

Desk Study and Phase 1 Ground Investigation Report

**Arborfield Development Site
Parcel O2
Arborfield Garrison
Wokingham
Berkshire**

Client

Crest Nicholson Chiltern

J2210

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EXECUTIVE SUMMARY

This executive summary contains an overview of the key findings and conclusions. No reliance should be placed on any part of the executive summary until the whole of the report has been read. Other sections of the report may contain information that puts into context the findings that are summarised in the executive summary.

BRIEF

This report describes the findings of a desk study and initial phase of ground investigation carried out by the Wilson Bailey Partnership on the instructions of Crest Nicholson Chiltern with respect to the residential development of this site. The purpose of the investigation has been to research the history and environmental setting of the site, to investigate the ground conditions and assess the implications of the findings with regards to geotechnical design and land contamination.

DESK STUDY SUMMARY

Desk study research has been carried out with reference to publicly available historical mapping and environmental database records together with information held by the Local Authority Contaminated Land Team, historical information held by the Garrison and a site walkover survey.

Records indicate that this part of the Arborfield Garrison site was originally open agricultural land associated with Ellis's Farm, the main agricultural buildings to which were located approximately 50m to the north of the site on the far side of Biggs Lane. The site is shown to have been first developed during the interwar period as part of the expanding military facilities of what became Arborfield Garrison. The site itself was occupied by Baillieu barrack, which military mapping indicates included accommodation buildings, mechanics workshops, exercise facilities coal stores, tool stores and other facilities including messes and kitchens.

The barracks was subsequently demolished and replaced with the current ATIL facilities; a now disused training facility that includes a main steel portal frame building, areas of car parking and hardstanding and several screening spoil mounds. At the time of the further work this building was being demolished.

Desk study research has indicated that the site is not located within an area affected by radon and has not identified any significant potential sources of contamination within this land parcel. This part of the garrison development site is also located remote from any identified more modern areas of potential concern with regards to contamination including the former army workshops and fuel / oil stores, but was formerly occupied by historical sources of ground contamination including coal stores and the potential for asbestos insulated underground service ducts, which are a common feature of historical military facilities.

GROUND CONDITIONS

The post demolition ground investigation works have indicated the presence of made ground to a depth variable depths of between 0.20 m and 1.80 m of variable made ground were encountered, which is consistent with standard military protocols of demolishing to ground level and leaving relic structures and drainage in situ. Firm clay soils of the London Clay were encountered beneath the made ground and proved to the maximum depth of investigation at 5.00m below ground level. Groundwater was encountered as seepages of perched water within the made ground.

The supplementary investigation work has been carried out to determine the effects of the recently felled trees (and thereby determine the requirement for any deepening of foundations to proposed buildings) and also to determine the extent and prevalence of residual below ground level structures.

Laboratory soil contamination testing of selected soil samples have indicated the presence of raised and elevated concentrations of asbestos and lead. Testing carried out on representative samples of the earthworks mounds present within this site have also indicated the presence of locally raised concentrations of asbestos.

GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

The revised development proposals at this site entail the placement of locally up to about 1.00 m of site won fill materials, with parts of the site to be in localised cut, although most of the proposed development to be at or about existing ground level. Consideration is being given to the localised reduced level enabling works exercise to remove the residual below ground structures left from the previous phases of military development.

The ground investigation indicates that traditional strip foundations may be formed within the natural and undisturbed firm clay soils of the London Clay at a minimum depth of 1.00 m below ground level. Foundations will need to be locally deepened where residual structures, or disturbance due to removal of residual structures is

encountered. The supplementary post tree removal ground investigation has indicated that with the exception of a single location additional deepening of foundations due to the potential effects of trees is not required. This aspect of the foundation design is discussed in detail within the appended letter report.

Ground floor slabs should be designed as suspended over a naturally ventilated void.

Elevated sulphate design precautions are not anticipated to be required for the specification of foundation concrete and whilst localised groundwater inflows and excavation side instability may be expected within the sandier near surface soils and made ground, foundation excavations are anticipated to remain generally dry and stable.

The design of road pavements will depend completely upon the nature of the earthworks placed materials that will form the formation level for roads pavements. It is anticipated that earthworks placement will comprise placement of clay soils in accordance with Series 600 of the Specification of Highways Works to provide a site wide earthworks platform to support adoptable highways and mitigate settlement risks.

Whilst soakage testing has not been carried out, soakaways are not considered to present a viable option for the disposal of surface waters due to the predominantly clayey nature of the near surface soils and the made ground. It is understood that a scheme for the development wide surface water management, attenuation, storage and discharge has been developed.

GEOENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS

The historical use of the site is considered to be potentially contaminative, and the ground investigation has indicated the presence of elevated concentrations of a wide range of potential soil contamination across the site.

Remediation in the form of a clean capping system will be required as part of the residential redevelopment of this site in order to effectively mitigate the risk posed to end users. Effective management of the construction process will also be necessary to ensure that risks posed to construction workers during the development can also be effectively mitigated.

The presence of underlying assumed effectively impermeable clay soils will prevent any migration of contaminants to the wider environment.

REMEDIAL PROPOSALS

A requirement for remediation has been identified at this site in order to ensure the mitigation of contamination risks to both the completed development and the construction process and these are detailed within the main body of the report.

In accordance with best practice for redevelopment of any brownfield site, a geo-environmental watching brief should be maintained during the ground works phase of the development in order that should any suspicious or contaminated soils be encountered, they may be investigated, assessed and remediated as necessary under the supervision of Wilson Bailey Partnership and in conjunction with the Local Authority.

As part of this watching brief, specific consideration should be given to areas of the site currently occupied by relic floor slabs from the former buildings, areas of vegetation and soil stockpiling and the area of the partially demolished former electricity substation where access was limited / not possible.

The scope of the proposed remediation should be agreed with the Regulatory Authorities and the works should be supervised by Wilson Bailey Partnership in order to ensure that a suitable validation and verification report can be provided to the Regulatory Authorities to ensure sign off to any contaminated land planning or building control conditions.

FURTHER WORK

A phase of enabling site clearance will be required prior to the importation and placement of fill materials. A watching brief should also be maintained during this phase of works to check for the presence of any localised ground contamination that may require further investigation and assessment.

Reuse of site won fill materials should be carried out in accordance with Regulatory Guidance and best practice.

1.0 INTRODUCTION

The Wilson Bailey Partnership has been commissioned by Crest Nicholson Chiltern to research the environmental setting and history of the site and to carry out a ground investigation of this land parcel that forms Parcel O2 of the Arborfield Garrison redevelopment.

1.1 Proposed Development

Consideration is currently being given to the development of the site as part of the wider redevelopment of the former Garrison. It is understood that the development will comprise predominantly two storey traditional masonry built houses together with garages, driveways, areas of hardstanding for car parking, access roads with ancillary areas of planted soft landscaping and areas of private domestic gardens.

1.2 Purpose of Work

The principal technical objectives of the work carried out were as follows.

- to check the history of the site with respect to previous uses of the site and surrounding areas;
- to determine the prevailing near surface ground conditions;
- to investigate and test for the presence of contamination;
- to carry out an appropriate risk assessment with regards to any contamination; and
- to provide advice and recommendations with respect to geotechnical design.

1.3 Scope of Work

In order to meet the above objectives, a desk study was carried out, followed by a multiphased ground investigation. The desk study comprised:

- a review of readily available geological maps and publically available information provided by the Environment Agency;
- a review of information provided by the Health Protection Agency with regards to radon;
- a review of Ordnance Survey (OS) maps sourced from the Groundsure database;
- a review of anecdotal information and historical maps held by the barracks; and
- a walkover survey of the site.

The physical ground investigation has been carried out in three phases and comprised, in summary, the following activities:

- a post demolition ground investigation comprising a 60 small diameter boreholes drilled to depths of up to 5 m below ground level in accessible locations across the site;
- a subsequent phase of 38 additional small diameter boreholes drilled to depths of up to 5 m below ground level in the immediate proximity to each of the trees that were formerly located across this site following their felling across the site;
- a geophysics survey to check for the presence and locations of below ground building remains and obstructions;

- a subsequent phase of 11 trenches excavated by means of a tracked mechanical excavator to depths of up to 1.30 m below ground level to check for the presence of below ground building remains and obstructions indicated as part of the geophysics survey;
- laboratory testing of selected soil samples for geotechnical properties;
- laboratory testing of selected soil samples for the presence of contamination;
- monitoring of the installed standpipes for groundwater levels and the presence of routine soil gasses; and
- provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.

1.4 Limitations

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the investigation. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled and the number of soil, gas or groundwater samples tested; no liability can be accepted for information in other data sources or conditions not revealed by the sampling or testing. Any comments made on the basis of information obtained from the client or other third parties are given in good faith on the assumption that the information is accurate; no independent validation of such information has been made by the Wilson Bailey Partnership.

2.0 THE SITE

2.1 Site Description

The site considered as part of this report comprises Parcel O2, which forms an irregular shaped area of land with approximate maximum dimensions of 166 m by 365 m.

The site boundaries are relatively complex for this land parcel; the western boundary is formed by a stream, whilst the eastern site boundary is formed by a split chestnut fence, beyond which is a designated area of SANG. To the north of the site is Biggs Lane, whilst the southern boundary is formed by a hedge line and public footpath segregating the site from adjoining development parcels.

A concrete access road facilitates vehicle access from the northwestern corner of the site towards the centre, where several areas of hardstanding and 'grasscrete' are present as car parking for the now disused steel portal frame military training building.

Within the site there are several patches of relic vegetation and semi-mature specimen trees, together with a series of earthworks mounds that are placed to provide an element of visual screening to the former military training building – the ATIL Building.

The site is sensibly level, other than the stockpiles of materials and areas of elevated fill placement.

No indications of potentially contaminative uses were identified as part of the site walkover.

2.2 Site History

The site history has been researched by reference to historical Ordnance Survey (OS) maps sourced from the Groundsure database and supplemented by information provided by the Local Authority environmental enquiry response and historical anecdotal information held by the garrison.

Records indicate that Arborfield Garrison has undergone three main phases of redevelopment during which various buildings have been demolished, cleared and constructed.

Records indicate that this part of the Arborfield Garrison site was originally open agricultural land associated with Ellis's Farm, the main agricultural buildings to which were located approximately 50m to the north of the site on the far side of Biggs Lane. The site is shown to have been first developed during the interwar period as part of the expanding military facilities of what became Arborfield Garrison. The site itself was occupied by Baillieu barrack, which military mapping indicates included accommodation buildings, mechanics workshops, exercise facilities coal stores, tool stores and other facilities including messes and kitchens.

The barracks was subsequently demolished and replaced with the current ATIL facilities that are a now disused training facility and include a main steel portal frame building, areas of car parking and hardstanding and several screening spoil mounds.

Desk study research has indicated that the site is not located within an area affected by radon and has not identified any significant potential sources of contamination within this land parcel. This part of the garrison development site is also located remote from any identified more modern areas of potential concern with regards to contamination including the former army workshops and fuel / oil stores but was formerly occupied by historical sources of ground contamination including coal stores and the potential for asbestos insulated underground service ducts, which are a common feature of historical military facilities.

2.3 Other Information

Searches of information provided by the Environment Agency have not indicated the presence of any nearby registered historical or current land fill sites. The nearest area of landfilling identified as a former brickwork is approximately 1km to the west. This former clay extraction pit was used as a landfill and was licensed to accept household, commercial and industrial wastes and following infilling, was capped and engineered with a perimeter drainage trench and landfill gas management system.

The searches have also indicated the site to be located in an area where less than 1% of homes may be affected by radon emissions, which is the lowest risk category such that radon protection measures are not required as part of the redevelopment of this site.

The Geological Survey map of the area indicates the site to be underlain by London Clay from the surface, with various tracts of alluvium present in the vicinity of the site. Information provided by the Environment Agency indicates the site to not be underlain by any class of productive strata and to not be located within any class of Source Protection Zone associated with any licensed groundwater abstraction points.

The buildings at this site are not understood to include any substantial basement areas or plant rooms, although the former historical military buildings may have included such features and potentially may have included below ground level air raid shelters.

2.4 Preliminary Risk Assessment

The historical use of the site as part of a substantial military barracks may present several sources of historical contamination such as coal stores, oil stores and workshops, although the more recent use of the site as a military training facility is not considered to present a potential for ground contamination. The time that has elapsed since the historical potentially contaminative use may be expected to mitigate the potential risk posed by any relic ground contamination.

There is a potential for asbestos lined underground service trenches to have been installed as part of the former barrack use and there is a potential that the former military buildings at this site may have included potential contaminants including asbestos construction materials and lead based paints.

The presence of assumed low to negligible permeability London Clay soils is likely to mitigate the potential for any off-site sources of ground contamination, groundwater contamination or soil gasses to impact upon this site.

On the basis of the above information there is considered to be a low to medium risk of potentially significant ground contamination at this site.

3.0 EXPLORATORY WORK SAMPLING STRATEGY

In order to meet the objectives described in Section 1.2 a multiphased ground investigation has been carried out to depths of up to 5.00 m below ground level. The locations of the exploratory holes were selected to obtain a general coverage and allow investigation of the prevailing ground conditions within the physical constraints of the site. The latter phases of ground investigation were targeted for geotechnical reasons to be close to recently felled trees, with a further phase of supplementary site investigation targeted on the basis of the findings of a geophysics survey to check for the presence of relic structures and obstructions.

