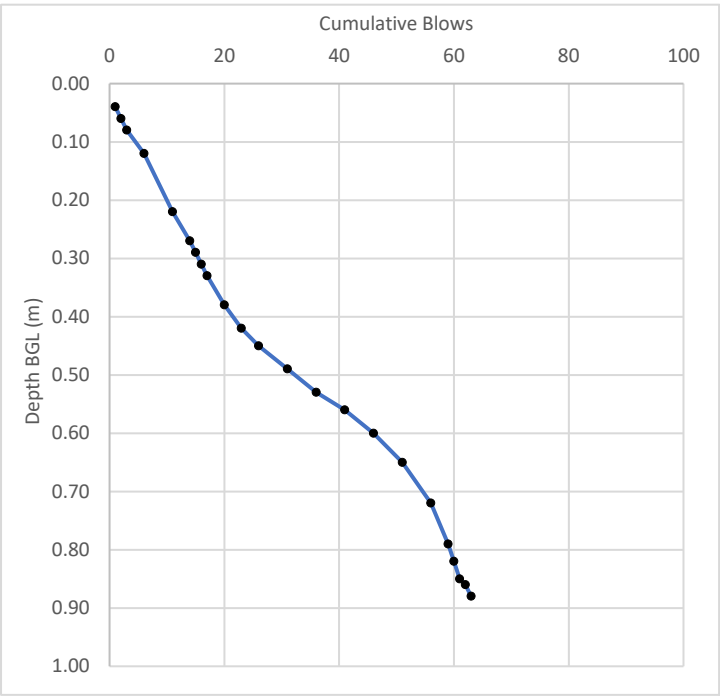
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		40	0.010	-0.010		
1	1	70	0.040	-0.040	30.0	8.3
1	2	90	0.060	-0.060	20.0	12.7
1	3	110	0.080	-0.080	20.0	12.7
3	6	150	0.120	-0.120	13.3	19.5
5	11	250	0.220	-0.220	20.0	12.7
3	14	300	0.270	-0.270	16.7	15.4
1	15	320	0.290	-0.290	20.0	12.7
1	16	340	0.310	-0.310	20.0	12.7
1	17	360	0.330	-0.330	20.0	12.7
3	20	410	0.380	-0.380	16.7	15.4
3	23	450	0.420	-0.420	13.3	19.5
3	26	480	0.450	-0.450	10.0	26.5
5	31	520	0.490	-0.490	8.0	33.5
5	36	560	0.530	-0.530	8.0	33.5
5	41	590	0.560	-0.560	6.0	45.4
5	46	630	0.600	-0.600	8.0	33.5
5	51	680	0.650	-0.650	10.0	26.5
5	56	750	0.720	-0.720	14.0	18.6
3	59	820	0.790	-0.790	23.3	10.8
1	60	850	0.820	-0.820	30.0	8.3
1	61	880	0.850	-0.850	30.0	8.3
1	62	890	0.860	-0.860	10.0	26.5
1	63	910	0.880	-0.880	20.0	12.7

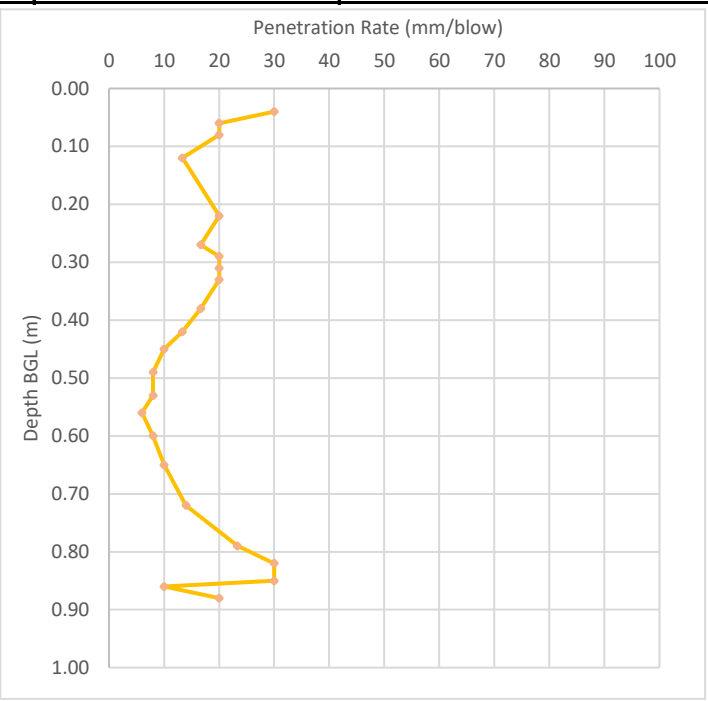
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

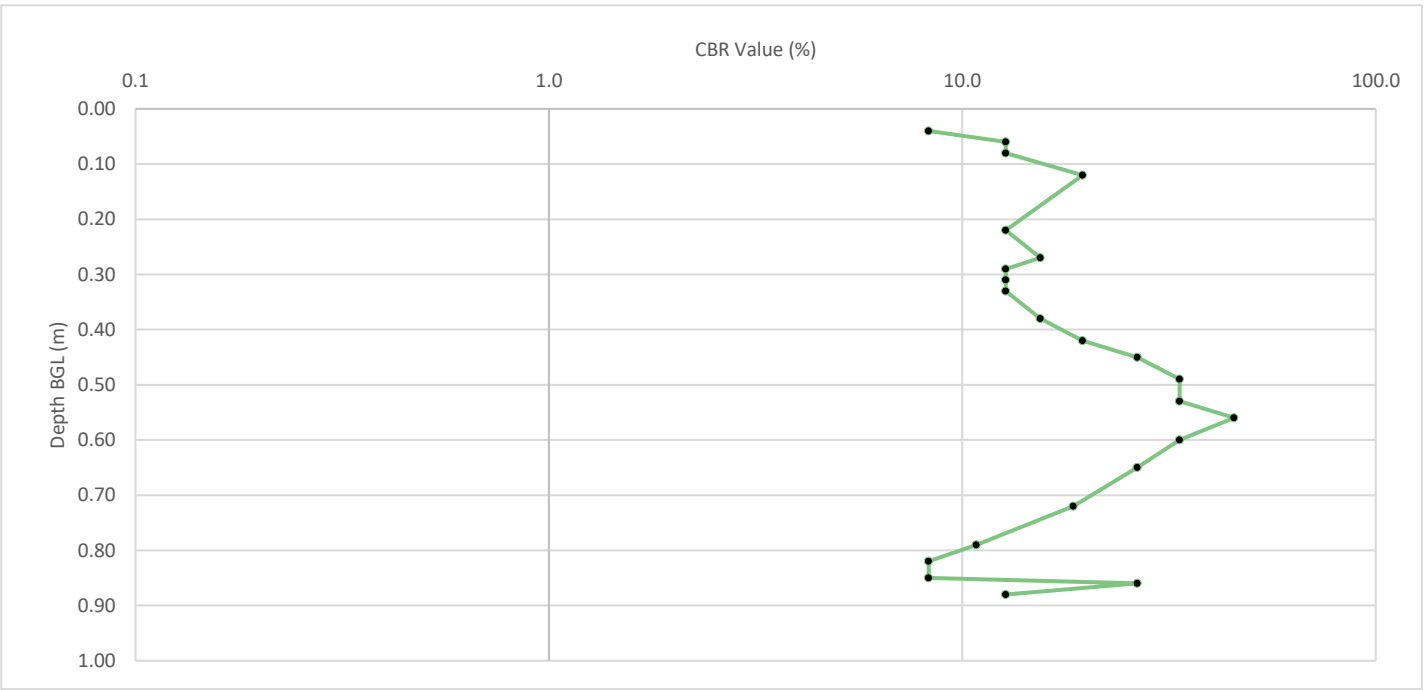
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP3**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP4**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

