A-squared Studio

52 Avenue Road

Basement Impact Assessment – 12 Unit

May 2022

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Project Name	52 Avenue Road
Project Number	1942
Client	DOMVS London
Document Name	Basement Impact Assessment – 12 Unit

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1942-A2S-XX-XX-RP-Y-0002-01	Second Issue Incorporating updated scheme.	01	AC	28.01.2022
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1942-A2S-XX-XX-RP-Y-0002-04	Fifth Issue Updated scheme drawings.	04	AC	09.05.2022

Contents

Appendices

1. Non-Technical Summary

1.1.1. The site is located at 52 Avenue Road, NW8 6HS.

1.1.2. The site is currently occupied by a two-storey L-shaped residential building with a swimming pool in the front and large garden to the rear. No existing basements are present and there are no shared Party Walls.

1.1.3. The proposed development works comprise the demolition of the existing building, excavation of a lower ground floor with a one-storey basement, and construction of three separate three-storey housing blocks across the site.

1.1.4. The proposed excavation is envisaged to be retained by a contiguous piled wall.

1.1.5. It is understood that the bulk excavation works and construction of permanent works elements will take place following the installation of all retention systems, i.e. adopting a *bottom-up* sequence / methodology.

1.1.6. Temporary propping / shoring measures are likely to be required at ground level, prior to proceeding with bulk excavation works. The props will increase the stiffness of the retention system during construction and reduce the risk of adversely affecting any neighbouring structures and/or third-party assets due to excessive ground movement.

1.1.7. The following assessments are presented in the current document:

- Screening.
- Scoping.
- Additional evidence/assessments (as required), including:
    - Architectural and structural drawings.
    - Ground movement assessment.
- Basement impact assessment.

1.1.8. The ground conditions beneath the site comprise:

- Made Ground to a depth of approximately 1.0m below ground level (mbgl).
- London Clay Formation to at least 40mbgl. The thickness and base of this stratum is not considered to be of engineering significance to the scheme as the anticipated *zone of influence* of the proposed works will remain within the London Clay.

1.1.9. The hydrogeological conditions at the site, relevant to the proposed development, are anticipated to comprise:

- Finite bodies of local perched groundwater within the Made Ground present above the London Clay.
- A hydrostatic porewater pressure distribution within the London Clay (from the surface of the formation).

1.1.10. The BIA has assessed land stability, and the impacts of the proposed development on neighbouring structures will be limited to *Category 1 – Very Slight*, in accordance with the Burland Damage Scale.

1.1.11. The BIA has not identified any hydrological impacts, as the site is not underlain by an aquifer. Groundwater has not been encountered within the Made Ground and the majority of the basement will be constructed within the London Clay Formation, which is classed as an unproductive stratum.

2. Introduction

2.1. Overview

2.1.1. A-squared Studio Engineers Ltd (A-squared) has been engaged by Heyne Tillett Steel Ltd (HTS) on behalf of DOMVS London to prepare a Basement Impact Assessment (BIA) for the proposed development works at 52 Avenue Road, NW8 6HS.

2.1.2. The purpose of this assessment is to consider the potential effects of the proposed development on the local hydrology, geology, and hydrogeology, and to determine the potential impacts to neighbours and the wider environment.

2.1.3. The location of the proposed development is shown in Figure 2.1.

Figure 2.1 Location of the proposed development (site boundary shown in red outline)

2.1.4. The development site is located within the jurisdiction of the London Borough of Camden.

2.1.5. The BIA has followed guidelines developed by the London Borough of Camden, which is considered to represent current industry best practice.

2.1.6. The BIA comprises the following elements:

- Screening.
- Scoping.
- Additional evidence/assessments (as required), including:
    - Architectural and structural drawings.
    - Ground movement assessment (GMA).
- Basement Impact Assessment.

2.2. Credentials

2.2.1. The BIA has been reviewed and approved by Alex Nikolic. Alex is a Chartered Member of the Institution of Civil Engineers (MICE) with over 20 years of industry experience in geotechnical design and construction of ground engineering works. Alex has attained post-graduate qualifications, including a Master of Science in Soil Mechanics (MSc DIC) from the Imperial College London and a Master of Studies (MSt Cantab) in Sustainable Development from the University of Cambridge. Alex was formerly the Director of Ground Engineering at Buro Happold Ltd.

2.3. Sources of Information

2.3.1. The following baseline data has been referenced to complete the BIA in relation to the proposed development:

- Heyne Tillett Steel, 52 Avenue Road, HTS Initial Site Considerations and Basement Study.
- A-squared, Phase I Desk Study Report (ref: 1942-A2S-XX-XX-RP-0001-01), dated November 2021.
- A2 Site Investigation, Factual Report (ref: 15721-A2SI-XX-XX-RP-X-0001-01), dated December 2021.
- A2 Site Investigation, Geotechnical Design Report (ref: 1942-A2SI-XX-XX-RP-Y-0002-00), dated December 2021.
- DOMVS London, 52 Avenue Road updated site plans.