Representative samples of the soils encountered were taken to the laboratory for geotechnical testing and contamination analyses from the initial phase of ground investigation. The analytical suite of soil contamination testing was selected to identify concentrations of a wide range of potential contaminants of concern for the purposes of general coverage. For this investigation the analytical suite included a range of metals, speciated total petroleum hydrocarbons (TPHCWG), speciated polycyclic aromatic hydrocarbons (PAH), and monohydric phenols together with routine analyses for pH and organic content. The contamination analyses were carried out at a MCERTs accredited laboratory and details of the MCERTs accreditation and test methods may be supplied on request.

The borehole records and results of the insitu soil testing and laboratory analyses are appended together with a site plan indicating the exploratory positions.

4.0 GROUND CONDITIONS

The investigation has broadly confirmed the expected ground conditions in that below a variable depth of made ground firm brown becoming stiff dark bluish grey clay soils of the London Clay that were proved to the full depth of investigation.

4.1 Made Ground

Made ground was encountered in each of the exploratory holes to generally nominal depths of less than 0.50 m, but locally significant depths of up to and in excess of 1.80 m below ground level, which is considered to be consistent with the residual below ground remnants of the former military barracks buildings.

Visual or olfactory indications of ground contamination were not generally noted within the made ground encountered as part of the ground investigation, although localised pockets fragments of asbestos containing construction materials have been noted in several locations.

Representative samples of the made ground were recovered from a number of the boreholes from across the land parcel and analysed for a range of contaminants and the results are summarised in Section 4.5. Whilst not every soil sample has been tested it is considered that a suitable coverage of the site has been achieved.

The trial trenching carried out following on from the geophysics survey has confirmed the presence of numerous obstructions within the near surface made ground in locations across the site. These obstructions have been found to be more prevalent in the northeastern part of the site where they have been found to include sections of more substantial foundations and concrete backfilled service ducts. Within the central and southern parts of the site it is apparent that the foundations to the former barracks buildings were less substantial, potentially indicating timber-built structures with lines of isolated pad foundation and a central spine sleeper wall.

4.2 London Clay Formation

The clay soils of the London Clay Formation were encountered underlying the made ground across the site and proved to the maximum depth of investigation. These clay soils were found to be firm brown generally silty and sandy, locally vey sandy clay soils with occasional partings of fine orange-brown silty sand.

Field indications of the effects of trees were noted in the initial phases of investigation, although this has been supplemented by further testing and targeted boreholes following the felling and removal of the trees that were present within the main body of the site. The laboratory geotechnical testing has indicated these clay soils to be of medium volume change potential and medium plasticity.

4.3 Soil Contamination

Part IIA of the Environmental Protection Act 1990, which was inserted into that Act by Section 57 of the Environment Act 1995, provides the main regulatory regime for the identification and remediation of contaminated land. The determination of contaminated sites is based on a “suitable for use” approach which involves managing the risks posed by contaminated land by making risk-based decisions. This risk assessment is carried out on the basis of a source-pathway-receptor approach.

The results of comprehensive laboratory analyses carried out by an MCERTS accredited laboratory on 24 representative soil samples recovered from this site are enclosed. The testing suite has included testing for a wide range of metallic contaminants, speciated hydrocarbons, speciated poly-aromatic hydrocarbons and asbestos the results of which are presented in Part 1 of this report.

The significance of the measured concentrations of any chemicals of concern have been assessed in relation to the available Environment Agency provided statutory C4SLs, supplemented with the available S4UL values that have been adopted by the Chartered Institute of Environmental Health (CIEH) for a residential with plant uptake end use and a soil organic matter representative of the results of the testing carried out (1%). These values are widely accepted as providing a suitable initial screening value against which measured concentrations of potential contaminants can be assessed to determine the requirement for site specific quantitative risk assessment.

Determinant	Acceptability Criteria (residential with plant uptake) mg/kg	Number of exceedances	Location of exceedances
Asbestos	No asbestos	7 of 24	BH 2, BH 5, BH 8, BH 10, BH15, BH20 and BH 27
Arsenic (As)	32	None of 24	--
Cadmium (Cd)	10	None of 24	--
Chromium (hex)	4.3	None of 24	--
Chromium (Cr)	3000	None of 24	--
Copper (Cu)	2330	None of 24	--
Lead (Pb)	200	2 of 24	BH 15 and BH 20
Mercury (Hg)	1.0	None of 24	--
Nickel (Ni)	130	None of 24	--
Selenium (Se)	350	None of 24	--
Zinc (Zn)	3750	None of 24	--
Benzo(a)pyrene	5.0	None of 24	--
Total Phenols (mono)	420	None of 24	--
Speciated Fuel Relation hydrocarbons (TPH)	Various species-specific values	None of 24	--

4.4 Groundwater

Groundwater seepages and inflows were encountered in a number of exploratory boreholes at depths consistent with the bottom of the made ground, such that these inflows are considered to be indicative of isolated pockets of perched water within the made ground and are not a consistent piezometric surface.

4.5 Soil Gas

A limited programme of soil gas monitoring has been carried out at this site and has not indicated the presence of potentially challenging concentrations of soil gasses.

5.0 ADVICE AND RECOMMENDATIONS

The medium strength silty sandy clay soils of the London Clay could be suitable for supporting the anticipated lightly loaded spread foundations associated with traditional two storey houses, although consideration may need to be given to the potential use of piled foundations to the apartment building to be constructed in the northern part of the site as a result of the potential influence of boundary trees that are to remain and the depth of made ground in this area.

7.1 Spread Foundations

Moderate width pad or strip foundations are anticipated to be viable for traditional housing up to two storeys constructed within the central and western parts of this land parcel where the depth of near surface fill materials has been found to be variable but not more than about 2.00 m below ground level.

Foundations should bypass the made ground and reworked natural soils and may be designed to found within the medium strength brown variably sandy clay soils of the London Clay at a minimum depth of 1.00 m below ground level and apply a net allowable bearing pressure of 125 kN/m², with a minimum width of 0.60m.

Foundations should be mesh reinforced and careful inspection for any localised soft spots or areas of ground disturbance associated with historical development at this site should be carried out and any soft spots should be bypassed or locally removed and replaced with suitably compacted granular fill. If there is any doubt on site as to whether the ground is locally softened or has been locally disturbed, the foundation excavation should be inspected by a suitability qualified and experienced engineer from Wilson Bailey Partnership.

The above assumed net allowable bearing capacity value includes an adequate factor of safety against bearing capacity failure and should ensure that settlement remains within normal tolerable limits. In the unlikely event that heavily or eccentrically loaded foundations are required, a check should however be made on the magnitude of settlement once the base sizes are known, as the design bearing pressure is settlement dependent.

Foundations will need to be deepened in the vicinity of retained and proposed trees and National House Building Council (NHBC). Where a tree is to be retained the final mature height should be adopted and due allowance should be made for future growth of trees, with particular reference to the relatively dense additional planting that is proposed as part of the ecological mitigation measures. As part of the foundation assessment an allowance for the group effects of trees and dense vegetation should be considered, with further ground investigation and plot specific assessment carried out as deemed necessary by the structural engineers.

Detailed moisture content profiling has been carried out following the removal of trees that were previously present within the main body of the site. The tree removal was carried out during the spring of 2024 prior to tree coming into leave and following a particularly wet winter period.

The moisture content profiling has confirmed that with the exception of the shallow soils encountered in Borehole Nos 136 and 141, no indications of the effects of trees has been encountered and the soils samples are not shown to be desiccated. Borehole Nos 136 and 141 were located in the vicinity of mature trees and the field observations are in accordance with the results of the laboratory testing that indicates that soil samples recovered from these locations are desiccated to a maximum depth of 1.25m and 1.00m respectively, with no indications of the effects of trees identified below 1.50m.

On the basis of the further work that has been carried out it is therefore considered that other than for Plot No 37 (and associated garage) and Plot Nos 117/118 (which are a pair of semi detached houses) additional deepening due to the effects of trees is not anticipated to be required and that standard depth traditional strip or trench fill foundations are anticipated to be viable. For the affected plots identified above it is anticipated that deepening of foundation to a maximum of 1.50 m is at least locally required to ensure that the identified desiccated soils are effectively bypassed.

Notwithstanding the above, whilst the effects of trees has not been encountered as a wide spread issue of concern at this site such that additional deepening of foundation is not generally required, all foundations should extend beyond the zone of desiccation; in this respect it may be prudent to have foundation excavations inspected by a suitably experienced engineer if there is any doubt with regards to the effects of trees. The requirement for compressible material alongside foundations should be determined by reference to the NHBC guidelines.

Due to the extensive historical development and redevelopment of this site, there remains a risk that further localised pockets of deeper made ground could be present on site, although these are not anticipated to be extensive or widespread.

5.2 Piled Foundations

Piled foundations will need to extend into the London Clay at depth on this site and a further phase of deeper level ground investigation will need to be carried out to inform the design of piled foundations in due course.

It is anticipated that following an enabling phase of earthworks to remove the residual structures associated with the former military buildings, consideration could be given to the use of traditional driven piles at this site, which would mitigate any concerns associated with dealing with any potentially contaminated pile arisings.

5.3 Obstructions

The targeted trial trenching carried out following on from the geophysics survey confirmed the presence of numerous obstructions within the near surface made ground in locations across the site.

These obstructions have been found to be more prevalent in the northeastern part of the site where they have been found to include sections of more substantial foundations and concrete backfilled service ducts. Within the central and southern parts of the site it is apparent that the foundations to the former barracks buildings were less substantial, potentially indicating timber-built structures with lines of isolated pad foundation and a central spine sleeper wall.

Consideration could be given to carrying out an enabling phase of ground clearance targeted within the northeastern part of the site where obstructions have been found to be more prevalent.

Once obstructions have been removed, these areas of enabling ground clearance should be backfilled in accordance with an Earthworks Specification in order to ensure that future ground settlements and future excavation instability is mitigated.

5.4 Excavations

It is likely that across the majority of the site shallow excavations for services and foundations within the near surface soils are likely to remain within the placed earthworks fill materials and as such may be expected to be dry and broadly stable in the short term. Groundwater seepages of perched water may be encountered within the made ground although these should be of limited volume and should be readily controlled by sump pumping.

Where personnel are required to enter excavations, a risk assessment should be carried out and temporary lateral support or battering of the excavation sides considered in order to comply with normal safety requirements.

5.5 Ground Floor Slabs

In view of the presence of made ground and medium plasticity clay soils it is anticipated that there will be a requirement for suspended ground floor slabs over a void in accordance with NHBC guidelines at this site.

5.6 Pavement Design

The design of road pavements will depend upon the nature of the earthworks placed materials that will form the formation level for roads pavements. It is anticipated that earthworks placement will comprise placement of clay soils in accordance with Series 600 of the Specification of Highways Works to provide a site wide earthworks platform to support adoptable highways and mitigate settlement risks.

A scheme of earthworks testing will need to be agreed in order to demonstrate adherence to the proposed Earthworks Specification which would normally be expected to demonstrate a CBR value of 5% with clay soils placed to a highways specification.

Locally where the formation level for proposed new roads may be formed within existing natural and undisturbed soils formation level CBR testing may be required to demonstrate an appropriate design CBR value.

5.7 Buried Services

New buried services are likely to be placed primarily within the near surface soils and will therefore be within the placed earthworks fill materials across most of the site.

Precautions to ensure the protection of potentially sensitive underground services, such as drinking water pipes, are not likely to be required based on the results of parcel specific soil contamination testing.

Statutory utility providers do however have a responsibility for ensuring the provision of wholesome water and may insist upon a parcel wide requirement for protected plastic services, particularly due to the former military use and multiple phases of development and redevelopment at this site. Detailed discussions with the utility company should be held as soon as possible in order to discuss the protection of buried potentially sensitive services.

5.8 Effect of Sulphates

The results of chemical analyses of selected soil samples for the presence of sulphates have indicated low levels of sulphates such that buried concrete should be designed in accordance with Class DS-1 AC-1s of Table 2 of BRE Special Digest 1: SD1. The guidelines contained in this digest should be followed in the design of foundation concrete.

5.9 Surface Water Drainage

Soakage testing did not form part of the brief for this ground investigation work as infiltration based drainage is not considered to present a viable option for the disposal of surface waters due to the predominantly clayey nature of the near surface soils. It is understood that a scheme for the development wide surface water management, attenuation, storage and discharge has been developed and includes the provision of attenuation basis within the Green Corridor located to the south of this land parcel.

5.10 Contamination Risk Assessment

The historical use of the site as part of an inter-war period military barracks presents the potential for a wide range of potential ground contamination.

The ground investigation has identified the presence of asbestos and lead contamination that are likely to be associated with former construction materials used in the former buildings that were subsequently demolished and left insitu beneath a covering of reworked topsoil.

One of the requirements of the Environment Act (1995) is that local authorities carry out inspections of their area with a view to identifying sites that may be contaminated. When assessing whether a site is contaminated the local authority will attempt to establish the presence of a 'pollution linkage'. A pollution linkage requires there to be a source of contamination, a sensitive receptor that can be adversely affected by the contamination and a pathway via which contamination can reach the target.

The proposed development of the site will introduce new sensitive receptors in the form of end users and construction workers, together with the formation of new pathways through the creation of areas of private domestic gardens.

The proposed development will also include an effective clean capping layer that is to comprise earthworks placed clay fill materials, which will effectively isolate end users from any of the identified residual ground contamination

With regards to the specific considerations required under the planning conditions, the risk to the following potentially sensitive receptors has been considered;

Human Health (end users)

Potential risks posed to human health have been considered and the results of soil contamination testing indicate that there is requirement for the provision of the clean capping layer.