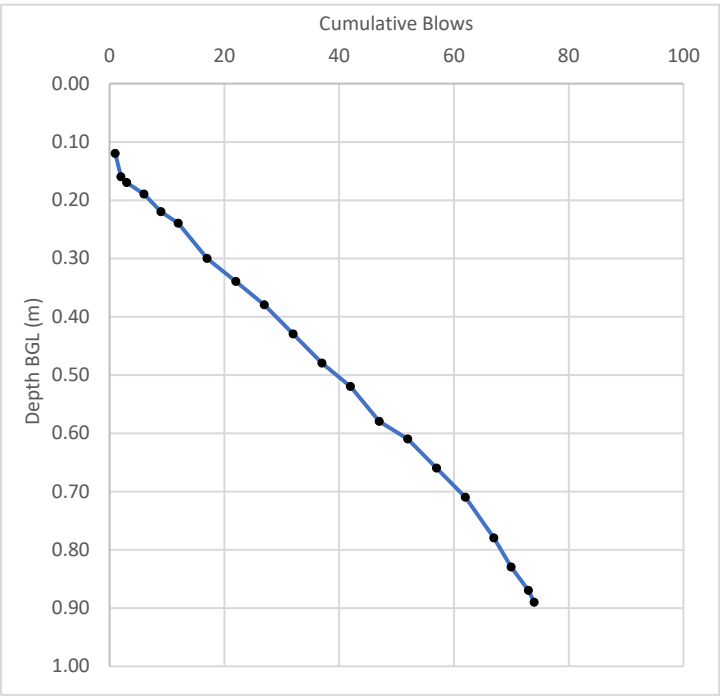
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		90	0.060	-0.060		
1	1	150	0.120	-0.120	60.0	4.0
1	2	190	0.160	-0.160	40.0	6.1
1	3	200	0.170	-0.170	10.0	26.5
3	6	220	0.190	-0.190	6.7	40.7
3	9	250	0.220	-0.220	10.0	26.5
3	12	270	0.240	-0.240	6.7	40.7
5	17	330	0.300	-0.300	12.0	21.8
5	22	370	0.340	-0.340	8.0	33.5
5	27	410	0.380	-0.380	8.0	33.5
5	32	460	0.430	-0.430	10.0	26.5
5	37	510	0.480	-0.480	10.0	26.5
5	42	550	0.520	-0.520	8.0	33.5
5	47	610	0.580	-0.580	12.0	21.8
5	52	640	0.610	-0.610	6.0	45.4
5	57	690	0.660	-0.660	10.0	26.5
5	62	740	0.710	-0.710	10.0	26.5
5	67	810	0.780	-0.780	14.0	18.6
3	70	860	0.830	-0.830	16.7	15.4
3	73	900	0.870	-0.870	13.3	19.5
1	74	920	0.890	-0.890	20.0	12.7

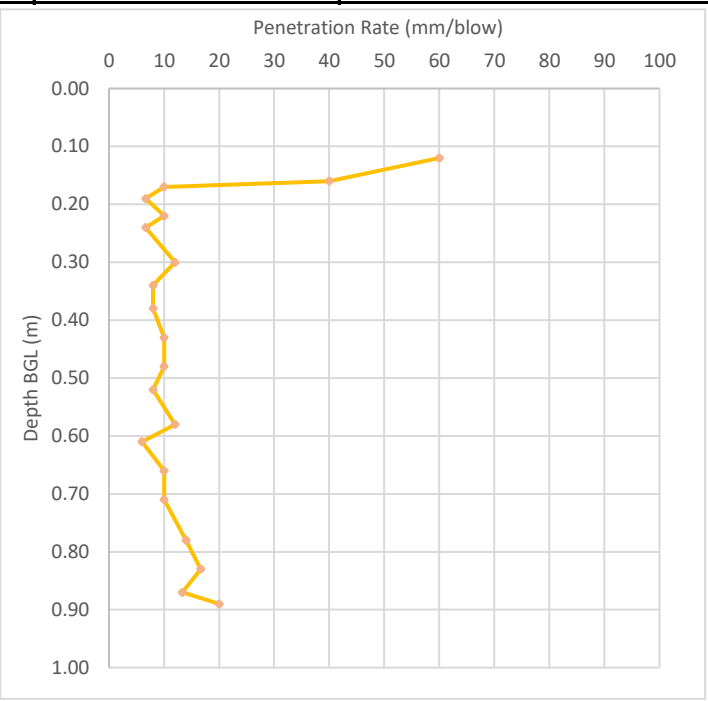
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

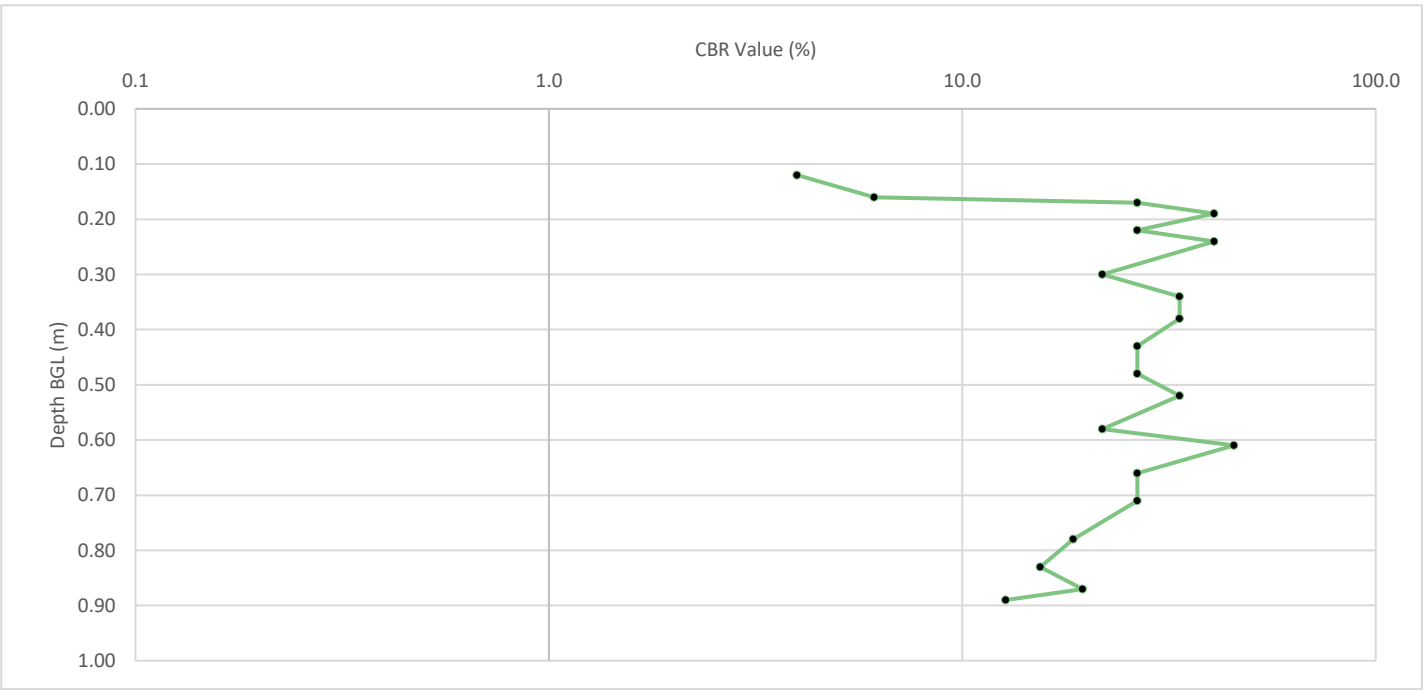
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP4**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP5**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