2.4. Existing Development

2.4.1. The development site is located at 52 Avenue Road, NW8 6HS.

2.4.2. The site is generally flat with an existing ground level of approximately +46.0mOD.

2.4.3. The site is located at the base of a wider hillside setting, with ground elevation generally falling towards the southeast at an approximate slope of 1°.

2.4.4. The site is currently occupied by a two-storey residential building with no existing below-ground space or basement other than a swimming pool to the front of the property.

2.4.5. The existing building is assumed to be founded on shallow footings e.g. ground-bearing slabs or discrete strips/pads.

2.5. Neighbouring Properties and Infrastructure

2.5.1. The existing structure shares no Party Walls with other structures and is detached on all sides. The closest buildings to the development are 57 Elsworthy Road, a three-storey residential building to the north, and 50 Avenue Road, a three-storey residential building to the southeast.

2.5.2. The nearest listed structure is 29 Norfolk Road (Grade II Listed), located approximately 135m to the south of the site. This structure is not considered to be within the zone of influence of the proposed works.

2.5.3. Adjacent infrastructure / third party assets include Thames Water combined sewers which run along Avenue Road and Elsworthy Road, as shown in Figure 2.2.

Figure 2.2 Thames Water assets nearby the development location

2.5.4. Other asset owners with existing underground services that may be impacted by the proposed development include the following:

- London Borough of Camden and the Greater London Authority.
- BT (BT Group Plc) – Telecoms.
- UK Power Networks Ltd – Electricity distribution.
- National Grid Gas Plc – Gas.

2.5.5. Asset protection teams for the assets listed under Section 2.5.4 will be engaged as the design of the proposed development progresses. Where necessary, separate GMAs will be prepared in order to meet design assurance requirements.

2.6. Proposed Development

2.6.1. The proposed development sketches / drawings are included in Appendix B.

2.6.2. The proposed development at 52 Avenue Road comprises demolition of the existing building on site and construction of three separate three-storey structures, housing a total of 12 residential units, as shown in Figure 2.3.

2.6.3. A two-level basement is proposed as part of the development, with a maximum depth to formation level of approximately 9.5mbgl. The two-level basement will cover the entire proposed basement footprint (i.e. excavation to full depth over entire plan extent), see Figure 2.4.

Figure 2.3 Proposed ground floor plan

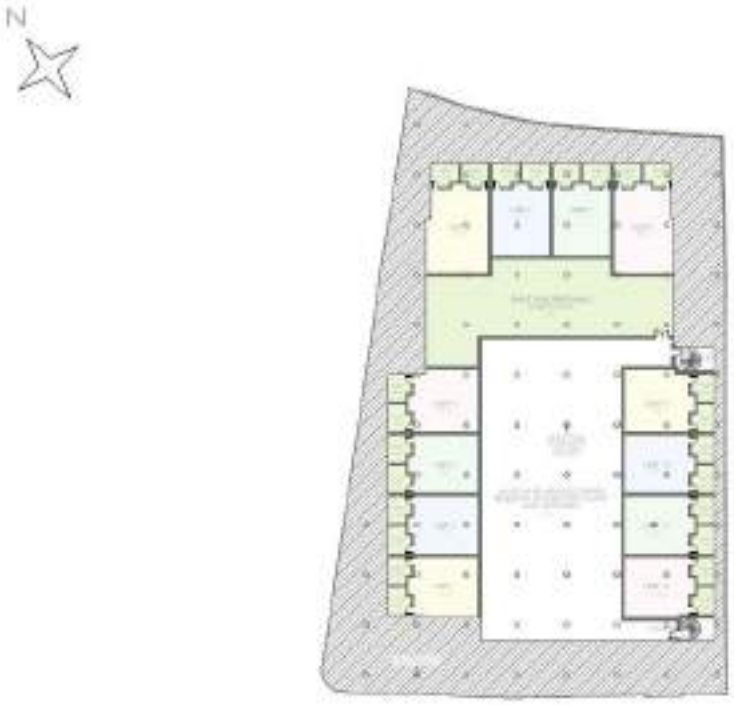

Figure 2.4 Proposed basement plan

2.6.4. The basement perimeter is proposed to be retained by a contiguous reinforced concrete piled wall.

2.6.5. At present, the building is envisaged to be founded on piles.

3. Screening

3.1. Subterranean (Groundwater) Flow, Screening Flowchart

Question		Response	Details
1a.	Is the site located directly above an aquifer?	No	The site is underlain by London Clay Formation with no superficial deposits. The London Clay Formation is an unproductive stratum.
1b.	Will the proposed basement extend beneath the water table surface?	No	No groundwater table was encountered during the site-specific ground investigation works.
2.	Is the site within 100m of a watercourse, well (used / disused) or potential spring line?	Yes	Figure 11 of the Camden GHHS shows the site to be within 100m of tributaries of the 'lost' River Tyburn. The closest surface water feature identified in the A-squared Desk Study report lies approximately 470m northwest of the site.
3.	Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site is not located within the catchment of the pond chains on Hampstead Heath.
4.	Will the proposed basement development result in a change in the proportion of the hard surfaced / paved areas?	Yes	The footprint of the proposed development is larger than that of the existing buildings.
5.	As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and / or SUDS)?	No	The proposed development will maintain the existing surface water discharge conditions.
6.	Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line?	No	The lowest level of the below ground space is above than the mean water level in any local pond.