A requirement for soil gas protection to be incorporated into the design of ground floor slabs is not anticipated.

As with any brownfield redevelopment site there is a potential for localised ground contamination that should be managed as part of an overall site contaminated land watching brief.

Human Health (site workers and future maintenance workers)

Precautions with regards to site workers and future maintenance workers are anticipated over and above normal safe working practices such as restricted eating and drinking, regular hand washing and the provision and use of routine PPE in order to ensure protection from any relic asbestos contamination within the existing fill materials.

Task specific risk assessments will need to be carried out by the Contractor to ensure that a safe system of work can be developed for this site.

Property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes,

The risk to these potential receptors has been considered and in view of the absence of significant potentially mobile ground contamination, a significant risk warranting further action has not been identified.

The requirement for protected services such as drinking water has been considered and should be discussed in detail with the statutory utility provider for potable water.

Adjoining land,

The risk to this potential receptor has been considered and in view of the absence of significant potentially mobile ground contamination, a significant risk warranting further action has not been identified.

Groundwaters and surface waters

The risk to these potential receptors has been considered and in view of the absence of significant potentially mobile ground contamination, or a hydraulically continuous groundwater regime, a significant risk warranting further action has not been identified

Ecological systems

The risk to this potential receptor has been considered and in view of the absence of significant potentially mobile ground contamination, a significant risk warranting further action has not been identified

5.11 Waste Disposal and Materials Management

Any spoil arising from excavations or landscaping works will need to be disposed of to a licensed tip. Under the European Waste Directive landfills are classified as accepting Inert, Non-hazardous or Hazardous wastes in accordance with Waste Acceptance Criteria (WAC) which, for Non-hazardous and Inert wastes are based upon the results of CEN method bulk leaching tests or percolation tests. Based upon the results of the analyses carried out and the technical guidance provided by the Environment Agency¹ it is considered likely that arisings from construction works on this land parcel are likely to be generally classified as Non-Hazardous waste, although arisings from excavations into natural ground and the reworked natural ground may be classified as Inert providing they can be effectively segregated.

The presence of asbestos within the made ground will need to be carefully considered and the measured asbestos concentrations may result in an increased waste classification, but not likely to Hazardous Waste class.

In the unlikely event that during the course of the ground works soils are found to be stained or have any hydrocarbon odour, they should be stockpiled separately from other soils in order that they may be tested to determine a revised waste classification, as these soils may potentially require classification as Hazardous waste. Any such segregation, stockpiling or on site treatment to reduce or later the likely waste classification will need to be carried out in accordance with a Materials Management Plan that will need to be approved by the Environment Agency prior to commencement of work. In any case, all waste classifications should be confirmed by the receiving landfill once the soils to be discarded have been identified. In order to finalise an Inert waste classification, it will probably be necessary to carry out further analyses including WAC CEN method bulk leaching tests. Such tests should be carried out upon representative samples from the waste stream once the extent of the materials to be discarded has been established. The local waste regulation department of the Environment Agency (EA) should be contacted to obtain details of tips that are licensed to accept the soil represented by the test results. The tips will be able to provide costs for disposing of this material and the scope of any additional testing that may be required.

¹ Environment Agency 2003. *Hazardous Waste: Interpretation of the definition and classification of hazardous waste*. Technical Guidance WM2

6.0 REQUIREMENT FOR REMEDIATION

The ground investigation has identified a requirement for remediation at this site as part of the proposed residential redevelopment.

Detailed remediation proposals will need to be provided as part of a Remediation Strategy and Verification Plan report. This report will need to be based upon the above Contaminated Land Risk Assessment that has identified contaminants of concern and the receptors that may be affected and will need to set out the remediation actions that are required to mitigate any pollution linkages that may be formed.

7.0 FURTHER WORK

As with the development of any site there is the risk of further localised pockets of contamination being encountered as part of the proposed ground works. The development should therefore be carried out in accordance with the requirements of a routine geo-environmental watching brief, whereby should any contaminated or suspicious soils be encountered they may be appropriately tested, investigated and assessed by Wilson Bailey in consultation with the Regulatory Authorities before agreeing the scope of any remedial actions as necessary.

A phase of enabling site clearance will be required prior to the importation and placement of fill materials. A watching brief should also be maintained during this phase of works to check for the presence of any localised ground contamination that may require further investigation and assessment.

The importation of fill materials should be carried out under a Materials Management Plan and the placement should be carried out in accordance with a Earthworks Specification that will need to be developed for this site.

Once the detailed development proposals have been finalised a further phase of ground investigation will be required to inform the design of piled foundations to the proposed new buildings.

A Remediation Strategy and Validation Plan will need to be formulated to set out the requirements of the report that will need to be presented to demonstrate the appropriate management of contamination and the effective remediation of the site to render it suitable for proposed residential redevelopment.

Once the design location and level of proposed roads has been finalised it may be the case that some sections of road may be formed within existing natural undisturbed soils. In this instance, such locations should be identified and targeted CBR testing should be carried out to inform the design of roads. Across the majority of the site roads are anticipated to either be constructed within existing made ground, where an assumed CBR of 2% may be used, or roads may be formed within placed fill, the specification of which will effectively control the selection of design CBR value.

APPENDIX

Borehole Records

Soil Geotechnical Laboratory Analyses

Soil Chemical Analyses

Selected Historical Ordnance Survey Maps

Site Plan



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1		Water strike(1) at 0.20m.		(0.20) 0.20 (0.20) 0.40	TOPSOIL		▽1
						Firm pale grey silty sandy CLAY		
						Firm becoming stiff pale grey and brown mottled slightly silty CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(3.05)			
2.50	D5							
3.00	D6							
3.45	D7				3.45	Complete at 3.45m		

Remarks Groundwater seepage at 0.20m.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH1	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.40) 0.40	MADE GROUND (reworked topsoil with occasional brick and concrete)		
1.00	D2					Firm becoming stiff pale brown, brown and pale grey silty locally slightly sandy CLAY with occasional fine bands of dark orange-brown and pale yellowish brown silty fine sand		
1.50	D3							
2.00	D4				(2.60)			
2.50	D5							
3.00	D6				3.00			
						Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx)	Logged By
	1:50	
	Figure No. J202210.BH10	

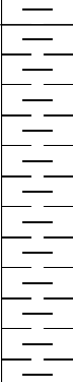


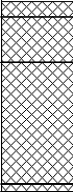
Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1		Water strike(1) at 0.60m.		(0.20) 0.20	MADE GROUND (crushed aggregate with brown sand)		▽1
					(0.60)	MADE GROUND (crushed aggregate)		
					0.80	Firm becoming stiff pale brown and pale grye mottled silty CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.65)			
2.50	D5							
3.00	D6							
3.45	D7				3.45	Complete at 3.45m		

Remarks Groundwater seepage at 0.60m.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH11	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH12		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.40	MADE GROUND (crushed granular aggregate)			
					0.40	MADE GROUND (reworked brown and grey silty sandy clay with occasional gravel)			
					0.80	Firm becoming stiff pale brown, brown and pale grey mottled silty CLAY			
1.00	D2								
1.50	D3								
2.00	D4				(2.65)				
2.50	D5								
3.00	D6								
3.45	D7				3.45	Complete at 3.45m			
Remarks Groundwater not encountered.						Scale (approx) 1:50		Logged By	
						Figure No. J202210.BH12			

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH13		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1		Water strike(1) at 0.40m.		0.10 (0.30) 0.40 (0.20) 0.60	MADE GROUND (tarmac) MADE GROUND (crushed granular aggregate) Soft dark grey silty sandy CLAY Firm becoming stiff pale yellowish brown and brown silty sandy CLAY		 	
1.00	D2								
1.50	D3								
2.00	D4				(2.40)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater seepage at 0.40m.						Scale (approx) 1:50		Logged By	
						Figure No. J202210.BH13			

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel 02		Number BH14	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.10 (0.30) 0.40	MADE GROUND (tarmac) MADE GROUND (crushed granular aggregate)			
1.00	D2				(0.80)	MADE GROUND (reworked dark grey and pale grey very sandy clay wth abundant brick and gravel)			
					1.20 1.25	MADE GROUND (concrete) Complete at 1.25m			
Remarks Gorundwater not encountered. Sampler refused on concrete obstruction at 1.20m.						Scale (approx) 1:50		Logged By	
						Figure No. J202210.BH14			



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1		Water strike(1) at 0.50m.		0.10 (0.50) 0.60	MADE GROUND (tarmac) MADE GROUND (crushed granular aggraegate) Firm locally soft pale brown and pale grey silty slighty sandy CLAY		▽1
1.00	D2							
1.50	D3							
2.00	D4				(2.40)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater encountered at 0.50m. Poor recovery 2.00m to 3.00m.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH15	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				0.10 (0.20) 0.30	MADE GROUND (reworked topsoil)		
					(0.50)	MADE GROUND (tarmac)		
					0.80	MADE GROUND (crushed gravel and clinker)		
1.00	D2					Firm pale brown and brown mottled silty sandy CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH17	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(1.20)	MADE GROUND (reworked brown clay with abundant gravel and cobbles)		
1.00	D2				1.20	Firm pale brown silty sandy CLAY		
1.50	D3							
2.00	D4				(1.80)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH18	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil with gravel and brick)		
1.00	D2					Firm pale yellowish brown and brown mottled silty locally slightly sandy CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH19	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30 0.35 (0.45) 0.80	MADE GROUND (rewroekd topsoil) MADE GROUND (tarmac) MADE GROUND (crushed aggregate and cemented sand)	 	
1.00	D2					Firm becoming stiff pale grey and brown mottled slightly silty CLAY		
1.50	D3							
2.00	D4				(2.65)			
2.50	D5							
3.00	D6							
3.45	D7				3.45	Complete at 3.45m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH2	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL		
1.00	D2					Firm pale brown and pale grey mottled silty sandy CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH20	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL Firm pale yellowish browbn, brown and pale grey mottled silty sandy CLAY		
1.00	D2							
1.50	D3				(2.80)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.							Scale (approx) 1:50	Logged By
							Figure No. J202210.BH21	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
					(0.60)	MADE GROUND (reworked brown sandy clay with occasional gravel and occasional topsoil)		
1.00	D2				0.80	Firm becoming stiff brown and pale grey mottled silty CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH22	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL		
					(0.50)	MADE GROUND (brick and brick fragments)		
					0.70	Firm pale brown and pale grey mottled silty sandy CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

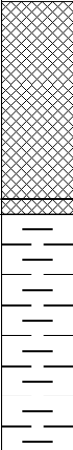
Remarks Groundwater not encountered. Poor recovery ground level to 0.70m.							Scale (approx) 1:50	Logged By
							Figure No. J202210.BH23	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.40) 0.40	MADE GROUND (reworked topsoil with brick)		
1.00	D2					Firm pale brown and brown mottled silty CLAY		
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH24	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH25		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(1.30)	MADE GROUND (soft brown silty sandy clay)			
1.00	D2				1.30	MADE GROUND (dark grey silty sandy clay with decayed roots and rootlets)			
1.50	D3				1.40	Firm pale brown and brown silty CLAY			
2.00	D4				(1.60)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.						Scale (approx) 1:50		Logged By	
						Figure No. J202210.BH25			

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH26		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.20) 0.20 (0.30) 0.50	MADE GROUND (reworked topsoil) MADE GROUND (crushed brick and brick) Firm pale brown and brown silty sandy CLAY			
1.00	D2								
1.50	D3								
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered. Scale (approx) 1:50 Logged By Figure No. J202210.BH26									



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.40) 0.40	MADE GROUND (reworked topsoil with brick)		
1.00	D2					Firm pale brown and brown with pale grey mottled silty locally sandy CLAY		
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH27	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
					(0.60)	MADE GROUND (dark brown sandy clay with brick and tiles)		
1.00	D2				0.80	Firm pale brown and brown silty sandy CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH28	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.80) 0.80 0.85	MADE GROUND (brown sandy clay with brick and concrete) MADE GROUND (brick and concrete obstruction) Complete at 0.85m		

Remarks Groundwater not encountered. Several attempts at alternate locations all refused.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH29	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				0.50	MADE GROUND (reworked topsoil with brick)		
1.00	D2					Firm becoming stiff pale brown and grey mottled slightly silty locally slightly sandy CLAY		
1.50	D3				(2.50)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH3	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.50)	MADE GROUND (reworked topsoil)		
					0.50 (0.40)	MADE GROUND (reworked brown clay with sand, concrete and brick)		
1.00	D2				0.90	Firm pale brown and brown mottled silty sandy CLAY		
1.50	D3							
2.00	D4				(2.10)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH30	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked brown silty sandy CLAY)		
1.00	D2				0.70	Firm brown slightly silty fissured CLAY with occasional pale grey mottling		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH31	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
					(0.60)	MADE GROUND (brown sandy clay with brick and concrete)		
1.00	D2				0.80	Firm brown silty CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH32	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil)		
1.00	D2				(1.10)	MADE GROUND (reworked brown clay with occasional brick)		
1.50	D3				1.40	Firm brown silty CLAY		
2.00	D4				(1.60)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH33	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.15) 0.15 (0.35) 0.50	MADE GROUND (reworked topsoil) MADE GROUND (crushed granular aggregate) Firm orange-brown and brown silty slightly sandy CLAY	 	
1.00	D2				(1.30)			
1.50	D3				1.80			
2.00	D4				(1.20)	Stiff dark grey fissured slightly silty CLAY		
2.50	D5				3.00			
3.00	D6					Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH34	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
					(0.50)	MADE GROUND (crushed granular aggregate)		
					0.70	Firm dark orange-brown and brown silty locally slightly sandy CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH35	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil with brick)		
					(0.50) 0.80	MADE GROUND (reworked brown silty slightly sandy clay with occasional fine brick and gravel plus decayed rootlets)		
1.00	D2					Firm locally soft pale yellowish brown and brown silty sandy locally very sandy CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH36	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil)		
					(0.40) 0.70	MADE GROUND (reworked brown clay with brick and tarmac)		
1.00	D2					Soft becoming firm pale yellowish brown and pale grey silty sandy locallt very sandy CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00			
						Complete at 3.00m		