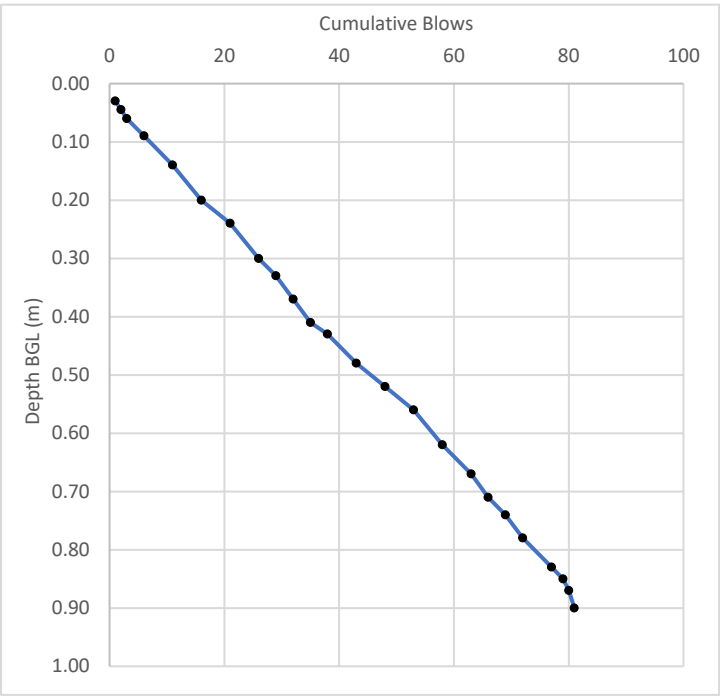
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		50	0.020	-0.020		
1	1	60	0.030	-0.030	10.0	26.5
1	2	75	0.045	-0.045	15.0	17.3
1	3	90	0.060	-0.060	15.0	17.3
3	6	120	0.090	-0.090	10.0	26.5
5	11	170	0.140	-0.140	10.0	26.5
5	16	230	0.200	-0.200	12.0	21.8
5	21	270	0.240	-0.240	8.0	33.5
5	26	330	0.300	-0.300	12.0	21.8
3	29	360	0.330	-0.330	10.0	26.5
3	32	400	0.370	-0.370	13.3	19.5
3	35	440	0.410	-0.410	13.3	19.5
3	38	460	0.430	-0.430	6.7	40.7
5	43	510	0.480	-0.480	10.0	26.5
5	48	550	0.520	-0.520	8.0	33.5
5	53	590	0.560	-0.560	8.0	33.5
5	58	650	0.620	-0.620	12.0	21.8
5	63	700	0.670	-0.670	10.0	26.5
3	66	740	0.710	-0.710	13.3	19.5
3	69	770	0.740	-0.740	10.0	26.5
3	72	810	0.780	-0.780	13.3	19.5
5	77	860	0.830	-0.830	10.0	26.5
2	79	880	0.850	-0.850	10.0	26.5
1	80	900	0.870	-0.870	20.0	12.7
1	81	930	0.900	-0.900	30.0	8.3

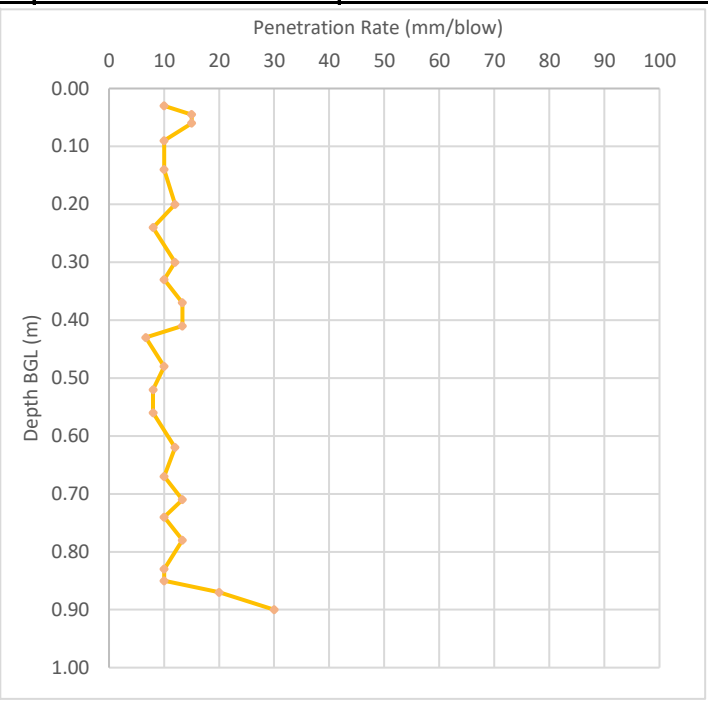
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

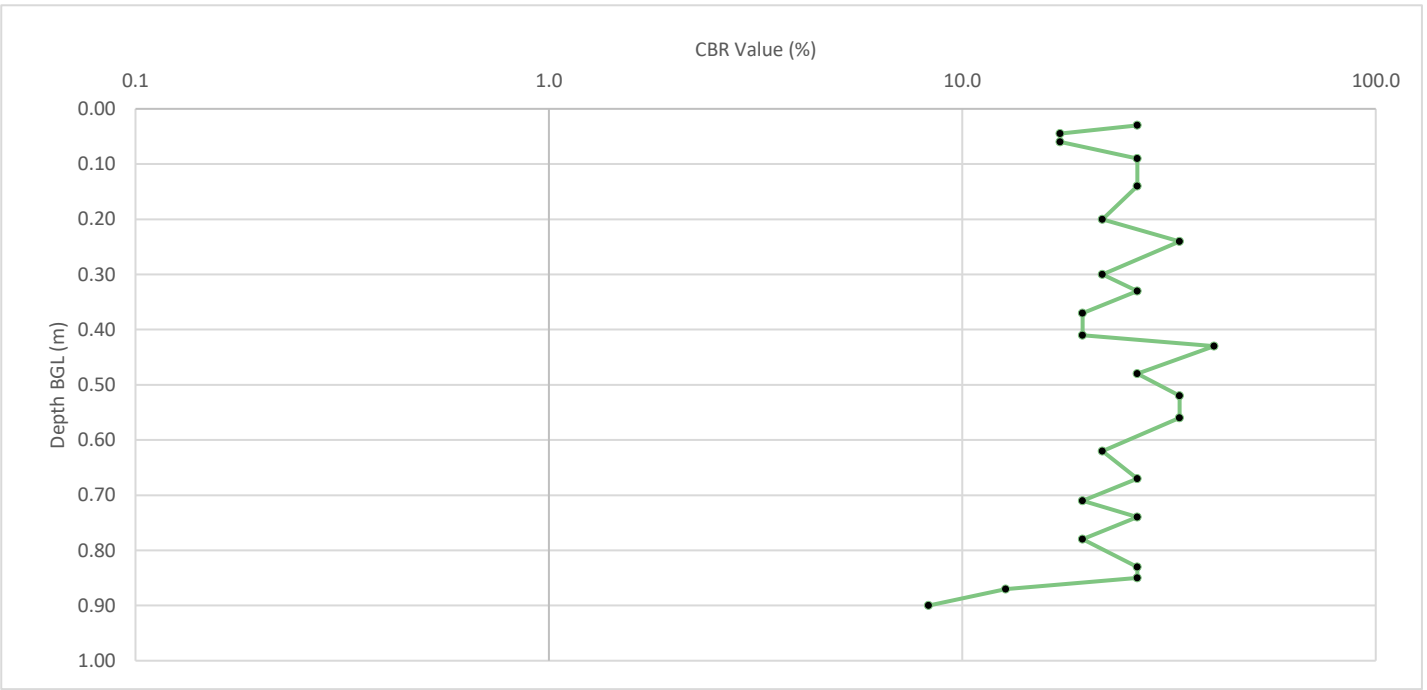
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP5**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP6**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):

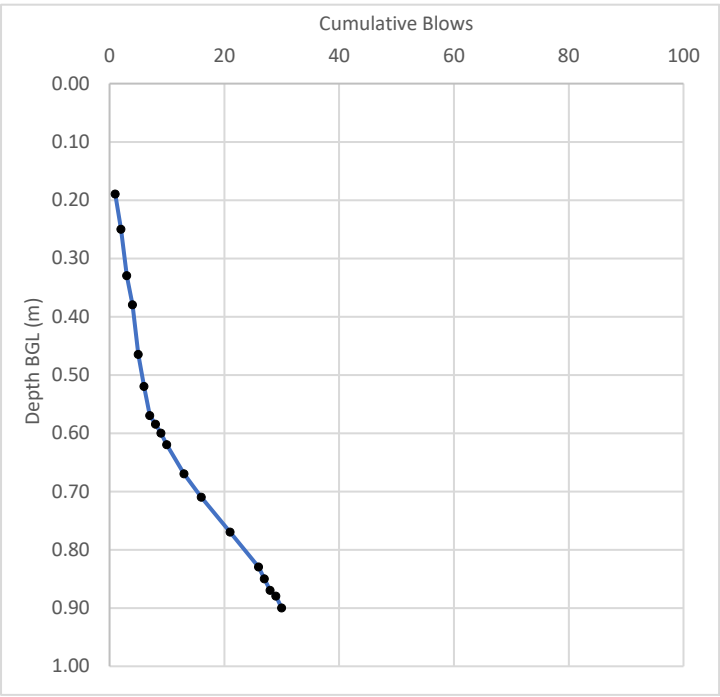
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		90	0.060	-0.060		
1	1	220	0.190	-0.190	130.0	1.8
1	2	280	0.250	-0.250	60.0	4.0
1	3	360	0.330	-0.330	80.0	2.9
1	4	410	0.380	-0.380	50.0	4.8
1	5	495	0.465	-0.465	85.0	2.8
1	6	550	0.520	-0.520	55.0	4.4
1	7	600	0.570	-0.570	50.0	4.8
1	8	615	0.585	-0.585	15.0	17.3
1	9	630	0.600	-0.600	15.0	17.3
1	10	650	0.620	-0.620	20.0	12.7
3	13	700	0.670	-0.670	16.7	15.4
3	16	740	0.710	-0.710	13.3	19.5
5	21	800	0.770	-0.770	12.0	21.8
5	26	860	0.830	-0.830	12.0	21.8
1	27	880	0.850	-0.850	20.0	12.7
1	28	900	0.870	-0.870	20.0	12.7
1	29	910	0.880	-0.880	10.0	26.5
1	30	930	0.900	-0.900	20.0	12.7