3.2. Stability Screening Flow Chart

Question		Response	Details
1.	Does the existing site include slopes, natural or man-made, greater than 7 degrees (approximately 1 in 8)?	No	The site is founded on a slope with a gradient of less than 7 degrees.
2.	Will the proposed re-profiling or landscaping at the site change slopes at the property boundary to more than 7 degrees (approximately 1 in 8)?	No	There are no re-profiling / landscaping works proposed that will increase the slopes existing on site to gradients greater than 7 degrees.
3.	Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7 degrees (approximately 1 in 8)?	No	The neighbouring areas do not have a slope greater than 7 degrees.
4.	Is the site within a wider hillside setting in which the general slope is greater than 7 degrees (approximately 1 in 8)?	No	The site is located within a relatively flat wider setting, as shown in Figure 16 of the Camden GHHS.

Question		Response	Details
5.	Is the London Clay the shallowest strata at the site?	Yes	Site-specific ground investigation has proven that London Clay is the shallowest natural stratum on site.
6.	Will any trees be felled as part of the development and/or are any works proposed within any tree protection zones where trees are to be retained?	Yes	Trees will be felled as part of the proposed development; however, the proposed structures are not located within the respective root protection zones. A detailed Arboricultural Impact Assessment Report has been produced by Landmark Trees.
7.	Is there a history of seasonal shrink-swell subsidence in the local area and/or evidence of such effects at the site?	No	The London Clay strata is usually classified as having a high volume-change potential and hence can lead to seasonal shrink-swell subsidence where buildings are founded in desiccated soils. However, there is no specific evidence of subsidence having been experienced on site or in the immediate surrounding area.
8.	Is the site within 100m of a watercourse or a potential spring line?	Yes	Figure 11 of Camden GHHS shows the site to be within 100m of the tributaries of the 'lost' River Tyburn.
9.	Is the site within an area of previously worked ground?	No	The residential history of the site means that it has undergone little historic redevelopment. No areas of previously worked ground have been identified in the vicinity of the site.
10.	Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No	The site is underlain by the London Clay Formation which is an unproductive stratum. Dewatering will likely not be required during construction due to the relatively low permeability of the stratum.
11.	Is the site within 50m of the Hampstead Heath Ponds?	No	The site is not within 50m of the Hampstead Heath Ponds.
12.	Is the site within 5m of a highway or pedestrian right of way?	Yes	The site it bounded by Avenue Road to the south and Elsworthy Road to the west.
13.	Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes	The surrounding buildings are expected to be supported by shallow foundations and it is unknown whether they contain any basements or below-ground space at this time. The proposed development involves the excavation of a circa 9.5m deep basement. The proposed development is envisaged to be supported by piles.
14.	Is the site over (or within the exclusion zone of) any tunnels, e.g. railway lines?	No	The site is not located within or above the exclusion zone of any tunnels.

3.3. Surface Water and Flooding Screening Flowchart

Question		Response	Details
1.	Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site is not located within the catchment of the pond chains on Hampstead Heath.

Question		Response	Details
2.	As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No	The existing route is expected to be incorporated into the scheme.
3.	Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	Yes	The footprint of the proposed development is larger than that of the existing buildings.
4.	Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?	No	The proposed development will maintain the existing surface water discharge conditions.
5.	Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	The proposed basement will maintain the quality of surface water discharged from the site.
6.	Is the site in an area identified to have surface water flood risk according to either the Local Flood Risk Management Strategy or the Strategic Flood Risk Assessment or is it at risk from flooding, for example because the proposed basement is below the static water level of nearby surface water feature?	No	The site is classified as having a low risk of groundwater flooding at surface level.

3.4. Non-Technical Summary of Screening Process

3.4.1. The screening process identifies the following issued to be carried forward to scoping for further assessment:

- The site is within 100m of the 'lost' River Tyburn.
- The proposed development may result in a change in the proportion of the hard surfaced/paved areas.
- There may be a risk of seasonal shrink-swell subsidence within the London Clay Formation due to removal of trees, excavation, and seasonal variations in the groundwater table.
- The proposed basement excavation is adjacent to public roads and neighbouring properties and will increase the differential depth of foundations relative to neighbouring properties.