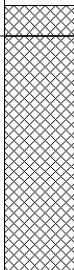
Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH37	

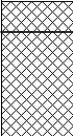


Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.15) 0.15	MADE GROUND (reworked topsoil)		
					(0.55) 0.70	MADE GROUND (reworked brown sandy clay with occasional brick and gravel)		
1.00	D2					Firm pale brown silty locally slightly sandy CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH38	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH39		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)			
						MADE GROUND (reworked brown silty clay with occasional gravel and decatyed topsoil)			
1.00	D2				(1.60)				
1.50	D3								
					1.80	Firm brown silty CLAY			
2.00	D4								
					(1.20)				
2.50	D5								
					3.00	Complete at 3.00m			
3.00	D6								
Remarks Groundwater not encountered. Borehole drilled from top of screening soil mound by ATIL building.								Scale (approx) 1:50	Logged By
								Figure No. J202210.BH39	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel 02		Number BH4	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.20	MADE GROUND (rewoked topsoil)			
					0.20	MADE GROUND (reworked pale brown silty sandy clay with occasional fine flint gravel and occasional brick)			
1.00	D2				0.70				
1.50	D3				0.90	Firm becoming stiff pale grey and brown mottled silty CLAY		—	
2.00	D4				(2.10)			—	
2.50	D5							—	
3.00	D6				3.00	Complete at 3.00m		—	
Remarks Groundwater not encountered.						Scale (approx) 1:50		Logged By	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel 02		Number BH40	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1		Water strike(1) at 1.40m.		(0.20) 0.20 (0.25) 0.45	Reinforced CONCRETE slab MADE GROUND (crushed granuklar aggregate) Firm dark orange-brown and brown silty CLAY		  	
1.00	D2								
1.50	D3								
2.00	D4								
2.50	D5								
3.00	D6								
						Complete at 3.00m			
Remarks Groundwater seepage at 1.40m.								Scale (approx) 1:50	Logged By
								Figure No. J202210.BH40	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20 (0.20) 0.40	Reinforced CONCRETE slab MADE GROUND (crushed granular aggregate) Firm brown silty CLAY	 	
1.00	D2							
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH41	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.25) 0.25	MADE GROUND (reworked topsoil)		
1.00	D2				(2.05)	MADE GROUND (reworked brown silty sandy clay with brick fragments, decayed topsoil and occasional tarmac)		
1.50	D3							
2.00	D4				2.30			
2.50	D5				(0.70)	Firm pale orange-brown, brown and pale grey mottled silty locally sandy CLAY		
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered. Borehole drilled from top of soil screening mound around ATIL building.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH43	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
1.00	D2				(1.60)	MADE GROUND (reworked brown clay with brick and topsoil and fine flint gravel)		
1.50	D3							
2.00	D4				1.80 1.90	Firm pale grey veru sandy CLAY		
2.50	D5				(1.10)	Firm pale orange-brown and brown mottled silty CLAY		
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered. Borehole drilled through screening soil mound around ATIL building.	Scale (approx)	Logged By
	1:50	
	Figure No. J202210.BH44	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL		
1.00	D2					Firm brown and pale orange-brown mottled slightly silty CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH45	



Arborfield Parcel 02

Number
BH46

Drive-in Windowless Sampler

Dimensions

Dates	10/03/2022
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Crest Nicholson

Job Number
J202210

Location

Dates	10/03/2022
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DPB

Sheet
1/1

Depth
(m)

Sample / Tests

Water
Depth
(m)

Field Records

Level
(mOD)Depth
(m)
(Thickness)

Description

Legend

Water	
-------	--

0.50

D1

(0.40)

0.40

(0.40)

0.80

0.85

MADE GROUND (reworked topsoil)

MADE GROUND (brick rubble and concrete)

CONCRETE obstruction

Complete at 0.85m

Remarks

Remarks	Three alternate locations attempted all terminated at 0.85m on concrete. Further boreholes in this area not attempted due to buried services.
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Scale (approx)

1:50

Logged
By

Figure No.

J202210.BH46



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil)		
					(0.50) 0.80	MADE GROUND (reworked clay, brick and concrete)		
1.00	D2					Firm brown silty locally slightly sandy CLAY		
1.50	D3							
2.00	D4				(2.20)			
2.50	D5							
3.00	D6				3.00			
						Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH47	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20 (0.20) 0.40	MADE GROUND (reworked topsoil with tarmac) MADE GROUND (sand and gravel) Firm brown and dark orange-brown silty locally sandy CLAY	 	
1.00	D2							
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH48	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH5		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.20	MADE GROUND (reworked topsoil)			
					0.20	MADE GROUND (reworked brown sandy clay with brick and gravel)			
1.00	D2				0.60	Firm becoming stiff brown, pale brown and pale grey mottled fissured slightly silty CLAY			
1.50	D3								
2.00	D4								
2.50	D5								
3.00	D6								
3.45	D7								
					3.45	Complete at 3.45m			
Remarks Groundwater not encountered.						Scale (approx)		Logged By	
						1:50			
						Figure No. J202210.BH5			



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00	D2				(0.20) 0.20	TOPSOIL		
1.50	D3					Firm brown and orange-brown mottled silty locally slightly sandy CLAY		
2.00	D4				(3.25)			
2.50	D5							
3.00	D6							
3.45	D7				3.45	Complete at 3.45m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH50	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20 (0.20) 0.40	MADE GROUND (reworked topsoil)		
						MADE GROUND (crushed concrete and possible relic weak concrete slab)		
1.00	D2					Firm brown and orange-brown mottled silty locally sandy and very sandy CLAY		
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH51	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL Firm brown and orange-brown mottled silty sandy locally very sandy CLAY		
1.00	D2							
1.50	D3				(2.80)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH52	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				0.10	TOPSOIL		
1.00	D2					Firm brown and orange-brown mottled silty sandy locally very sandy CLAY		
1.50	D3				(2.90)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groudwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH53	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil with chalk and concrete)		
1.00	D2					Firm brown and orange-brown mottled silty sandy locally very sandy CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groudwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH54	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30 (0.30) 0.60	MADE GROUND (reworked topsoil)		
						MADE GROUND (reworked brown sandy clay with scattered fine flint gravel)		
						Firm brown silty CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.40)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx)	Logged By
	1:50	
	Figure No. J202210.BH55	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH56		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.25	D0				(0.40)	MADE GROUND (reworked topsoil)			
0.50	D1				0.40 0.45 0.55	MADE GROUND (relic weak concrete slab)			
						MADE GROUND (sand and gravel)			
1.00	D2					Firm brown, orange-brown and pale grey mottled silty sandy locally very sandy CLAY			
1.50	D3				(2.45)				
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									

Remarks Groudwater not encountered.		Scale (approx) 1:50	Logged By
		Figure No. J202210.BH56	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.35) 0.35	MADE GROUND (reworked topsoil with gravel)		
1.00	D2					Firmbrown and orange-brown mottled silty locally sandy CLAY		
1.50	D3				(2.65)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH57	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH58		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	D1				(0.20) 0.20 (0.40) 0.60	MADE GROUND (reworked topsoil) MADE GROUND (reworked brown sandy clay with gravel) Firm brown, orange-brown and pale grey mottled silty slightly sandy CLAY			
1.00	D2						                                                                            		
1.50	D3				(2.40)				
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.							Scale (approx) 1:50	Logged By	
							Figure No. J202210.BH58		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH59		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 10/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.20	MADE GROUND (reworked topsoil) Firm brown, orange-brown and pale grey mottled silty sandy locally veru sandy CLAY			
1.00	D2								
1.50	D3				(2.80)				
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
									
Remarks Groundwater not encountered.								Scale (approx) 1:50	Logged By
								Figure No. J202210.BH59	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel 02		Number BH6	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	D1				(0.40)	MADE GROUND (rewroked topsoil with brick)			
					0.40 (0.30)	MADE GROUND (dark brown reworked clay with brick and clinker)			
1.00	D2				0.70	Firm becoming stiff brown and pale brown mottled slightly silty CLAY			
1.50	D3								
2.00	D4				(2.30)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groudwater not encountered.						Scale (approx)		Logged By	
						1:50			
						Figure No. J202210.BH6			



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 10/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked topsoil with brick)		
1.00	D2				0.70	Firm orange-brown, brown and pale grey mottled silty sandy CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH60	

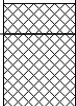
 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel 02		Number BH7	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				0.20 0.20 0.50 0.70	MADE GROUND (reworked topsoil) MADE GROUND (reworked brown sandy clay with brick and gravel) Firm becoming stiff pale brown and pale grey silty CLAY			
1.00	D2								
1.50	D3								
2.00	D4				(2.30)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks						Scale (approx) 1:50		Logged By	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Crest Nicholson	Job Number J202210
	Location	Dates 03/03/2022	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL		
					(0.50)	Soft becoming form pale brown and pale grey silty sandy CLAY with occasional fine flint gravel and decayed rootlets		
					0.70	Firm becoming stiff pale brown and pale grye mottled silty CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202210.BH8	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel 02		Number BH9		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client Crest Nicholson		Job Number J202210	
		Location		Dates 03/03/2022		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	D1				0.20 0.20 (0.50) 0.70	MADE GROUND (reworked topsoil) MADE GROUND (reworked brown sandy clay with abundant cincrete and brick) Firm becoming stiff pale brown and pale grey silty CLAY			
1.00	D2								
1.50	D3								
2.00	D4				(2.75)				
2.50	D5								
3.00	D6								
3.45	D7				3.45	Complete at 3.45m			
Remarks Groundwater not encountered. Poor recovery from ground level to 1.00m due to concrete.						Scale (approx) 1:50		Logged By	
						Figure No. J202210.BH9			

		Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results									
Job No. 31707		Project Name Parcel ARB 02						Programme			
								Samples received		13/04/2022	
								Schedule received		19/04/2022	
Project No. -		Client Wilson Bailey						Project started		19/04/2022	
								Testing Started		09/05/2022	
Hole No.	Sample				Soil Description	NMC %	Passing 425µm %	LL %	PL %	PI %	Remarks
	Ref	Top m	Base m	Type							
BH34	-	1.00	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY with traces of carbonaceous deposits	21	100	41	20	21	
BH37	-	1.00	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY	20	100	43	18	25	
BH1	-	1.50	-	D	Brown slightly mottled grey silty CLAY with orangish brown sand pockets	25	100	45	22	23	
BH4	-	1.00	-	D	Orangish brown slightly mottled grey silty CLAY with rare fine gravel and fine rootlets	25	99	48	21	27	
BH6	-	1.50	-	D	Orangish brown slightly mottled grey silty CLAY	22	100	49	21	28	
		Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0 <i>These results only apply to the items tested</i> NOTE: The report shall not be reproduced except in full without authority of the laboratory				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: 11/05/2022	
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)						MSF-5-R1(b)					



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

Job No. 31707	Project Name Parcel ARB 02	Programme	
		Samples received	13/04/2022
Project No. -	Client Wilson Bailey	Schedule received	19/04/2022
		Project started	19/04/2022
		Testing Started	05/05/2022

Hole No.	Sample				Soil description	Dry Mass passing 2mm %	SO4 Content mg/l	pH	Remarks
	Ref	Top m	Base m	Type					
BH34	-	1.00	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY with traces of carbonaceous deposits	100	400	7.42	
BH37	-	1.00	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY	100	90	7.40	
BH1	-	1.50	-	D	Brown slightly mottled grey silty CLAY with orangish brown sand pockets	100	100	7.44	
BH6	-	1.50	-	D	Orangish brown slightly mottled grey silty CLAY	100	120	7.42	



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

These results only apply to the items tested
NOTE: The report shall not be reproduced except in full without authority of the laboratory
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

Checked and
Approved
Initials J.P
Date: 11/05/2022

2519

MSF-5-R29



Dominic Brightman
Wilson Bailey Geotechnical & Environmental Ltd
Northdown Farmhouse
Donhead St Mary
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Derwentside Environmental Testing Services Ltd
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Kent
ME17 2JN
t: 01622 850410

DETS Report No: 22-02900

Site Reference: Arborfield Parcel 02

Project / Job Ref: None Supplied

Order No: None Supplied

Sample Receipt Date: 23/03/2022

Sample Scheduled Date: 24/03/2022

Report Issue Number: 1

Reporting Date: 30/03/2022

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

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Soil Analysis Certificate						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH2	BH4	BH5	BH6	BH8
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 1.00	0.50	0.25 - 0.50	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592266	592267	592268	592269	592270