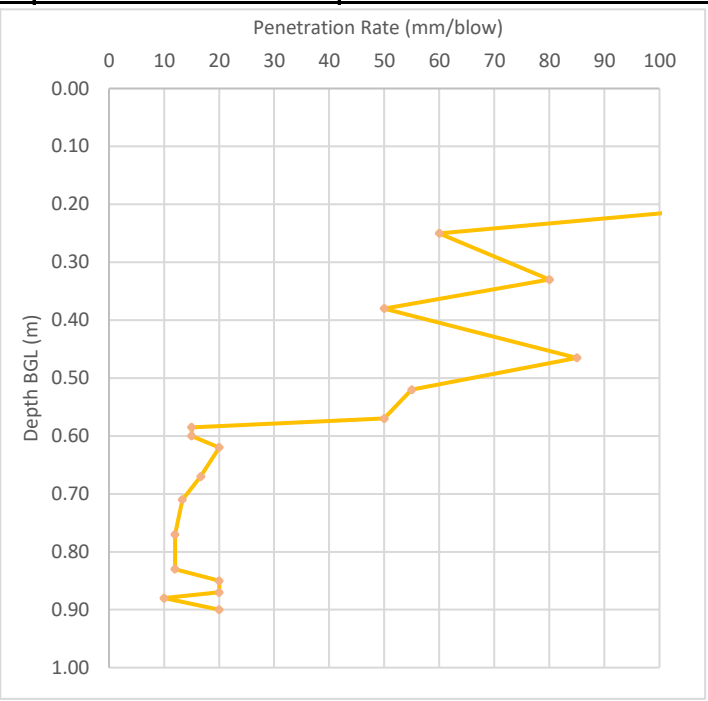
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

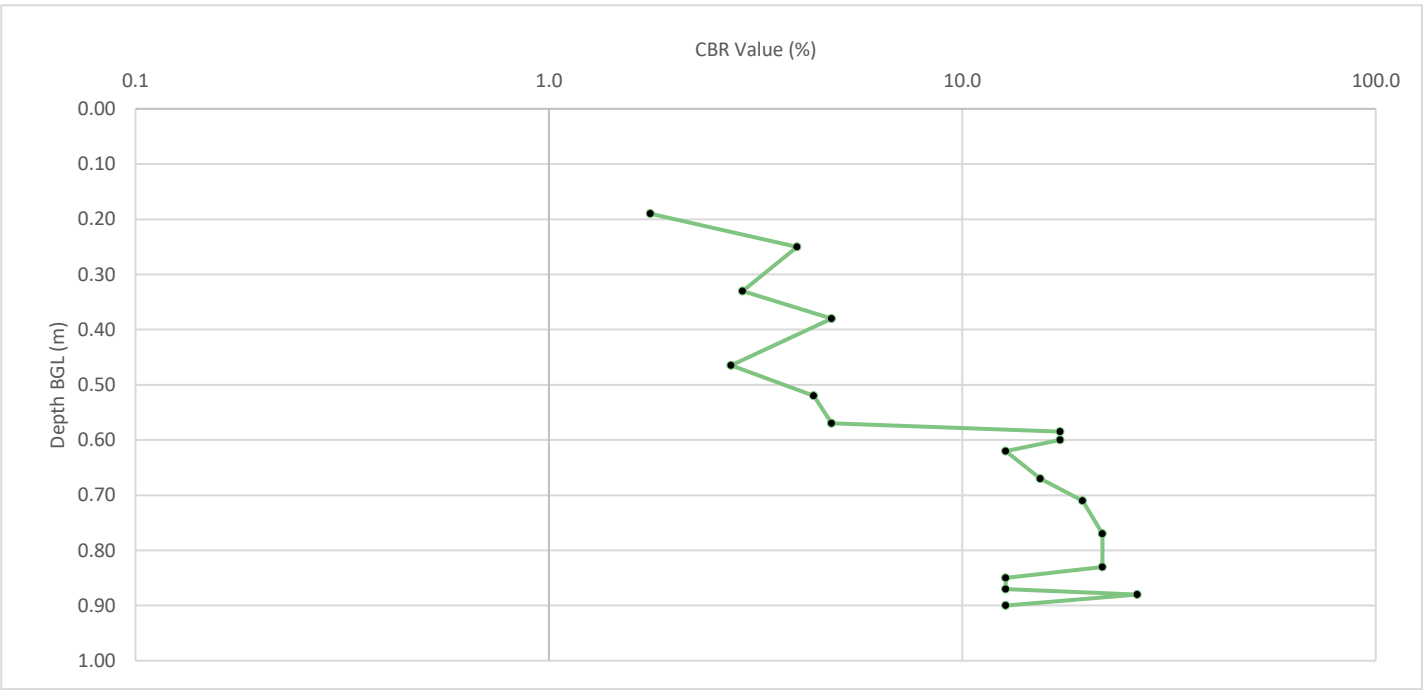
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU**	Project No: **25-127.01**	DCP Location: **DCP6**
Client:	**Bugler Developments Limited**	Operator: **OC**	Date: **25/05/2024**
Surface Conditions & Observations: **Dry**		Zero Error (mm): **30**	Approx AOD (m):







Appendix

VI Soil Infiltration Results

Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 24/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.9m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **0.83m**

Actual Storage Volume: **1.90 m^3**
Effective Depth: **1.17 m**

Time (mins)	Depth BGL (m)
0	0.830
1	0.860
2	0.870
3	0.880
4	0.890
5	0.900
10	0.940
15	0.960
20	0.990
30	1.040
40	1.090
50	1.120
60	1.140
90	1.180
120	1.240
180	1.360

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

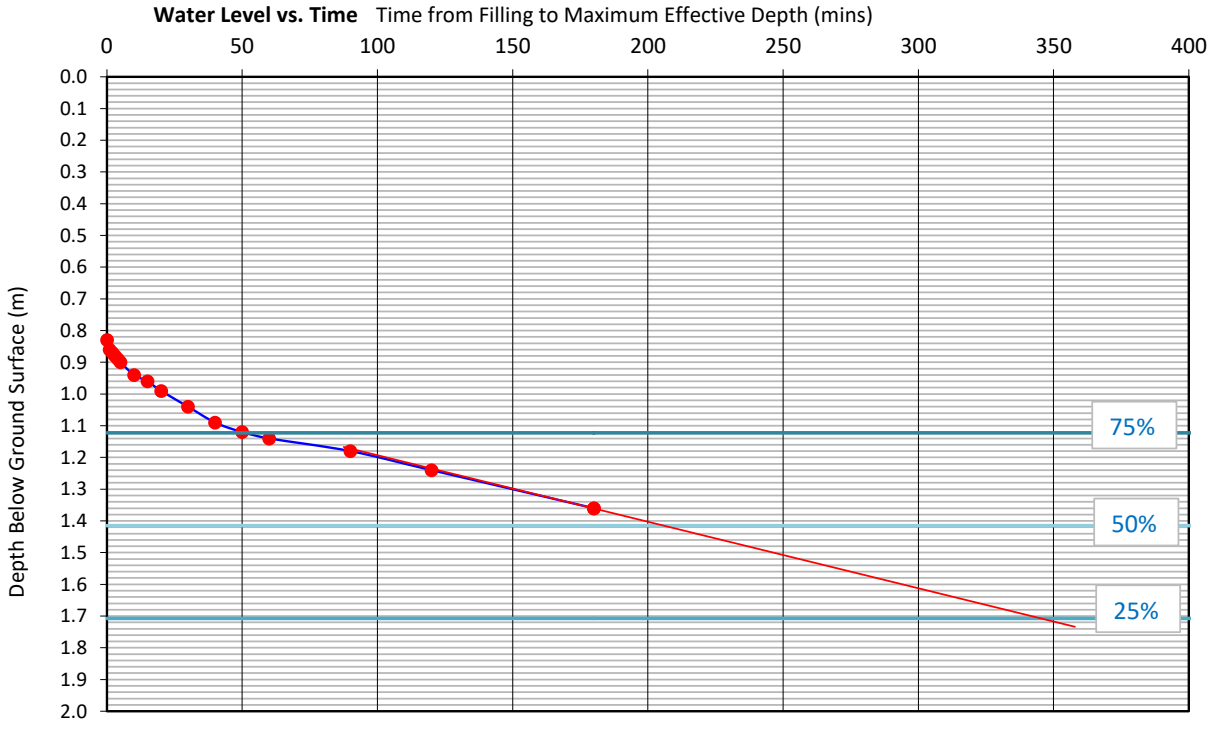
Effective Storage Volume, V: **1.9m x 0.5m x 1.17m**
V: **1.1115 m^3**