3.4.2. The other potential concerns considered with the screening process have been demonstrated to be not applicable or not significant when applied to the proposed development.

4. Scoping

4.1. Subterranean Flow: The site is within 100m of the 'lost' River Tyburn.

Hazards

4.1.1. The groundwater flow regime of the closest watercourses (tributaries of the "lost" Tyburn River) may be affected by the proposed basement excavation.

Potential Impacts

4.1.2. Increase or decrease in the flow from the watercourse.

4.1.3. Changes in groundwater head resulting in stress changes or slope instability within the ground.

4.1.4. Ground movements associated with the stress changes in the ground causing damage to existing properties.

Mitigating Factors

4.1.5. The site-specific ground investigation has confirmed that the site is predominantly underlain by London Clay, which is incapable of supporting groundwater flow and will be unaffected by changes in flow of local watercourses.

Assessments and Further Actions

4.1.6. It is considered that there is a negligible risk of impacting the surrounding groundwater flow regime of the nearby lost river. No further action is considered necessary.

4.2. Subterranean Flow: The proposed development may result in a change in the proportion of the hard surfaced/paved areas

Hazards

4.2.1. The proposed building footprint is larger than that of the existing structure.

Potential Impacts

4.2.2. A reduction in the ability for water to drain through the site.

4.2.3. An increase in groundwater flow in a downwards gradient from the site.

Mitigating Factors

4.2.4. The site-specific ground investigation has confirmed that the London Clay is the shallowest stratum onsite. Due to its very low permeability, the London Clay is unable to provide significant drainage and the development is unlikely to alter the site from its current run-off condition.

4.2.5. The proposed scheme will include a robust drainage strategy / system to accommodate any excess surface water runoff.

Assessments and Further Actions

4.2.6. It is considered that there is a negligible risk of impacting the surrounding surface water flow regime. No further action is considered necessary.

4.3. Stability: There may be a risk of seasonal shrink-swell subsidence within the London Clay Formation due to removal of trees, excavation, and seasonal variations in the groundwater table.

Hazards

4.3.1. Seasonal shrinking and swelling of the London Clay Formation underlying the site.

4.3.2. Swelling / heave effects due to the removal of trees.

4.3.3. Increased surface water into the local drainage system due to a reduction in uptake from vegetation.

Potential Impacts

4.3.4. Additional ground instability resulting from the removal of trees in the zone of influence of the proposed development.

4.3.5. Properties downstream of the proposed development may be subjected to an increase in surface water flow.

Mitigating Factors

4.3.6. No evidence of desiccation was observed in the London Clay during the site-specific ground investigation works.

4.3.7. The proposed development will be supported by discrete pile caps with suspended slabs. Void formers or proprietary heave mitigation products may be used to manage this risk.

4.3.8. Any potential changes to the surface water run-off volume are anticipated to be mitigated by the proposed drainage system.

Assessments and Further Actions

4.3.9. It is considered that the overall risk of shrink-swell subsidence is minimal, the piled basement box will provide a robust solution which is extends well below the root depth of the trees. No further action is considered necessary beyond normal design best practices.

4.4. Stability: The proposed basement excavation is adjacent to public roads and neighbouring properties and will increase the differential depth of foundations relative to neighbouring properties.

Hazards

4.4.1. The proposed excavation is adjacent to public roads and neighbouring structures.

Potential Impacts

4.4.2. Collapse of the excavation and associated impact on the surrounding roads.

4.4.3. Damage to the road surface or buried surfaces within the public road easement due to excessive ground movements.

Mitigating Factors

4.4.4. Deposits underlying the development are largely natural and are anticipated to be relatively stable, i.e. the London Clay Formation.

4.4.5. Several basements of similar depths and scale have been successfully constructed throughout London within similar geological conditions and urban settings.

4.4.6. The proposed basement is offset from the neighbouring properties and adjacent public roads.

4.4.7. The scheme basement design and temporary works proposals shall be developed in a robust fashion and in line with current industry best practice, in order to limit the impact of ground movements resulting from basement construction.

Assessments and Further Actions

4.4.8. A ground movement assessment has been performed to determine the impact of proposed excavation works on the neighbouring properties. The assessment shows a maximum damage classification of *Category 1 – Very Slight* for the neighbouring properties in accord with the Burland Scale.

4.4.9. Various additional ground movement assessments may be required to determine the impact of the works on the surrounding buried utilities and other third-party assets surrounding the site. These assessments should confirm anticipated damage categories in accordance with performance limits set by the relevant third-party asset protection teams.

4.4.10. The design of the embedded pile wall will be carried out by an appropriately experienced and qualified specialist / engineer / ground engineering contractor in accordance with relevant Eurocodes / British Standards, Codes of Practice, and industry standards. The design will allow for appropriate surcharging behind the embedded walls to accurately reflect the type and intensity of traffic and building loads.