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Detected	Not Detected	Detected	Not Detected	Detected
Sample Matrix ^(S)	Material Type	N/a	NONE	Bundle of Chrysotile fibres		Bundles of Chrysotile and Amosite fibres		Bundles of Chrysotile fibres
Asbestos Type ^(S)	PLM Result	N/a	ISO17025	Chrysotile		Amosite Chrysotile		Chrysotile
Asbestos Quantification ^(S)	%	< 0.001	ISO17025	0.001		0.003		0.002
pH	pH Units	N/a	MCERTS	7.9	7.8	8.1	6.9	7.5
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.7	1.5	0.7	0.5	1.1
Arsenic (As)	mg/kg	< 2	MCERTS	7	10	8	5	10
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	12	18	14	11	19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	12	18	10	5	21
Lead (Pb)	mg/kg	< 3	MCERTS	54	41	25	11	40
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	6	8	5	< 3	7
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	42	83	76	19	76
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH10	BH11	BH13	BH15	BH20
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.50	0.50 - 1.00	0.25 - 0.50	0.50
Reporting Date: 30/03/2022	DETS Sample No	592271	592272	592273	592274	592275

Determinand	Unit	RL	Accreditation	Detected	Not Detected	Not Detected	Detected	Detected
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Detected	Not Detected	Not Detected	Detected	Detected
Sample Matrix ^(S)	Material Type	N/a	NONE	Bundle of Chrysotile fibres			Bundle of Chrysotile fibres	Bundles of Chrysotile fibres
Asbestos Type ^(S)	PLM Result	N/a	ISO17025	Chrysotile			Chrysotile	Chrysotile
Asbestos Quantification ^(S)	%	< 0.001	ISO17025	< 0.001			0.001	0.004
pH	pH Units	N/a	MCERTS	7.7	7.6	7.5	8.0	8.0
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.1	0.8	1.2	1.3	1.5
Arsenic (As)	mg/kg	< 2	MCERTS	11	6	7	8	9
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	17	11	11	14	17
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	13	7	11	14	18
Lead (Pb)	mg/kg	< 3	MCERTS	114	17	18	800	225
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	8	3	3	7	8
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	62	27	30	91	128
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH23	BH27	BH30	BH39	BH37
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	1.00	0.50
Reporting Date: 30/03/2022	DETS Sample No	592276	592277	592278	592279	592280

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE		Bundles of Chrysotile fibres			
Asbestos Type ^(S)	PLM Result	N/a	ISO17025		Chrysotile			
Asbestos Quantification ^(S)	%	< 0.001	ISO17025		0.004			
pH	pH Units	N/a	MCERTS	7.7	8.0	7.7	7.3	7.6
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.1	1.4	0.6	0.3	7.7
Arsenic (As)	mg/kg	< 2	MCERTS	7	9	6	10	29
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	0.4
Chromium (Cr)	mg/kg	< 2	MCERTS	11	17	12	23	28
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	9	17	6	10	75
Lead (Pb)	mg/kg	< 3	MCERTS	23	70	15	11	75
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	3	8	4	12	33
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	31	128	27	37	231
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH36	BH38	BH44	BH45	BH48
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50 - 1.00	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592281	592282	592283	592284	592285

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
Asbestos Quantification ^(S)	%	< 0.001	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	7.9	8.2	7.4	6.9
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	1.1	0.6	0.4	0.6	0.3
Arsenic (As)	mg/kg	< 2	MCERTS	8	8	11	5	14
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	13	17	20	9	12
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	11	10	14	5	5
Lead (Pb)	mg/kg	< 3	MCERTS	35	17	33	14	9
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	4	6	16	< 3	6
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	42	43	73	27	25
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Wilson Bailey Geotechnical & Environmental Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Arborfield Parcel 02	TP / BH No	BH51	BH56	BH58	BH60	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	Depth (m)	0.25	0.25	0.50	0.50	
Reporting Date: 30/03/2022	DETS Sample No	592286	592287	592288	592289	

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	
Sample Matrix ^(S)	Material Type	N/a	NONE					
Asbestos Type ^(S)	PLM Result	N/a	ISO17025					
Asbestos Quantification ^(S)	%	< 0.001	ISO17025					
pH	pH Units	N/a	MCERTS	7.9	7.8	7.7	7.2	
TOC (Total Organic Carbon)	%	< 0.1	MCERTS	0.5	0.4	1.4	0.3	
Arsenic (As)	mg/kg	< 2	MCERTS	9	12	9	7	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (Cr)	mg/kg	< 2	MCERTS	18	10	10	6	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	9	13	15	< 4	
Lead (Pb)	mg/kg	< 3	MCERTS	18	23	160	11	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	8	12	< 3	< 3	
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	
Zinc (Zn)	mg/kg	< 3	MCERTS	37	64	37	16	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
 Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH2	BH4	BH5	BH6	BH8
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 1.00	0.50	0.25 - 0.50	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592266	592267	592268	592269	592270

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH10	BH11	BH13	BH15	BH20
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.50	0.50 - 1.00	0.25 - 0.50	0.50
Reporting Date: 30/03/2022	DETS Sample No	592271	592272	592273	592274	592275

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.15	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.31	0.20
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.26	0.18
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.13
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH23	BH27	BH30	BH39	BH37
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	1.00	0.50
Reporting Date: 30/03/2022	DETS Sample No	592276	592277	592278	592279	592280

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.16
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.21	< 0.1	< 0.1	0.40
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.21	< 0.1	< 0.1	0.34
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.21
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.25
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.17	< 0.1	< 0.1	0.33
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.12
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.20
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	2



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH36	BH38	BH44	BH45	BH48
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50 - 1.00	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592281	592282	592283	592284	592285

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Arborfield Parcel 02	TP / BH No	BH51	BH56	BH58	BH60	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	Depth (m)	0.25	0.25	0.50	0.50	
Reporting Date: 30/03/2022	DETS Sample No	592286	592287	592288	592289	

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.20	0.28	0.11	
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.17	0.18	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.67	1.57	0.34	
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.61	1.59	0.31	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.75	1.28	0.61	
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.26	1.11	< 0.1	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.62	1.70	0.48	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.33	0.78	0.24	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.44	1.22	0.35	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.54	0.97	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	0.25	0.75	< 0.1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	4.8	11.4	2.4	



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH2	BH4	BH5	BH6	BH8
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 1.00	0.50	0.25 - 0.50	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592266	592267	592268	592269	592270

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH10	BH11	BH13	BH15	BH20
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.50	0.50 - 1.00	0.25 - 0.50	0.50
Reporting Date: 30/03/2022	DETS Sample No	592271	592272	592273	592274	592275

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH23	BH27	BH30	BH39	BH37
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	1.00	0.50
Reporting Date: 30/03/2022	DETS Sample No	592276	592277	592278	592279	592280

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH36	BH38	BH44	BH45	BH48
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50 - 1.00	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592281	592282	592283	592284	592285

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH51	BH56	BH58	BH60
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.25	0.25	0.50	0.50
Reporting Date: 30/03/2022	DETS Sample No	592286	592287	592288	592289

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	31	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	35	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH2	BH4	BH5	BH6	BH8
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50 - 1.00	0.50	0.25 - 0.50	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592266	592267	592268	592269	592270

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH10	BH11	BH13	BH15	BH20
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.50	0.50 - 1.00	0.25 - 0.50	0.50
Reporting Date: 30/03/2022	DETS Sample No	592271	592272	592273	592274	592275

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH23	BH27	BH30	BH39	BH37
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50	1.00	0.50
Reporting Date: 30/03/2022	DETS Sample No	592276	592277	592278	592279	592280

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Arborfield Parcel 02	TP / BH No	BH36	BH38	BH44	BH45	BH48
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.50	0.25	0.50 - 1.00	0.25	0.50
Reporting Date: 30/03/2022	DETS Sample No	592281	592282	592283	592284	592285

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 22-02900	Date Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Wilson Bailey Geotechnical & Environmental L	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Arborfield Parcel 02	TP / BH No	BH51	BH56	BH58	BH60	
Project / Job Ref: None Supplied	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: None Supplied	Depth (m)	0.25	0.25	0.50	0.50	
Reporting Date: 30/03/2022	DETS Sample No	592286	592287	592288	592289	

Determinand	Unit	RL	Accreditation					
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
MTBE	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	



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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 22-02900

Wilson Bailey Geotechnical & Environmental Ltd

Site Reference: Arborfield Parcel 02

Project / Job Ref: None Supplied

Order No: None Supplied

Reporting Date: 30/03/2022

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
^ 592266	BH2	None Supplied	0.50 - 1.00	12.9	Brown sandy clay with stones
^ 592267	BH4	None Supplied	0.50	18.5	Brown sandy clay
^ 592268	BH5	None Supplied	0.25 - 0.50	13.2	Brown sandy clay with stones
^ 592269	BH6	None Supplied	0.25	14	Brown sandy clay
^ 592270	BH8	None Supplied	0.50	17.9	Brown sandy clay with stones
^ 592271	BH10	None Supplied	0.50	14.9	Brown sandy clay
^ 592272	BH11	None Supplied	0.50	13.5	Brown sandy clay
^ 592273	BH13	None Supplied	0.50 - 1.00	16.8	Brown sandy clay
^ 592274	BH15	None Supplied	0.25 - 0.50	15.9	Brown sandy clay
^ 592275	BH20	None Supplied	0.50	14.4	Brown sandy clay with stones
^ 592276	BH23	None Supplied	0.50	15.9	Brown sandy clay
^ 592277	BH27	None Supplied	0.25	15.3	Brown sandy clay with brick
^ 592278	BH30	None Supplied	0.50	14.1	Brown sandy clay
^ 592279	BH39	None Supplied	1.00	16.9	Brown sandy clay
^ 592280	BH37	None Supplied	0.50	14.7	Brown sandy clay
^ 592281	BH36	None Supplied	0.50	16.2	Brown sandy clay
^ 592282	BH38	None Supplied	0.25	15.3	Brown sandy clay with stones
^ 592283	BH44	None Supplied	0.50 - 1.00	14.8	Brown sandy clay with stones
^ 592284	BH45	None Supplied	0.25	13.6	Brown sandy clay
^ 592285	BH48	None Supplied	0.50	15.5	Brown sandy clay
^ 592286	BH51	None Supplied	0.25	17.1	Brown sandy clay
^ 592287	BH56	None Supplied	0.25	16.2	Brown sandy clay with stones
^ 592288	BH58	None Supplied	0.50	11.7	Brown sandy clay with concrete
^ 592289	BH60	None Supplied	0.50	11.9	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{U/S}

Unsuitable Sample ^{U/S}

^ no sampling date provided; unable to confirm if samples are within acceptable holding times



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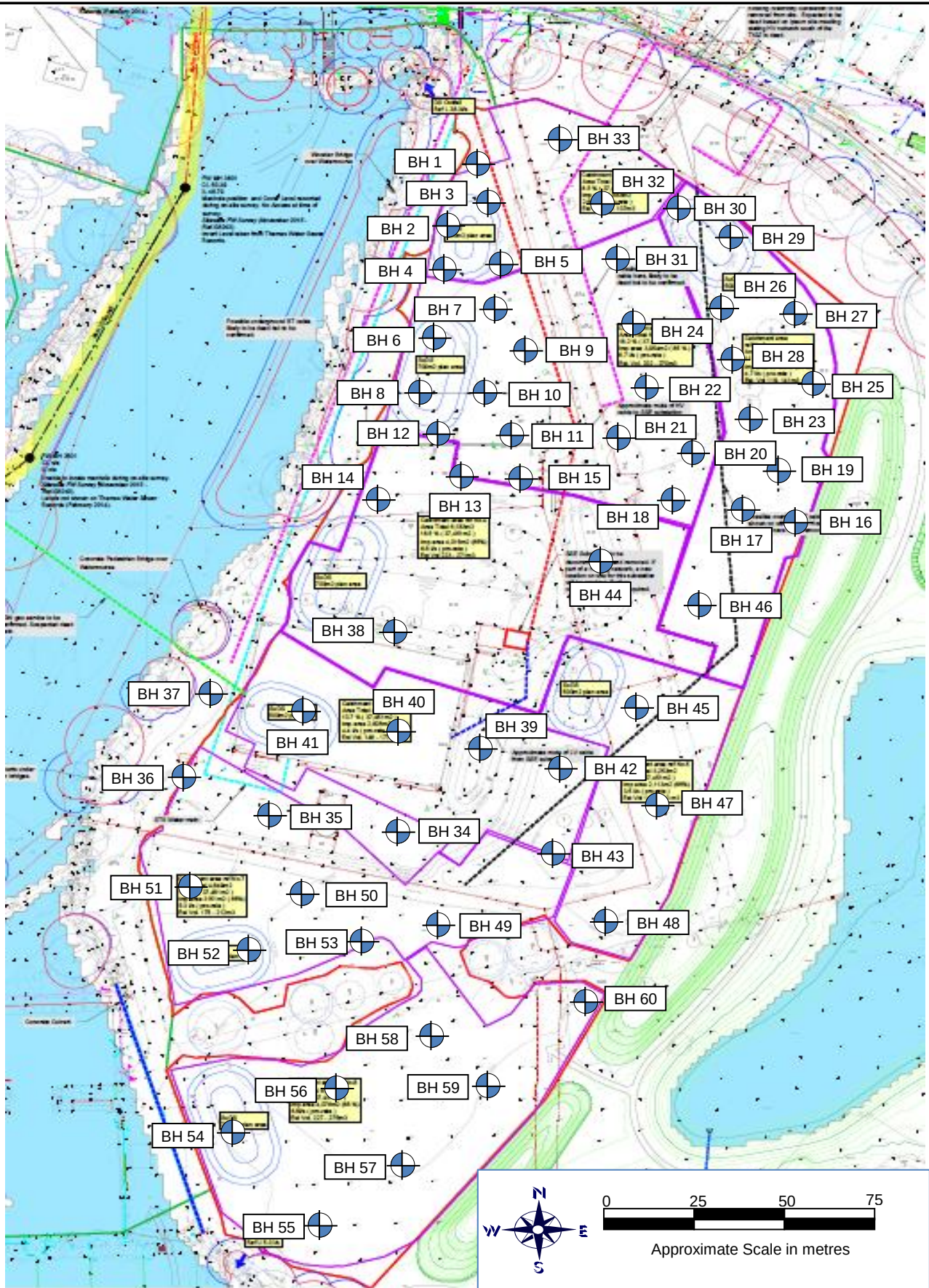
Soil Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 22-02900	
Wilson Bailey Geotechnical & Environmental Ltd	
Site Reference: Arborfield Parcel 02	
Project / Job Ref: None Supplied	
Order No: None Supplied	
Reporting Date: 30/03/2022	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