$V_{p75\text{-}25}$: **0.556 m^3**

Effective Internal Surface Area, a_{p50}: **2.223m2 + 0.585m2 + 0.95m2**
a_{p50}: **3.758 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **340 - 49 mins**
$t_{p75\text{-}25}$: **291 mins**
$t_{p75\text{-}25}$: **17460 secs**

Soil infiltration rate, f : 0.55575/(3.758 x 17460)
f : 8.47E-06 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.9m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **0.79m**

Actual Storage Volume: **1.90 m^3**
Effective Depth: **1.21 m**

Time (mins)	Depth BGL (m)
0	0.790
1	0.800
2	0.810
3	0.810
4	0.810
5	0.820
10	0.860
20	0.870
30	0.880
40	0.900
50	0.930
60	0.950
80	0.990
150	1.100
180	1.150
240	1.280

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Effective Storage Volume, *V*: **1.9m x 0.5m x 1.21m**
V: **1.1495 m^3**

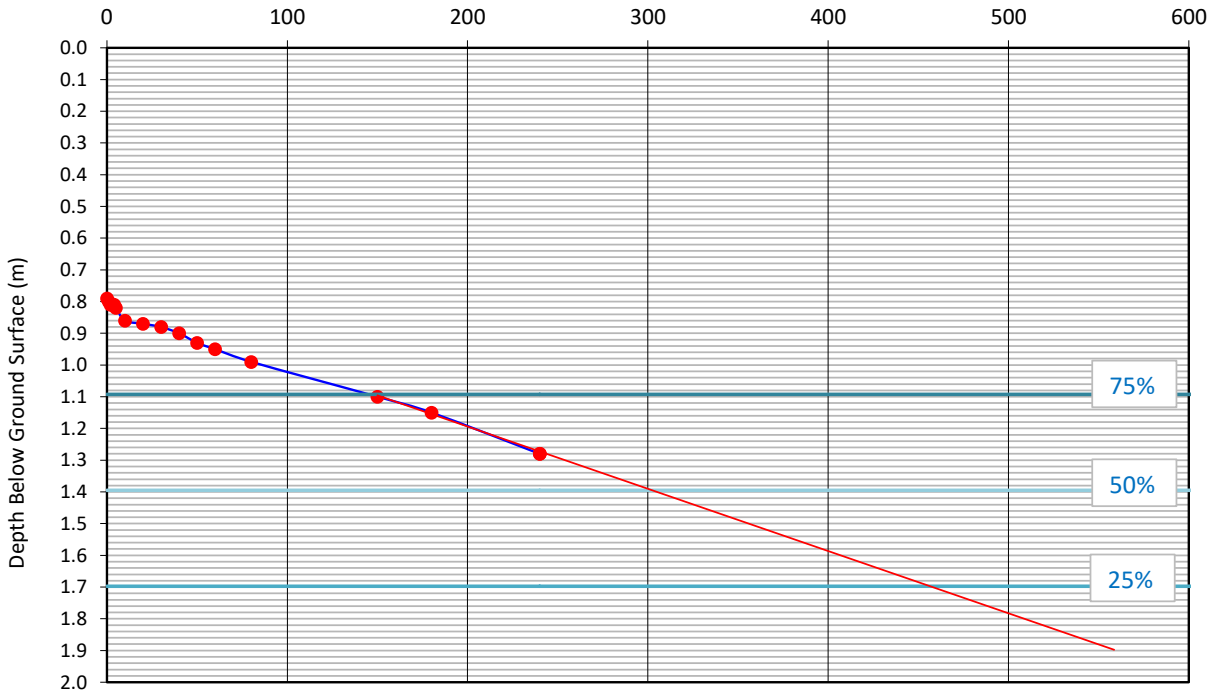
$V_{p75\text{-}25}$: **0.575 m^3**

Effective Internal Surface Area, a_{p50}: **2.299m2 + 0.605m2 + 0.95m2**
a_{p50}: **3.854 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **450 - 148 mins**
$t_{p75\text{-}25}$: **302 mins**
$t_{p75\text{-}25}$: **18120 secs**

Soil infiltration rate, *f*: 0.57475/(3.854 x 18120)
***f*: 8.23E-06 ms^{-1}**

Water Level vs. Time Time from Filling to Maximum Effective Depth (mins)



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.9m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **0.8m**

Actual Storage Volume: **1.90 m^3**
Effective Depth: **1.20 m**

Time (mins)	Depth BGL (m)
0	0.800
1	0.810
2	0.820
3	0.830
4	0.840
5	0.850
10	0.900
20	0.950
30	1.030
40	1.050
50	1.080
60	1.120
90	1.170
120	1.210
140	1.240

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Effective Storage Volume, V: **1.9m x 0.5m x 1.2m**
V: **1.14 m^3**

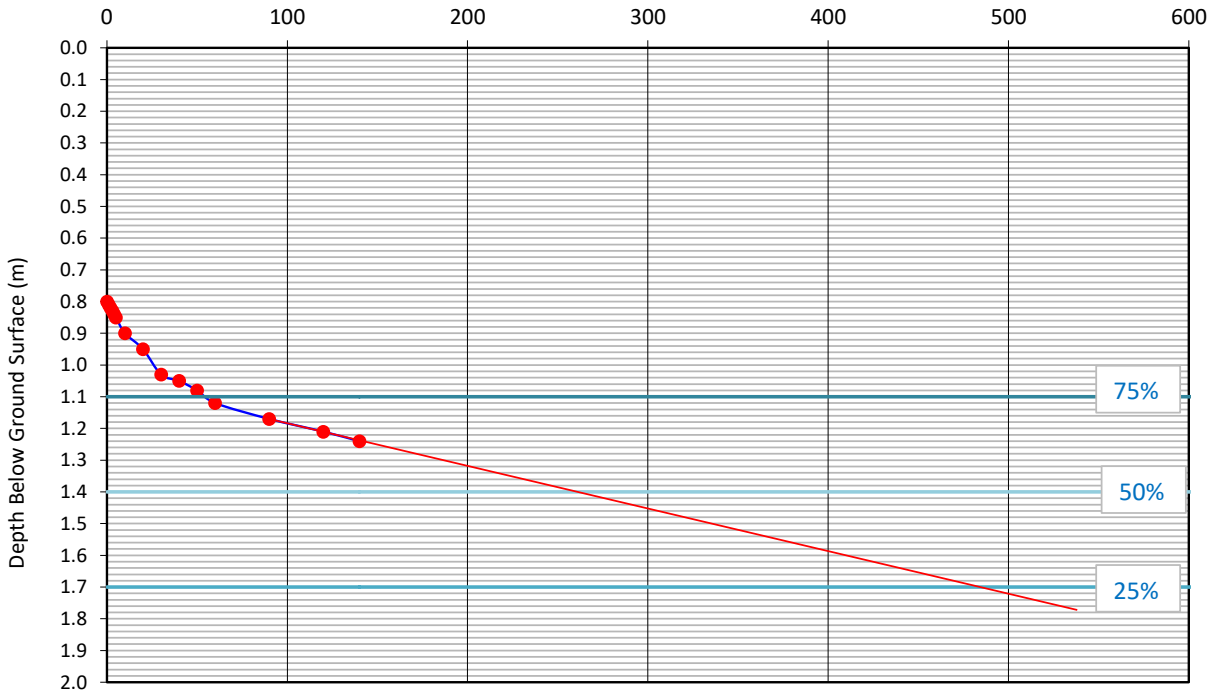
$V_{p75\text{-}25}$: **0.570 m^3**

Effective Internal Surface Area, a_{p50}: **2.28m2 + 0.6m2 + 0.95m2**
a_{p50}: **3.830 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **480 - 55 mins**
$t_{p75\text{-}25}$: **425 mins**
$t_{p75\text{-}25}$: **25500 secs**