5. Site Investigation

5.1.1. A site-specific ground investigation was carried out in November 2021 by A2 Site Investigation (A2-SI). The findings of this investigation have been included as part of Appendix A.

5.1.2. The completed works comprised the following:

- 2no. cable percussion boreholes to 40.0mbgl.
- 6no. window sampler boreholes to a maximum depth of 5.0mbgl.
- 4no. hand-excavated trial pits.
- Standard penetration testing (SPTs) within each exploratory hole location.
- Ground gas and groundwater monitoring.
- Geotechnical laboratory testing in the form of index/classification testing and undrained triaxial testing.

5.1.3. The locations of the ground investigation positions are shown in Figure 5.1.

Taken from *52 Avenue Road Factual Report* prepared by A2-SI, dated November 2021 (ref: 15721-A2SI-XX-XX-RP-X-0001-01).

Figure 5.1 A2-SI exploratory hole positions

5.1.4. The ground conditions encountered onsite are summarised in Table 5.1. The boreholes remained dry throughout 3no. monitoring rounds.

Table 5.1 Encountered stratigraphic profile

Stratum	Depth Encountered (mbgl)	Thickness (m)	Description
Made Ground	0.0	0.7	Firm grey-brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to sub-angular of brick, concrete, or flint.

London Clay	0.7	> 39.3	Firm mottled grey slightly sandy, silty CLAY.

6. Construction Methodology / Engineer Statements

6.1. Outline Temporary and Permanent Works Proposals

6.1.1. The outline basement construction proposal is to construct the basement using a *bottom-up* sequence / methodology.

6.1.2. Standard means and methods of excavation are expected to be suitable to excavate the basement, based upon the ground conditions proven by means of ground investigation works.

6.1.3. The basement excavation will be restrained by a contiguous piled wall.

6.1.4. Design of the retaining walls and temporary propping shall be carried out in accordance with the relevant Eurocodes/British Standards, non-conflicting codes of practice, and associated design best practice.

6.1.5. It is anticipated that any potential ground water inflow during excavation arising from finite bodies of perched ground water can be suitably managed/mitigated with localised pumping if/where required.

6.2. Ground Movement and Damage Impact Assessment

6.2.1. A GMA has been carried out in accordance with CIRIA C760 and Burland assessment criteria and takes into account the construction methodology and site-specific ground and groundwater conditions.

6.2.2. All structures / properties within the zone of influence of the proposed development have been assessed.

6.2.3. The following assumptions have been made within the GMA:

- The buildings included in the GMA are assumed to be founded on ground surface.
- The walls of the above-mentioned buildings are assumed to behave as equivalent beams.
- The proposed basement excavation is assumed to adequately propped.

6.2.4. The ground movements resulting from the works comprise deformations arising from the following mechanisms:

- Installation of the contiguous piled wall.
- Bulk excavation works.
- Heave and settlements due to the unloading / load redistribution of London Clay Formation.

6.2.5. The following structures were assessed, having been identified as falling within the zone of influence of the proposed development:

- 50, 48, 65, 69 and 71 Avenue Road.
- 56, 72, 68, 51A, 53, 53A, 53B, 55, 55B, and 57 Elsworthy Road.

6.2.6. The evaluated potential damage/impact is contained within *Category 1 – Very Slight,* in accordance with the Burland Scale.

6.2.7. The expected ground movements resulting from the proposed works are proposed to be limited by means of temporary propping, which is planned to be installed during the basement excavation phase.

6.2.8. The following mitigation measures are proposed to reduce ground movements and damage:

- Design of the embedded retaining wall and temporary propping measures shall be carried out in accordance with the relevant Eurocodes, non-conflicting codes of practice, and associated design best practice.
- Frequent monitoring of neighbouring properties to be carried out during excavation, to validate ground movement predictions against reality.
- Development of a monitoring-trigger-action plan that identifies trigger levels, responsible personnel, and actions to be followed in the event of a trigger level exceedance.
- Incorporating stiff, high-level props into the temporary works design of the basement excavation in order to provide a high stiffness wall. Design details regarding minimum wall flexural stiffness, prop stiffness, and arrangement, shall be defined as part of detailed design development.
- Designated areas for stacking and storing materials behind the embedded retaining wall should be identified. These should be located away from sensitive structures. The design of the retaining wall should incorporate an appropriate surcharge load to the rear of the wall, to capture effects of stacking and storing materials, vehicle traffic, etc.
- The GMA did not consider the impact of the proposed development on existing buried utilities (e.g. Thames Water sewer assets). It is expected that these assets will be assessed (if applicable to the proposed works) following engagement of the asset owner and direction from the asset protection team, with regards to establishing limiting performance criteria.

6.3. Control of Construction Works

6.3.1. Following the selection of a Principal Contractor, a Construction Method Statement should be developed, which will cover the items outlined in this section in detail.