Site Arborfield Development Parcel O2

Client Crest Nicholson

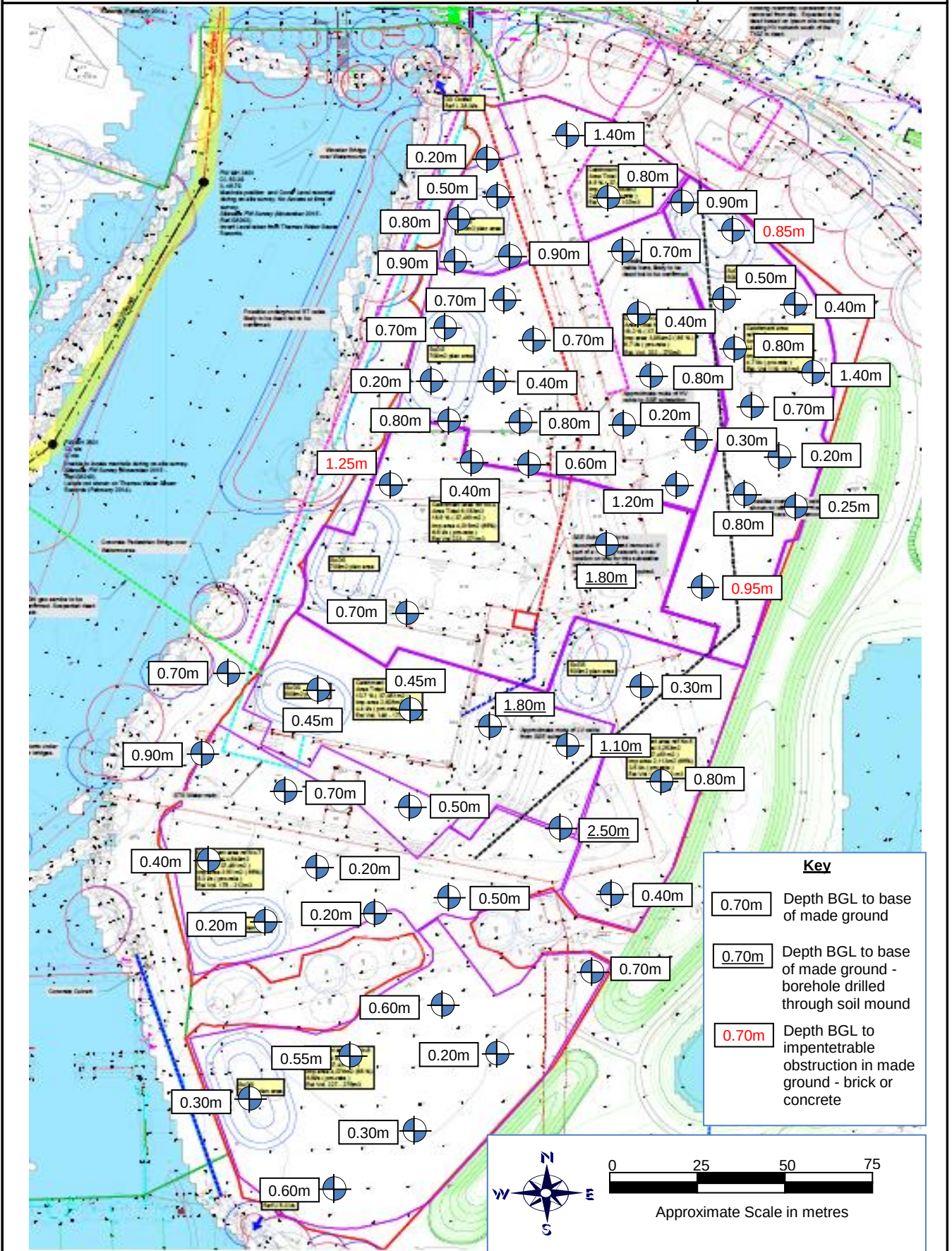


Site Plan - Locations

Site Arborfield Development Parcel O2

Client Crest Nicholson

Annotated with depth of made ground encountered in each location

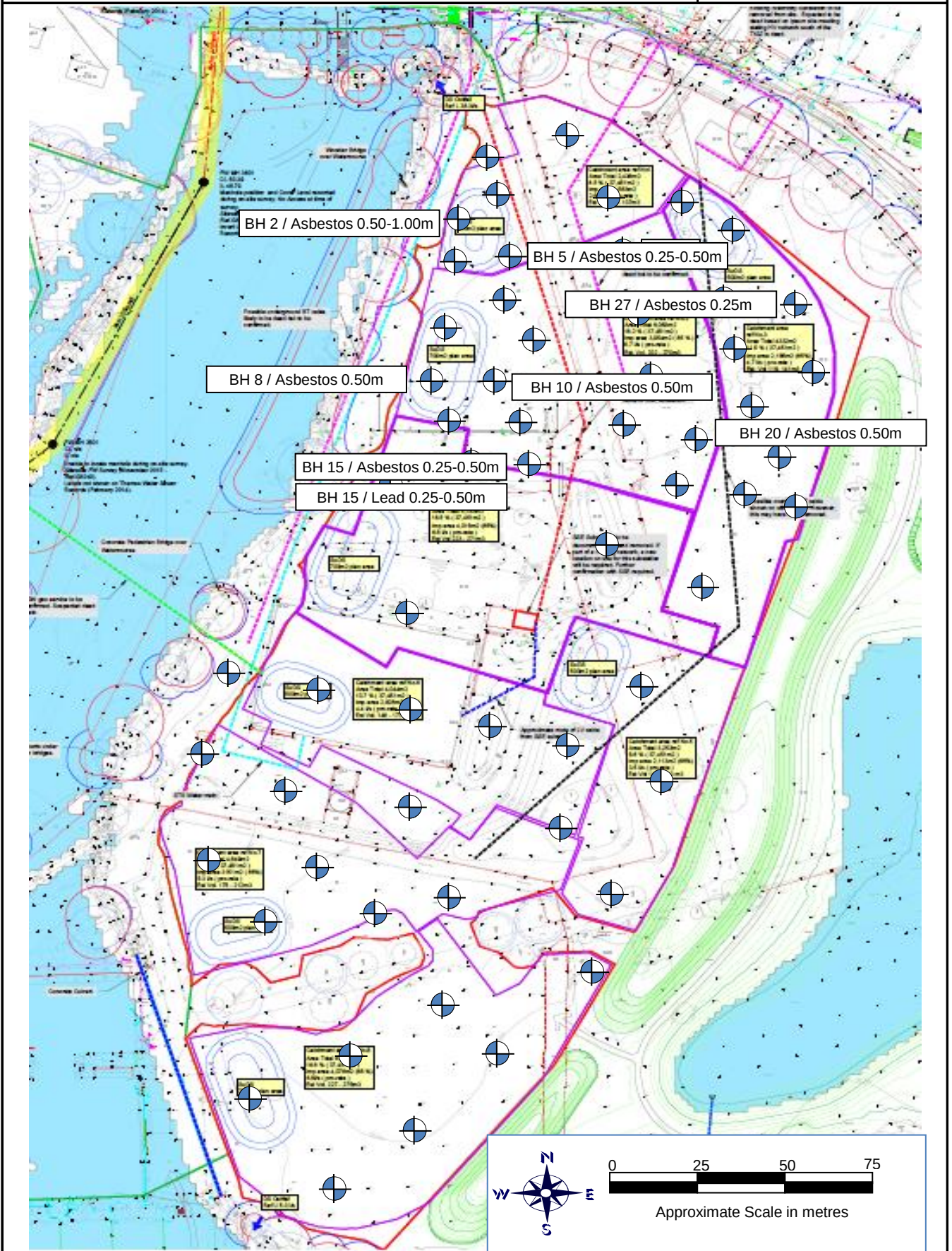


Site Plan - depth of MG

Site Arborfield Development Parcel O2

Client Crest Nicholson

Annotated with location where
contamination of concern has been
identified



Site Plan - Contamination

30 March 2024

Your ref:
Planning ref:
Our ref: J02407DB/c01

Matthew Fussell
Crest Nicholson Chiltern
Building 2
Abbey View
St Albans
AL1 2QU

Dear Mr Fussell,

RE: ARBORFIELD GARRISON DEVELOPMENT SITE PARCEL O2
REPORT ON POST TREE REMOVAL SUPPLEMENTARY GEOTECHNICAL
INVESTIGATION WORKS

Following on from our previous phase of desk study and ground investigation, this letter provides our report on a supplementary phase of ground investigation that has been carried out immediately following the felling of the various trees that were previously located across this proposed development parcel. These trees comprise a range of mature deciduous and coniferous trees together a section of mature hedge and brambles that relate to the previous and the historical military developments that have been constructed at this site. This letter report and the enclosed factual records are provided in accordance with our agreed standard terms, conditions and limitations.

Objective and Scope of work

These works have been carried out to provide a post tree removal summary of the ground conditions with specific reference to the moisture content profile in the immediate vicinity of the recently felled trees. This moisture content profiling has been carried out to determine the impact of these former trees with regards to desiccation of the prevailing sandy clay soils, as a design carried out on the basis of the guidance provided by the NHBC could indicate a requirement for piling to selected plots based upon generic tree ring assessments for medium plasticity clay soils.

These plot and tree specific post tree removal ground investigation works however provide a plot and tree specific assessment of the presence of any residual desiccation following the removal of the trees, such that they represent an actual worst case desiccation that can be used as the basis of the foundation design in place of an assessed potential tree influence based upon NHBC guidance.

In order to achieve a sufficiently robust assessment a series of 44 additional boreholes have been drilled in locations as indicated on the enclosed site plan in the immediate vicinity of remaining tree stumps. Soil samples have been recovered at 0.50m centres and locally 0.25m centres and submitted to an independently accredited geotechnical laboratory for moisture content and plasticity testing. A total of 169 moisture content samples have been tested together with 50 samples tested to determine clay plastic and liquid limits.

A selection of photographs is provided overleaf showing the location of boreholes in the immediate vicinity of the tree stumps following removal of the trees.



Ground Conditions

The boreholes encountered the anticipated ground conditions in that in each of the exploratory positions a variable depth of made ground was encountered overlying a natural profile of generally firm becoming stiff clay variably sandy clay soils of the London Clay.

Groundwater was not encountered other than occasional minor seepages within the made ground.

No visual indications of significant ground contamination were noted, although the clay soils encountered in Borehole No 104 were noted as being locally grey stained and to have a slight organic odour, which could be indicative of localised disturbance to the natural soils.

Foundation Design

The ground investigation has essentially confirmed the suitability of strip foundations to be used at this site. Foundations may be designed to found within the medium strength brown variably sandy clay soils of the London Clay at a minimum depth of 1.00 m below ground level and apply a net allowable bearing pressure of 125 kN/m², with a minimum width of 0.60m. Foundations should be mesh reinforced and careful inspection for any localised soft spots or areas of ground disturbance associated with historical development at this site should be carried out and any soft spots should be bypassed or locally removed and replaced with suitably compacted granular fill. If there is any doubt on site as to whether the ground is locally softened or has been locally disturbed, the foundation excavation should be inspected by a suitability qualified and experienced engineer from Wilson Bailey Partnership.

The moisture content profiling has confirmed that with the exception of the shallow soils encountered in Borehole Nos 136 and 141, no indications of the effects of trees has been encountered and the soils samples are not shown to be desiccated. Borehole Nos 136 and 141 were located in the vicinity of mature trees and the field observations are in accordance with the results of the laboratory testing that indicates that soil samples recovered from these locations are desiccated to a maximum depth of 1.25m and 1.00m respectively, with no indications of the effects of trees identified below 1.50m.

On the basis of the further work that has been carried out it is therefore considered that other than for Plot No 37 (and associated garage) and Plot Nos 117/118 (which are a pair of semi detached houses) additional deepening due to the effects of trees is not anticipated to be required and that standard depth traditional strip or trench fill foundations are anticipated to be viable.

For the affected plots identified above it is anticipated that deepening of foundation to a maximum of 1.50 m is at least locally required to ensure that the identified desiccated soils are effectively bypassed.

Notwithstanding the above, whilst the effects of trees has not been encountered as a wide spread issue of concern at this site such that additional deepening of foundation is not generally required, all foundations should extend beyond the zone of desiccation; in this respect it may be prudent to have foundation excavations inspected by a suitably experienced engineer if there is any doubt with regards to the effects of trees.