Soil infiltration rate, f : 0.57/(3.83 x 25500)
f : 5.84E-06 ms^{-1}

Water Level vs. Time Time from Filling to Maximum Effective Depth (mins)



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 24/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.5m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **0.81m**

Actual Storage Volume: **1.50 m^3**
Effective Depth: **1.19 m**

Time (mins)	Depth BGL (m)
0	0.810
1	0.970
2	1.080
3	1.100
4	1.140
5	1.160
10	1.260
20	1.340
30	1.400
40	1.450
50	1.530
60	1.550
80	1.590
120	1.680
180	1.770

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

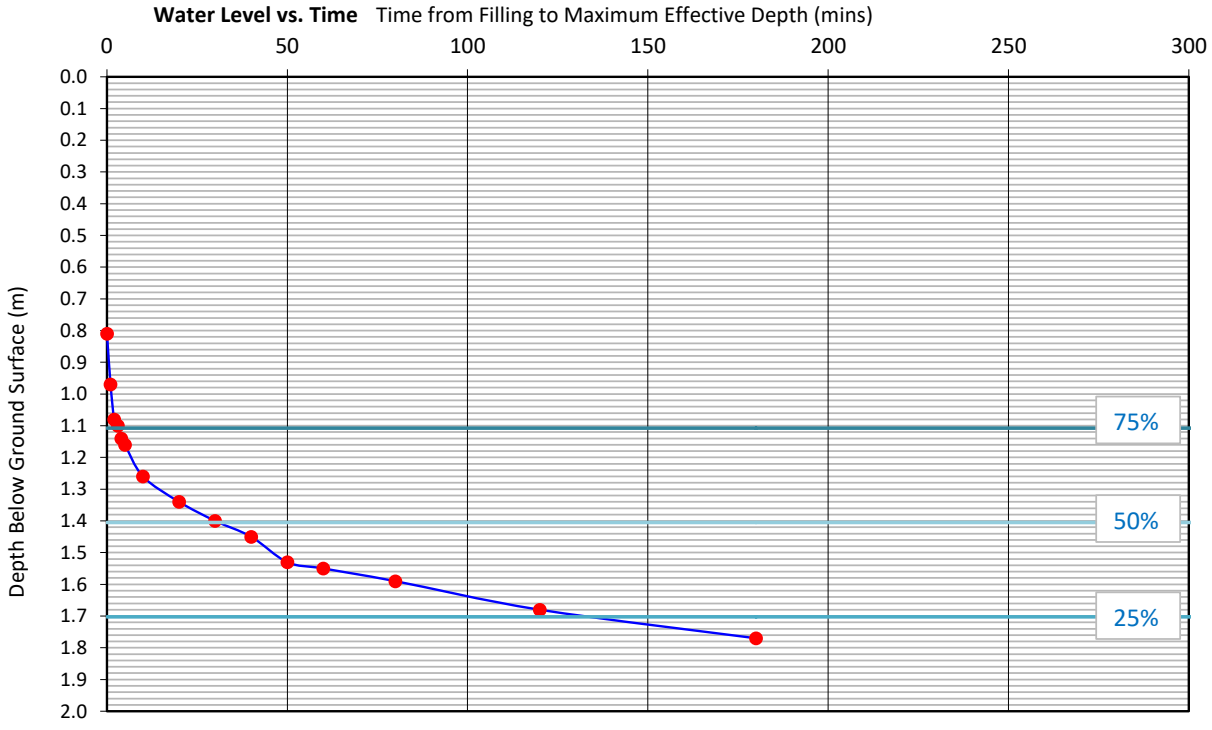
Effective Storage Volume, V: **1.5m x 0.5m x 1.19m**
V: **0.8925 m^3**

$V_{p75\text{-}25}$: **0.446 m^3**

Effective Internal Surface Area, a_{p50}: **1.785m2 + 0.595m2 + 0.75m2**
a_{p50}: **3.130 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **140 - 2 mins**
$t_{p75\text{-}25}$: **138 mins**
$t_{p75\text{-}25}$: **8280 secs**

Soil infiltration rate, f : 0.44625/(3.13 x 8280)
f : 1.72E-05 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.5m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **1.26m**

Actual Storage Volume: **1.50 m^3**
Effective Depth: **0.74 m**

Time (mins)	Depth BGL (m)
0	1.260
1	1.260
2	1.270
3	1.280
4	1.290
5	1.300
10	1.360
20	1.400
30	1.440
40	1.480
50	1.510
60	1.540
90	1.600
120	1.670
180	1.780

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

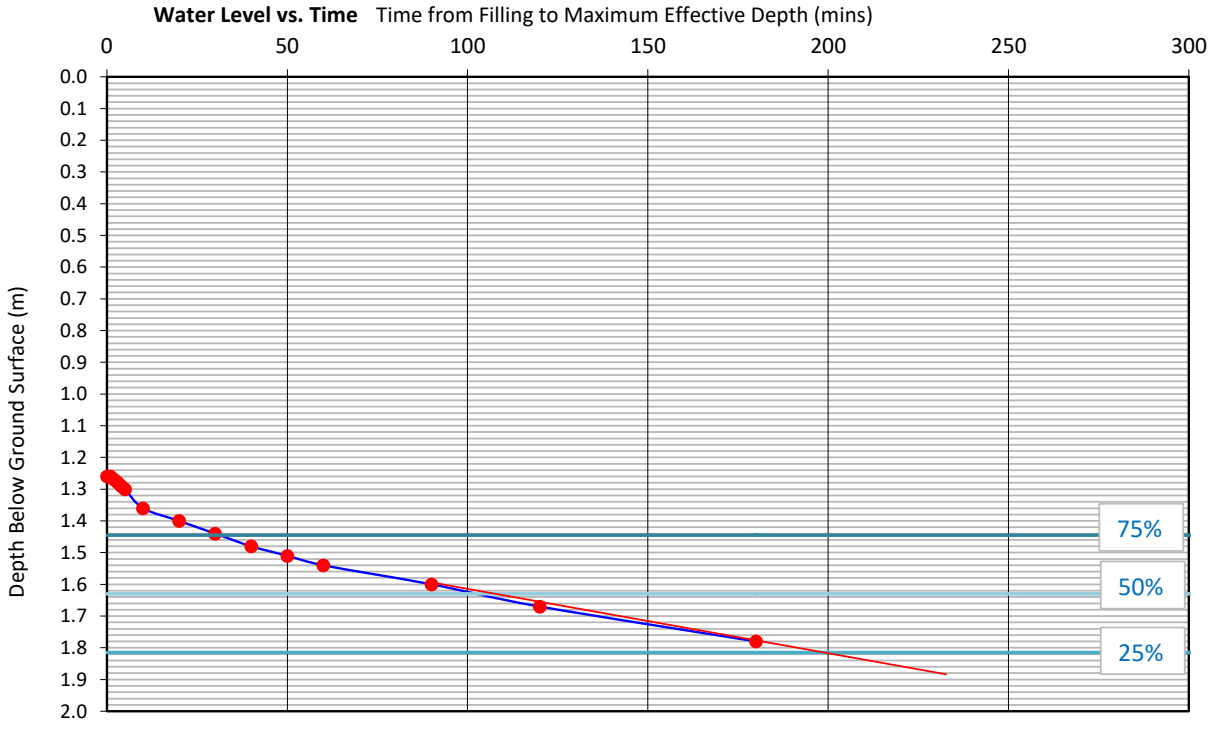
Effective Storage Volume, V: **1.5m x 0.5m x 0.74m**
V: **0.555 m^3**