6.3.2. Work method statements developed for main stages of the construction works, outlining the means and methods of safely carrying out the works.

6.3.3. Details of temporary propping and temporary works, required to ensure structural stability is maintained throughout demolition and excavation operations.

6.3.4. Construction traffic management plans.

6.3.5. Detailed development of structural and environmental monitoring strategy, developed to control construction works and maintain movements/damage impacts within the predicted limits and monitor environmental impacts, including:

- A structural monitoring layout plan of instrumentation/survey points/critical sections.
- Programme/frequency of monitoring.
- Trigger values derived for each of the structures within the zone of influence of the proposed works.
- Contingency actions and project team lines of responsibility.

7. Basement Impact Assessment

7.1. General

7.1.1. The Conceptual Site Model (CSM) is described below:

- The ground conditions of the site comprise a nominal thickness of Made Ground overlying the London Clay Formation.
- Groundwater was not encountered during the GI works, however finite bodies of local perched groundwater may be present within the Made Ground above the London Clay Formation, and it is assumed that the pore water pressure distribution within the London Clay Formation will be approximately hydrostatic from the surface of the formation.
- The site is flat and located within a relatively flat surrounding area.
- The current development comprises a two-storey 'L-shaped' residential building with a swimming pool to the front and garden to the rear. No other below-ground spaces are present and there are no shared Party Walls.
- The proposed development comprises the demolition of the existing building, excavation of a one- to two-level basement, and construction of three new three-storey residential structures.
- The proposed structure and excavation are envisaged to be supported by piles and a contiguous piled wall, respectively.
- Neighbouring buildings are assumed to be founded near-surface.
- The nearest public highway is located approximately 5m from the proposed excavation.
- The proposed development may result in ground movements in the vicinity of the neighbouring properties and adjoining public highways. These ground movements will be managed by appropriate construction means and methods such as temporary propping/shoring and controlled excavation operations.

7.2. Land Stability / Slope Stability

7.2.1. It is assumed that all new substructure elements will be founded on the London Clay Formation, which is considered to be a suitable founding stratum.

7.2.2. No evidence of desiccation or shrink/swell was observed within the London Clay during the site-specific ground investigation works. However, there is still a residual risk of movement and damage to this development due to volumetric changes of the London Clay. The scheme design development will consider heave mitigation measures (where appropriate) and the relevant soil structure interaction mechanisms.

7.2.3. A ground movement assessment has concluded that ground movements caused by excavation and construction of the proposed development will be limited. The upper bound damage category for surrounding structures within the zone of influence of the proposed development has been assessed as *Category 1 – Very Slight* in accordance with the Burland Scale.

7.2.4. The BIA has concluded that the risks to the adjacent properties, slopes, and infrastructure (including ultimate and serviceability limit state considerations) is limited and will be mitigated in a reasonable fashion as part of design development.

7.3. Hydrology and Groundwater Flooding

7.3.1. The BIA has concluded that there is a very low risk of groundwater flooding.

7.3.2. The BIA has concluded that there are no impacts to the wider hydrogeological environment as a result of the proposed development.

7.4. Hydrology, Surface Water Flooding and Sewer Flooding

7.4.1. The BIA has concluded that there is a very low risk of surface water flooding.

7.4.2. The BIA has concluded that there are no impacts to the wider hydrological environment.

Appendix A: Ground Investigation Report

A2 Site Investigation

52 Avenue Road

Geotechnical Design Report

May 2022

15721-A2SI-XX-XX-RP-Y-0002-04

Project Name	52 Avenue Road
Project Number	15721
Client	DOMVS London
Document Name	Geotechnical Design Report

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15721-A2SI-XX-XX-RP-Y-0002-01	01	Including 450mm pile diameters	01	AC	28/01/2021
15721-A2SI-XX-XX-RP-Y-0002-02	02	Updated drawings	02	AC	28/01/2021
15721-A2SI-XX-XX-RP-Y-0002-03	03	Updated for 12-unit scheme	03	AC	05/05/2022
15721-A2SI-XX-XX-RP-Y-0002-04	04	Updated scheme drawings.	04	AC	09/05/2022

Contents

Appendices

1. Introduction

A2 Site Investigations Ltd (A2-SI) has been engaged by Heyne Tillett Steel (HTS) on behalf of DOMVS London to produce a Geotechnical Design Report (GDR) for the proposed site development at 52 Avenue Road, NW8 6HS (herein referred to as the 'site').

1.1. Study Aims and Objectives

The scope of this report comprises of the following elements:

- Technical assessment and interpretation of ground investigation data carried out for geotechnical design parameters.
- Outline assessment of shallow and deep foundations (ULS and SLS performance, and groundwater considerations including uplift and heave mitigation).
- Earth retention system typology assessment.
- General buildability and earthworks considerations.
- Geo-environmental assessment based on the ground investigation results, proposed development plans and Phase 1 Desk Study for the proposed development.