Excavations

It is likely that across the majority of the site shallow excavations for services and foundations within the near surface soils are likely to remain dry and broadly stable in the short term, although some localised instability and localised perched water seepages may be encountered within the made ground present at this site

Where personnel are required to enter excavations, a risk assessment should be carried out and temporary lateral support or battering of the excavation sides considered in order to comply with normal safety requirements.

Ground Floor Slabs

In view of the presence of made ground and medium plasticity trees, it is anticipated that there will be a requirement for suspended ground floor slabs over a void in accordance with NHBC guidelines at this site.

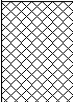
We trust that this letter provides sufficient information, although please do not hesitate to contact me should you have any queries or questions or wish to discuss any of the issues raised.

Yours sincerely
Wilson Bailey Partnership

Dominic Brightman
BSc MSc DIC FGS CGeol ARSM

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH101		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(0.25) 0.25	TOPSOIL Firm brown and dark orange-brown silty locally slightly sandy CLAY				
1.00	D2									
1.50	D3				(2.75)					
2.00	D4									
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH102		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				0.10	TOPSOIL				
						Firm dark orange-brown and brown silty locally slightly sandy CLAY with occasional roots and root hairs				
1.00	D2									
1.50	D3				(2.90)					
2.00	D4									
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH103			
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(0.70)	MADE GROUND (topsoil with fine brick fragments and roots)				
					0.70	Firm dark orange-brown and brown silty locally sandy CLAY				
1.00	D2									
1.50	D3									
2.00	D4				(2.30)					
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL Firm orange-brown and brown silty sandy CLAY with roots		
1.00	D2				(0.90)			
1.50	D3				1.20 (0.20) 1.40	Firm greyish green silty sandy CLAY with organic odour		
2.00	D4				(1.60)	Firm orange-brown and brown silty sandy CLAY		
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH104	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(1.20)	MADE GROUND (reworked brown sandy clay with brick and cement board)		
1.00	D2				1.20	Firm orange-brown and brownb silty sandy locally very sandy CLAY		
1.50	D3							
2.00	D4				(1.80)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH105	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.15) 0.15	TOPSOIL		
1.00	D2					Firm orange-brown and brown silty sandy CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				2.85 (0.15) 3.00	Firm grey slightly silty CLAY		
						Complete at 3.00m		

Remarks Groundwater not encountered - CONTROL BH located remotely from trees.							Scale (approx)	Logged By
							1:50	
							Figure No. J202407.BH106	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL Firm orange-brown, dark orange-brown and brown silty CLAY with roots		
1.00	D2							
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.							Scale (approx) 1:50	Logged By
							Figure No. J202407.BH107	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL with abundant root hairs		
					(0.60)	Firm yellowish brown silty slightly sandy CLAY		
1.00	D2				0.80 0.90	Firm yellowish brown silty slightly sandy CLAY with fine flint gravel		
1.50	D3					Firm brown silty slightly sandy CLAY		
2.00	D4				(2.10)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.							Scale (approx)	Logged By
							1:50	
							Figure No. J202407.BH108	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH109	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.40) 0.40	TOPSOIL with rootlets			
1.00	D2					Firm orange-brown and brown silty sandy CLAY with occasional roots			
1.50	D3				(2.40)				
2.00	D4								
2.50	D5								
3.00	D6				2.80 (0.20) 3.00	Firk grey silty CLAY			
						Complete at 3.00m			
Remarks Groundwater not encountered.								Scale (approx) 1:50	Logged By
								Figure No. J202407.BH109	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL		
1.00	D2					Firm dark orange-brown and brown silty slightly sandy CLAY with scattered fine flint gravel @ 1m		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH110	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL with rootlets		
1.00	D2					Firm dark orange-brown and brown silty sandy CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH111	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 07/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	TOPSOIL		
					(0.50)	Dark brown clayey silty SAND with rootlets		
					0.70	Firm pale yellowish orange-brown silty slightly sandy CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH112	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	TOPSOIL		
					(0.60)	Firm dark brown silty sandy CLAY with abundant root hairs		
1.00	D2				0.90	Firm pale brown silty sandy CLAY with bands of silty sand with abundant fine flint gravel @ 1.80m		
1.50	D3							
2.00	D4				(2.10)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH113	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 07/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked topsoil with tile fragments)		
1.00	D2				0.70	Firm dark orange-brown, yellowish brown and brown silty CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH114	

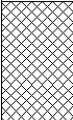


Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)	Client	Job Number J202407
		Location		Dates 07/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil with concrete) Firm orange-brown, dark orange-brown and pale grey mottled silty CLAY with roots and root hairs	 	
1.00	D2							
1.50	D3				(2.80)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.						Scale (approx) 1:50	Logged By
						Figure No. J202407.BH115	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH116	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	D1				(0.30)	MADE GROUND (reworked topsoil with brick)			
					0.30	Firm yellowish orange-brown, dark orange-brown and pale grey silty locally very sandy CLAY			
1.00	D2								
1.50	D3				(2.70)				
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.							Scale (approx)	Logged By	
							1:50		
							Figure No. J202407.BH116		

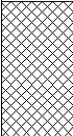
 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH117	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.80)	MADE GROUND (reworked topsoil with fine brick fragments)			
1.00	D2				0.80	Firm orange-brown and daek yellowish orange-brown silty CLAY			
1.50	D3								
2.00	D4				(2.20)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks								Scale (approx)	Logged By
								1:50	
								Figure No. J202407.BH117	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 07/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked brown sand with brick and tile)		
1.00	D2				0.70	Firm pale brown silty CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH118	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH119	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.90)	MADE GROUND (reworked topsoil with brick)			
1.00	D2				0.90	Firm brown silty CLAY			
1.50	D3								
2.00	D4				(2.10)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.								Scale (approx)	Logged By
								1:50	
								J202407.BH119	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	MADE GROUND (brown sandy clay with shingle)		
1.00	D2				0.70	Firm brown silty CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

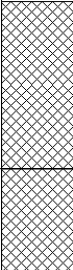
Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH120	

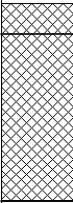


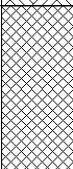
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30) 0.30	MADE GROUND (reworked topsoil)		
1.00	D2					Firm pale orange-brown and pale grey mottled becoming brown silty CLAY		
1.50	D3				(2.70)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks							Scale (approx) 1:50	Logged By
							Figure No. J202407.BH121	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH122	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(1.10)	MADE GROUND (reworked topsoil)			
1.00	D2				1.10	MADE GROUND (reworked clay)			
1.50	D3				(0.70)				
1.80					1.80	Firm orange-brown and pale grey silty slightly sandy CLAY			
2.00	D4								
2.50	D5				(1.20)				
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered. Borehole drilled on earthworks mound.								Scale (approx) 1:50	
								Logged By	
								Figure No. J202407.BH122	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH123		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)				
						MADE GROUND (reworked brown sandy clay with brick)				
1.00	D2				(1.10)					
					1.30	Firm pale yellowish orange-brown and pale grey silty CLAY				
1.50	D3									
2.00	D4				(1.70)					
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH124	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.25)	TOPSOIL			
					0.25	MADE GROUND (reworked brown sandy clay with gravel)			
1.00	D2				(1.15)				
1.50	D3				1.40	Firm pale brown silty slightly sandy CLAY			
2.00	D4				(1.60)				
2.50	D5								
3.00	D6								
					3.00	Complete at 3.00m			
Remarks								Scale (approx)	Logged By
								1:50	
								Figure No. J202407.BH124	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH125	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)			
					(0.50)	MADE GROUND (rewofrked brown sandy clay)			
					0.70	Firm pale orange-brown, pale grey becoming brown silty locally slightly sandy CLAY			
1.00	D2								
1.50	D3								
2.00	D4				(2.30)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks								Scale (approx) 1:50	Logged By
								Figure No. J202407.BH125	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 07/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.20) 0.20	MADE GROUND (reworked topsoil)		
					0.20	MADE GROUND (reworked bown sandy clay)		
1.00	D2				(0.80)			
1.50	D3				1.00	Firm pale brown and dark orange-brown silty sandy locally very sandy CLAY		
2.00	D4				(2.00)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH126	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.30)	MADE GROUND (reworked topsoil with concrete)		
					(0.40)	MADE GROUND (reworked brown sandy clay)		
1.00	D2				0.70	Firm orange-brown and brown slightrly silty CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00			
						Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH127	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.35) 0.35	MADE GROUND (reworked topsoil)		
1.00	D2					Firm brown dilty locally slightly sandy CLAY		
1.50	D3				(2.65)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

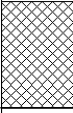
Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH128	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.50) 0.50	TOPSOIL with roots		
1.00	D2					Firm brown silty slightly sandy CLAY		
1.50	D3				(2.50)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered.							Scale (approx)	Logged By
							1:50	
							Figure No. J202407.BH129	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH130	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked topsoil with roots)			
1.00	D2				0.70	Firm brown silty slightly sandy CLAY with roots to 2m			
1.50	D3				(2.30)				
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.								Scale (approx)	Logged By
								1:50	
								Figure No. J202407.BH130	



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				0.50	MADE GROUND(reworked topsoil with rootlets)		
1.00	D2					Firm brown silty slightly sandy CLAY with occasional sand partings and rootlets to 1.50m		
1.50	D3				(2.50)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH131	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 08/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.40) 0.40	MADE GROUND (reworked topsoil and clay with tile)		
1.00	D2					Firm brown silty sandy CLAY with occasional sand partings		
1.50	D3				(2.60)			
2.00	D4							
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

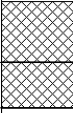
Remarks	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH132	



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 08/03/2024	Engineer DPB	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.70)	TOPSOIL with roots		
1.00	D2				0.70	Firm brown with pale grey mottled silty sandy CLAY		
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

Remarks Groundwater not encountered. 3 attempts - kept hitting roots.	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH133	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH134	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.40)	MADE GROUND (reworked topsoil)			
					0.40	MADE GROUND (crushed concrete)			
					(0.30)	Firm brown silty slightly sandy CLAY			
1.00	D2				0.70				
1.50	D3								
2.00	D4				(2.30)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.								Scale (approx) 1:50	Logged By
								Figure No. J202407.BH134	

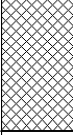
 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH135	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.50	D1		Water strike(1) at 0.01m.		(0.30)	MADE GROUND (reworked topsoil)		▽1	
					0.30 (0.20)	MADE GROUND (reworked brown clay with brick)			
					0.50	Firm orange-brown, dark orange-brown and pale grey mottled silty sandy locally very sandy CLAY			
1.00	D2								
1.50	D3								
2.00	D4								
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater seepage at surface.							Scale (approx) 1:50	Logged By	
							Figure No. J202407.BH135		



Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client	Job Number J202407
	Location	Dates 08/03/2024	Engineer DPB	Sheet 1/1

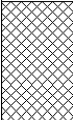
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.60) 0.60	MADE GROUND (reworked topsoil)		
1.00	D2					Firm brown silty slightly sandy CLAY		
1.50	D3							
1.75	D4				(2.40)			
2.00	D5							
2.25	D6							
2.50	D7							
3.00	D8				3.00	Complete at 3.00m		

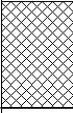
Remarks Groundwater not encountered. Desiccated to 1.30m - root hairs to 2.00m.	Scale (approx) 1:50	Logged By
	Figure No. J202407.BH136	

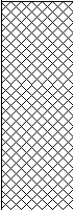
 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH137		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(0.40)	MADE GROUND (reworked topsoil with brick and concrete)				
					0.40	MADE GROUND (reworked brown clay with concrete)				
1.00	D2				(0.90)					
1.50	D3				1.30	Firm brown and pale brown silty slightly sandy CLAY				
2.00	D4				(1.70)					
2.50	D5									
3.00	D6									
										
					3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		
								Figure No. J202407.BH137		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH138	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.30)	MADE GROUND (reworked topsoil)			
					0.30	MADE GROUND (crushed concrete)			
					(0.30)	Firm brown silty slightly sandy CLAY			
1.00	D2								
1.50	D3								
2.00	D4				(2.40)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered. Roothairs to 2.50m.								Scale (approx) 1:50	Logged By
								Figure No. J202407.BH138	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH139	
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.40) 0.40	TOPSOIL with rootlets			
1.00	D2					Firm brown silty CLAY			
1.50	D3								
2.00	D4								
2.50	D5				(2.60)				
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered. Root hairs to 1.20m.								Scale (approx) 1:50	
								Logged By	
								Figure No. J202407.BH139	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH140		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.50	D1				(0.80)	MADE GROUND (reworked brown sandy clay with topsoil, brick and tarmac)				
1.00	D2				0.80	Firm brown silty slightly sandy CLAY				
1.50	D3									
2.00	D4				(2.20)					
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.							Scale (approx)		Logged By	
							1:50			
							Figure No. J202407.BH140			

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL					Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH141		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.50	D1				(0.70)	MADE GROUND (reworked topsoil and brown clay)			
1.00	D2				0.70	Firm brown silty CLAY			
1.50	D3								
2.00	D4				(2.30)				
2.50	D5								
3.00	D6				3.00	Complete at 3.00m			
Remarks Groundwater not encountered.								Scale (approx)	Logged By
								1:50	
								Figure No. J202407.BH141	