$V_{p75\text{-}25}$: **0.278 m^3**

Effective Internal Surface Area, a_{p50}: **1.11m2 + 0.37m2 + 0.75m2**
a_{p50}: **2.230 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **200 - 35 mins**
$t_{p75\text{-}25}$: **165 mins**
$t_{p75\text{-}25}$: **9900 secs**

Soil infiltration rate, f : 0.2775/(2.23 x 9900)
f : 1.26E-05 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **1.5m(l) x 0.5m(w) x 2m(d)**
Start Water Level: **1.07m**

Actual Storage Volume: **1.50 m^3**
Effective Depth: **0.93 m**

Time (mins)	Depth BGL (m)
0	1.070
1	1.180
2	1.210
3	1.230
4	1.250
5	1.280
10	1.350
20	1.410
35	1.520
50	1.580
70	1.600
90	1.620
110	1.640
135	1.660
180	1.700

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

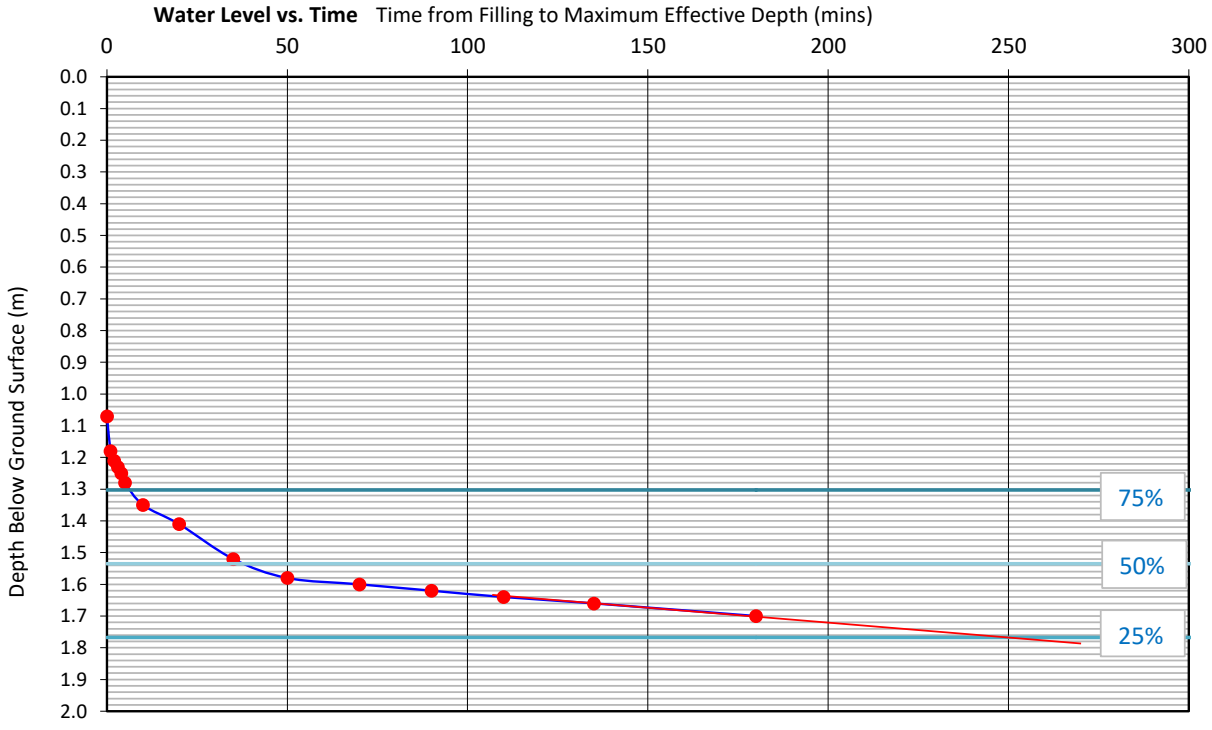
Effective Storage Volume, V: **1.5m x 0.5m x 0.93m**
V: **0.6975 m^3**

$V_{p75\text{-}25}$: **0.349 m^3**

Effective Internal Surface Area, a_{p50}: **1.395m2 + 0.465m2 + 0.75m2**
a_{p50}: **2.610 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **200 - 35 mins**
$t_{p75\text{-}25}$: **165 mins**
$t_{p75\text{-}25}$: **9900 secs**

Soil infiltration rate, f : 0.34875/(2.61 x 9900)
f : 1.35E-05 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1

Date: 24/04/2025

Readings Recorded By: OC

Pit Dimensions: **2.05m(l) x 0.5m(w) x 2.5m(d)**

Start Water Level: **0.8m**

Actual Storage Volume: **2.56 m^3**

Effective Depth: **1.70 m**

Time (mins)	Depth BGL (m)
0	0.800
1	0.950
2	1.140
3	1.250
4	1.400
5	1.580
10	1.890
20	2.400
22	2.500

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

Effective Storage Volume, V: **2.05m x 0.5m x 1.7m**

V: **1.7425 m^3**

$V_{p75\text{-}25}$: **0.871 m^3**

Effective Internal Surface Area, a_{p50}: **3.485m2 + 0.85m2 + 1.025m2**

a_{p50}: **5.360 m^2**

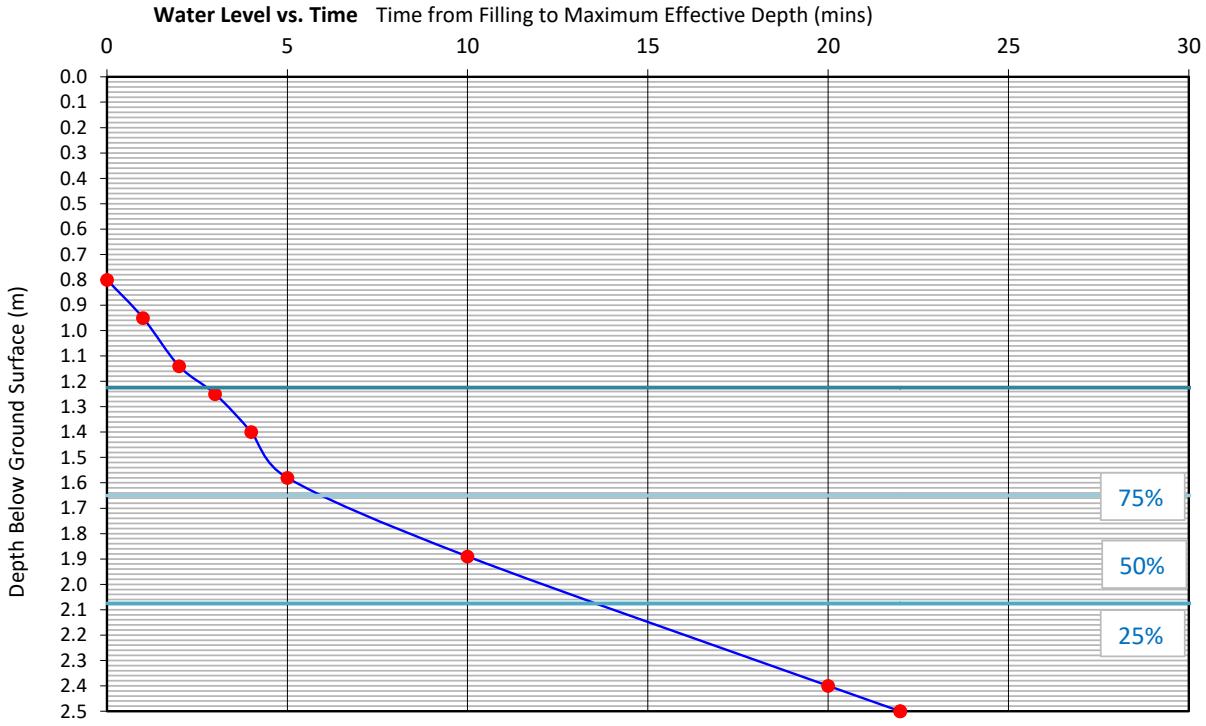
Time of water level fall, $t_{p75\text{-}25}$: **14 - 2.5 mins**

$t_{p75\text{-}25}$: **11.5 mins**

$t_{p75\text{-}25}$: **690 secs**

Soil infiltration rate, f : 0.87125/(5.36 x 690)

f : 2.36E-04 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **2.05m(l) x 0.5m(w) x 2.5m(d)**
Start Water Level: **0.8m**