The geo-environmental assessment has been undertaken in general accordance with *Land Contamination Risk Management (LCRM)* guidance, published by the Environment Agency on the UK Government website. This GDR presents a Generic Quantitative Risk Assessment (GQRA) and updated Conceptual Site Model (CSM) for the proposed development in the context of the *National Planning Policy Framework* (NPPF) and *The Building Regulations 2010, Approved Document C - Site preparation and resistance to contaminants and moisture (2004 Edition incorporating 2010 and 2013 amendments)*. The GDR includes an assessment of whether there are any unacceptable risks (ref. *LCRM* guidance) in relation to the proposed development which need to be further addressed.

1.2. Information Sources

The principal sources of information provided by the project team, which have informed the preliminary assessment presented herein, include the following:

- Phase I Desk Study Report for 52 Avenue Road produced by A-squared (ref. 1942-A2S-XX-XX-RP-Y-0001-01), dated November 2021, included in Appendix E.
- Factual Report for 52 Avenue Road produced by A2SI (ref. 15721-A2SI-XX-XX-RP-X-0001-01), dated December 2021, included in Appendix C.
- Drawings provided by HTS (selected drawings / figures are included herein).

2. The Site and Proposed Development

2.1. Development Location and Current Site Use

The development site is located at 52 Avenue Road, London, NW8 6HS as shown in Figure 2.1. The approximate National Grid reference for the site is 527010E, 183850N and the site footprint covers approximately 0.28 hectares. The approximate ground surface elevation at the site is 46m above Ordnance Datum (mOD) and at a gradient of <1°. The development site falls within the administrative boundaries of the London Borough of Camden and currently houses a two-storey L-shaped residential building with a large garden.

The existing superstructure is anticipated to comprise of masonry or timber walls, with timber floors and roofing frame with a load-bearing masonry façade.

The foundations are expected to be shallow strip footings below the walls and pads underneath any internal columns and core.

The current land uses within a 250m radius surrounding the site are summarised in Table 2.1.

Figure 2.1 Location of the proposed development (red-line marks the site boundary)

Table 2.1 Surrounding land uses summary

Bearing from Site	Features directly adjacent to the site boundary	Other identified land uses and key structures
North	57 Elsworthy Road – a three-storey residential property with a garden.	Swiss Cottage School Development & Research Centre – 110m northeast. The UCL Academy – 210m northeast. Marriott Hotel – 250m north.
South	Avenue Road – a single carriageway road of approximately 10m in width.	Residential properties with gardens – 15m south. Electric car charging stations – 110m south closest.

Bearing from Site	Features directly adjacent to the site boundary	Other identified land uses and key structures
East	50 Avenue Road – a three-storey residential property with a garden.	Primrose Hill public park – 100m east.
West	Elsworthy Road – a single carriageway road of approximately 10m in width.	81 Avenue Road: a residential property with an outdoor swimming pool – 100m west.

2.2. Site History

A review of historical maps as part of the Phase I Desk Study indicates that the site was split in to two properties from as early as 1871, with extensions being added to both properties until 1960. From then, both properties were demolished, and a large structure was constructed on the northern side of the site. In 1991, part demolition of the building took place, from which point the site has existed in its current form. All on-site buildings been for use as residential properties.

2.3. Proposed Scheme

The site currently houses a two-storey L-shaped residential building with a large, open garden and a swimming pool to the south of the building. The scheme comprises the demolition of the current structure on-site, excavation of a two-level, approximately 9.5m-deep basement and construction of 12 housing units over three separate three-storey blocks. Each unit will have a private garden to the rear and a communal garden space to the front. The proposed building elevations are shown in Figure 2.2 and the proposed ground floor plan is shown in Figure 2.3. The basement level will extend beneath and between all three residential blocks, shown in Figure 2.4.

The basement will be used as a health and wellness centre with plant space above. The scheme also comprises 62 boreholes over the extent of the site including the basement to power ground source heat pumps for heating and cooling of the whole complex.