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH142		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(1.40)	MADE GROUND (brown sandy clay with topsoil and gravel)				
1.00	D2				1.40	Firm brown silty CLAY				
1.50	D3									
2.00	D4				(1.60)					
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks Groundwater not encountered.								Scale (approx)		Logged By
								1:50		

 WILSON BAILEY GEOTECHNICAL & ENVIROMENTAL						Site Arborfield Parcel O2 - Supplementary Focused SI		Number BH143		
Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407		
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water	
0.50	D1				(0.25)	MADE GROUND (reworked topsoil)				
					0.25	MADE GROUND (crushed concrete)				
					(0.40)	Firm pale brown and brown silty locally slightly sandy CLAY				
					0.65					
1.00	D2									
1.50	D3									
2.00	D4				(2.35)					
2.50	D5									
3.00	D6				3.00	Complete at 3.00m				
Remarks								Scale (approx)		Logged By
								1:50		



Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)		Client		Job Number J202407	
		Location		Dates 08/03/2024		Engineer DPB		Sheet 1/1	

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.50	D1				(0.40)	MADE GROUND (reworked topsoil)		
					0.40	MADE GROUND (reworked brown clay)		
					(0.30)			
					0.70	Firm brown slightly silty CLAY		
1.00	D2							
1.50	D3							
2.00	D4				(2.30)			
2.50	D5							
3.00	D6				3.00	Complete at 3.00m		

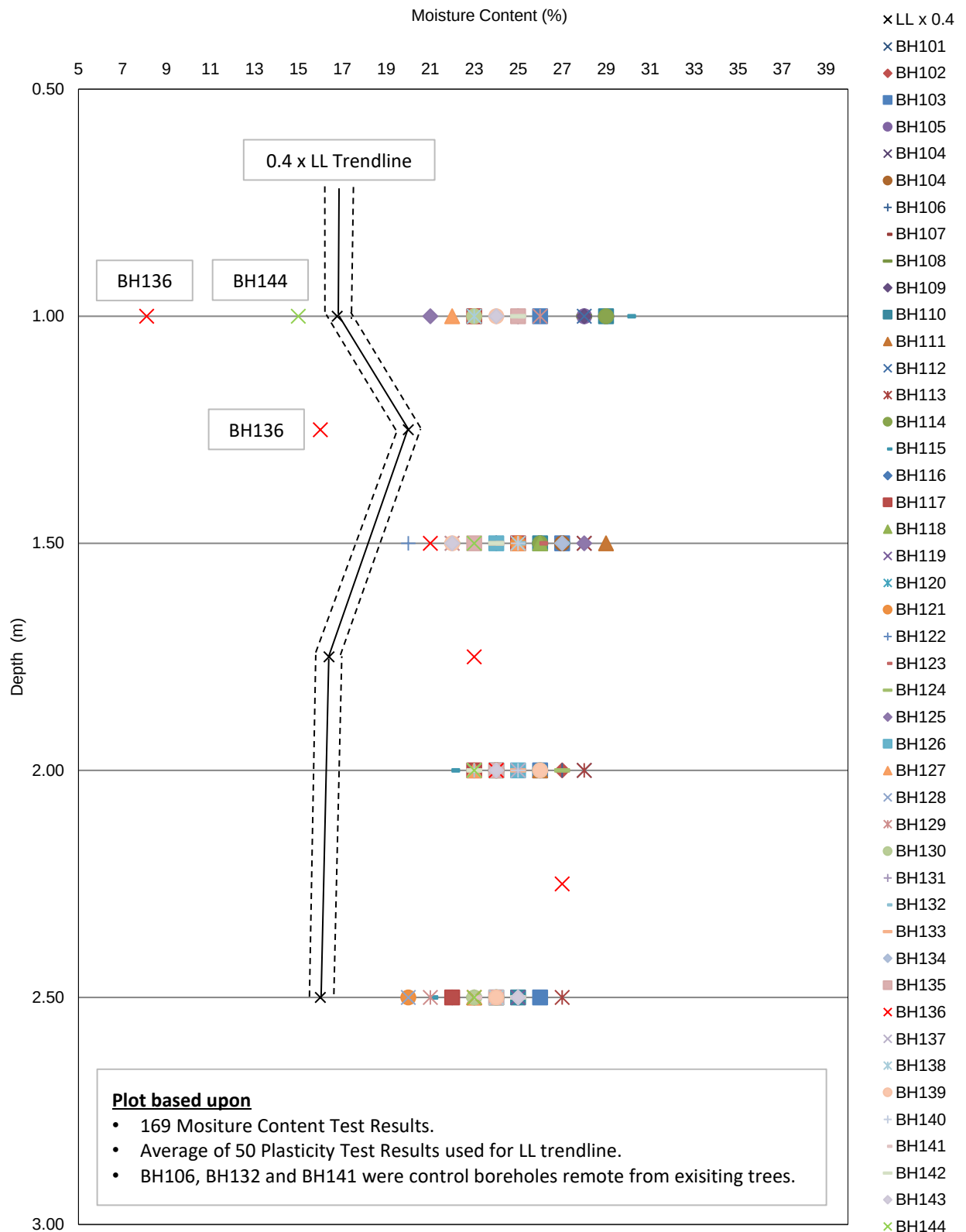
Remarks	Scale (approx)	Logged By
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Site Arborfield Development Parcel O2

Job Number
J02407

Client Crest Nicholson Operations

Sheet
1 / 1

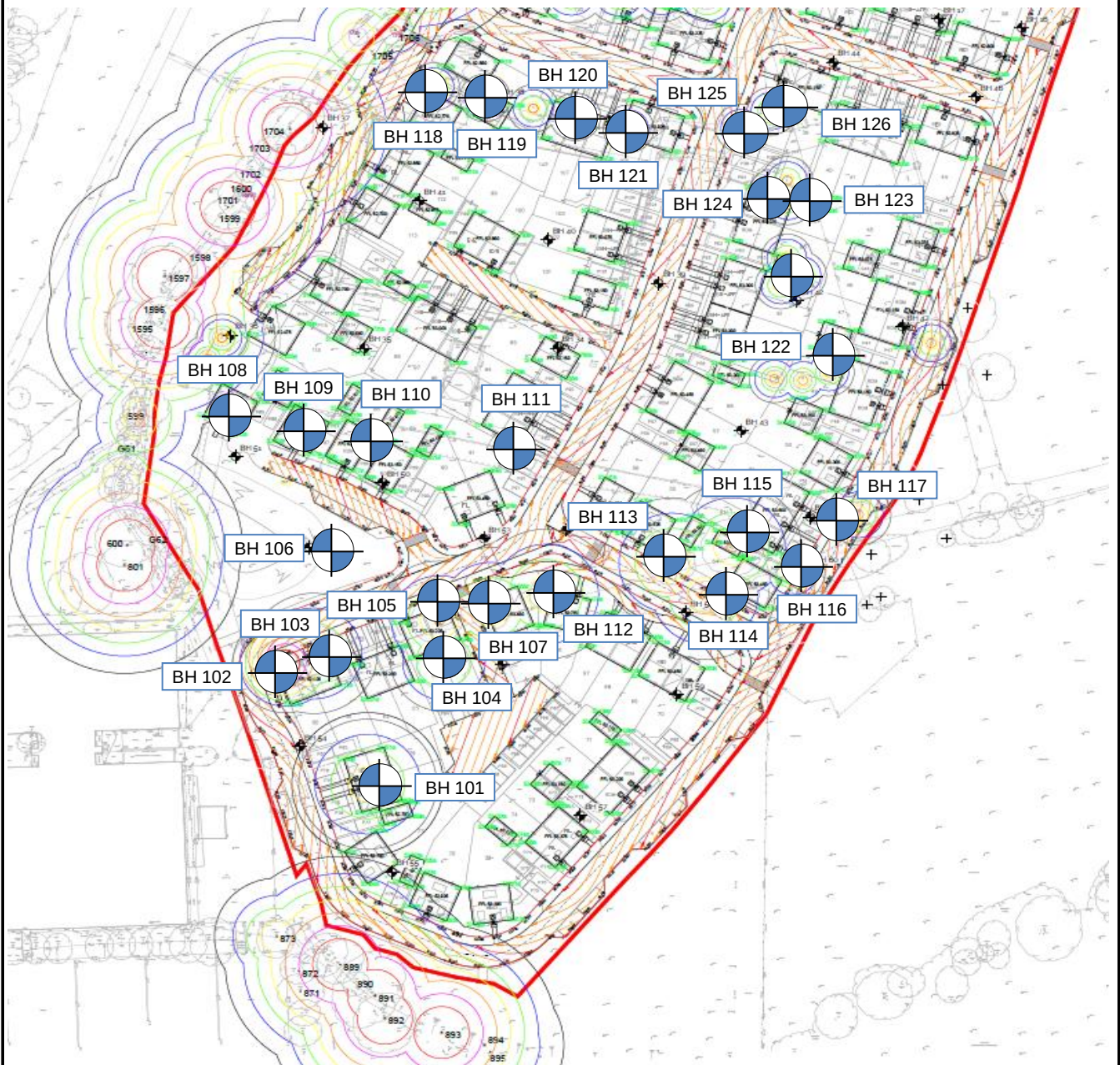


Notes;

A key indicator of desiccated clay is when the natural moisture content (NMC) is less than 0.4 x the Liquid Limit (LL)
 Results that indicate the presence of desiccated clay soils are labelled with the Borehole Reference

Site Arborfield Development Parcel O2

Client Crest Nicholson Operations



Site Plan based upon proposed layout with trees indicated

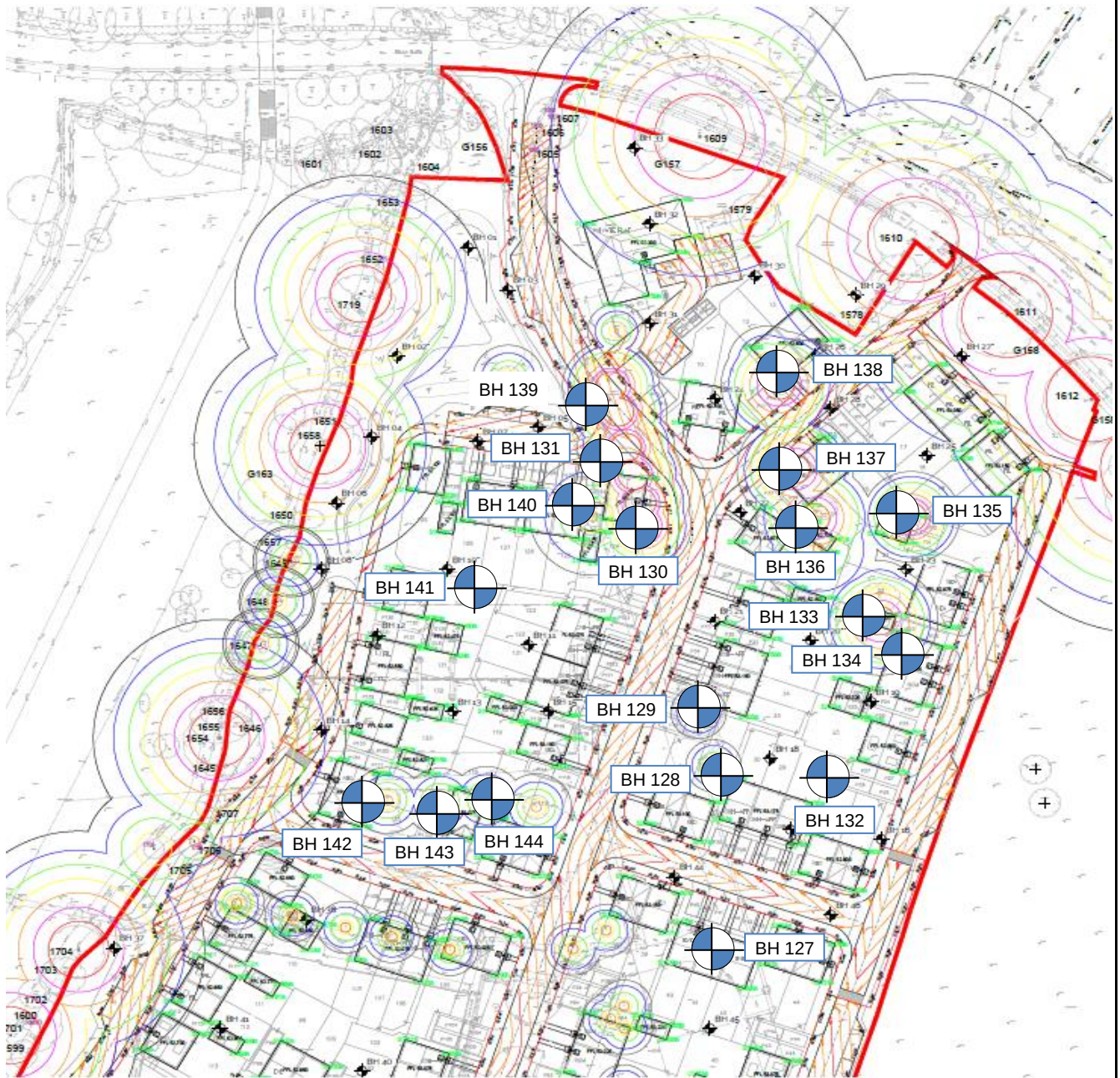


Approximate Scale in metres



Site Arborfield Development Parcel O2

Client Crest Nicholson Operations



Site Plan based upon proposed layout with trees indicated



Approximate Scale in metres