Actual Storage Volume: **2.56 m^3**
Effective Depth: **1.70 m**

Time (mins)	Depth BGL (m)
0	0.800
1	0.860
2	0.940
3	1.000
4	1.050
5	1.130
10	1.410
20	1.670
30	2.000
40	2.270
50	2.500

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

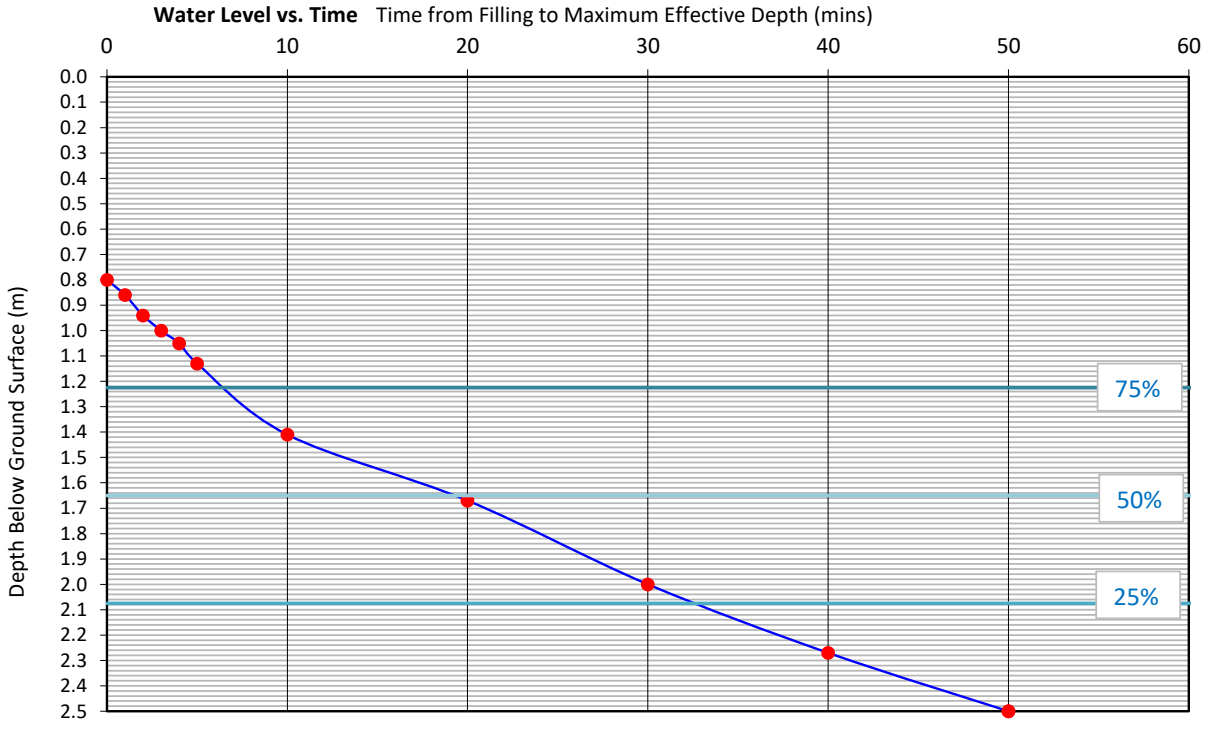
Effective Storage Volume, V: **2.05m x 0.5m x 1.7m**
V: **1.7425 m^3**

$V_{p75\text{-}25}$: **0.871 m^3**

Effective Internal Surface Area, a_{p50}: **3.485m2 + 0.85m2 + 1.025m2**
a_{p50}: **5.360 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **33 - 7 mins**
$t_{p75\text{-}25}$: **26 mins**
$t_{p75\text{-}25}$: **1560 secs**

Soil infiltration rate, f : 0.87125/(5.36 x 1560)
f : 1.04E-04 ms^{-1}



Soil Infiltration Test

25-127.01: Ashcroft House, 100 Kingston Lane, Shoreham, BN43 6YU

Test Pit SP1-1
Date: 25/04/2025
Readings Recorded By: OC

Pit Dimensions: **2.05m(l) x 0.5m(w) x 2.5m(d)**
Start Water Level: **0.84m**

Actual Storage Volume: **2.56 m^3**
Effective Depth: **1.66 m**

Time (mins)	Depth BGL (m)
0	0.840
1	0.880
2	0.930
3	0.970
4	1.000
5	1.050
10	1.250
20	1.530
30	1.970
40	2.250
50	2.410
55	2.500

$$\text{Soil infiltration rate, } f = \frac{V_{p75\text{-}25}}{a_{p50} \times t_{p75\text{-}25}}$$

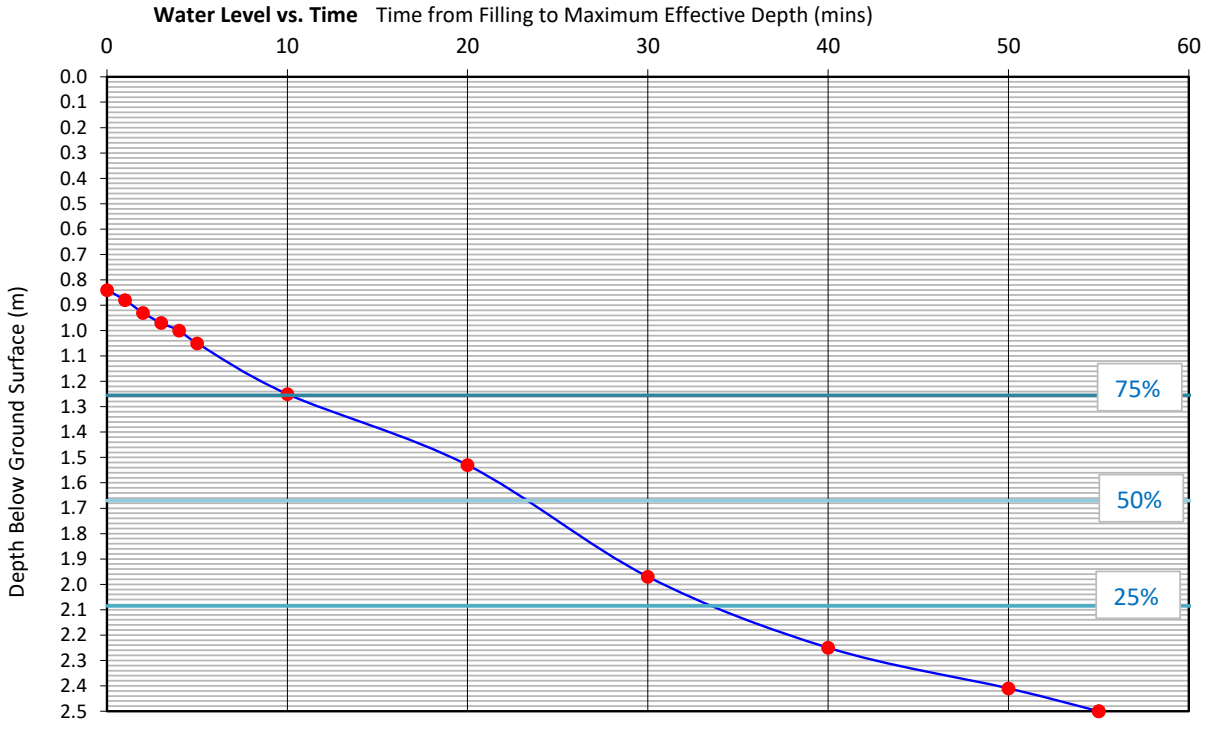
Effective Storage Volume, V: **2.05m x 0.5m x 1.66m**
V: **1.7015 m^3**

$V_{p75\text{-}25}$: **0.851 m^3**

Effective Internal Surface Area, a_{p50}: **3.403m2 + 0.83m2 + 1.025m2**
a_{p50}: **5.258 m^2**

Time of water level fall, $t_{p75\text{-}25}$: **33 - 10 mins**
$t_{p75\text{-}25}$: **23 mins**
$t_{p75\text{-}25}$: **1380 secs**

Soil infiltration rate, f : 0.85075/(5.258 x 1380)
f : 1.17E-04 ms^{-1}



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