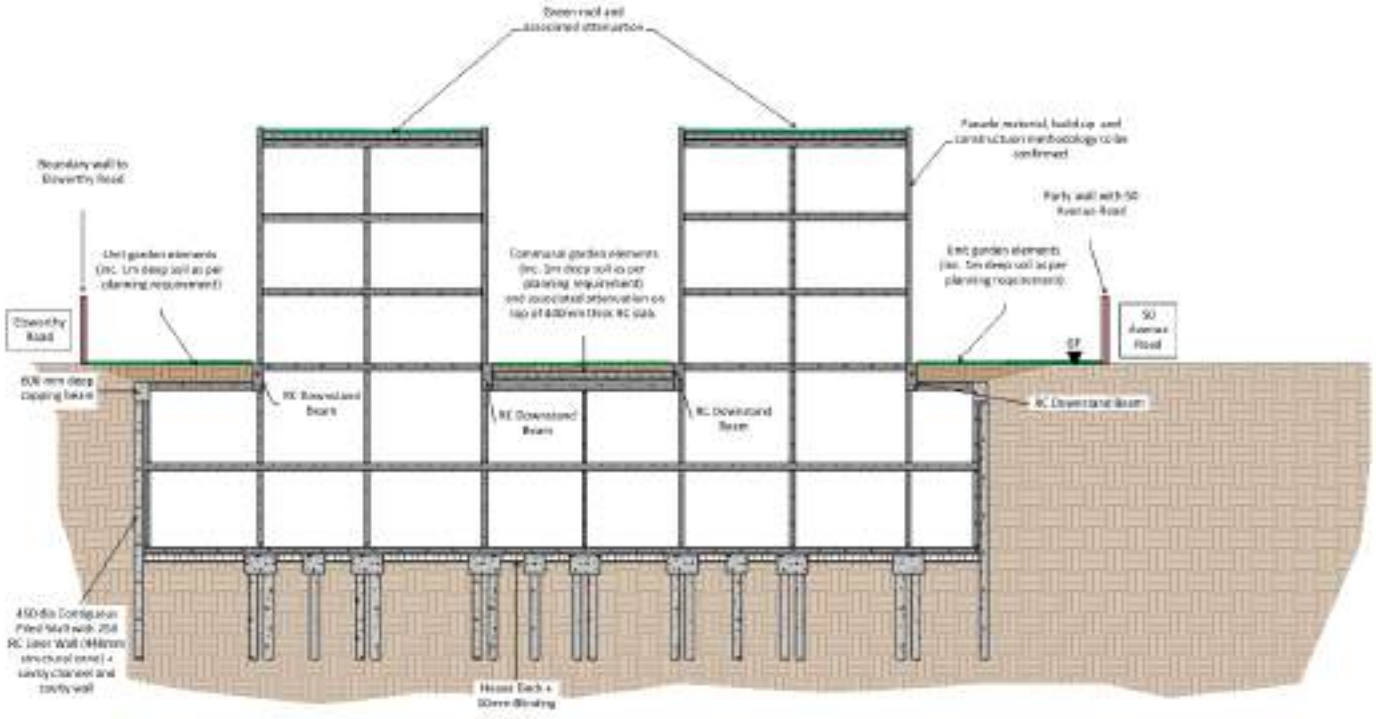

Figure 2.2 Proposed development section

Figure 2.3 Proposed ground floor plan

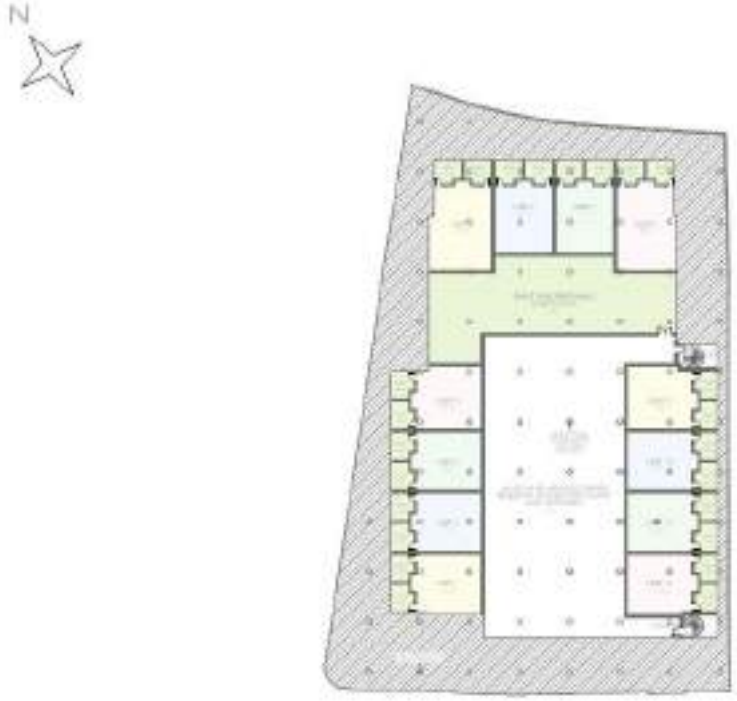

Figure 2.4 Proposed basement plan

2.4. Potential Land Contamination

Table 2.2 summarises the PRA presented in the A-squared Pha I desk study report and highlights the potentially complete contaminant linkages identified. Table 2.2 provides a baseline summary of site understanding prior to undertaking the site investigation and GQRA presented later in this Report. Where 'low' or 'low to moderate' risk is indicated this is also categorised as unacceptable risk in accordance with LCRM guidance. The qualitative risk assessment matrix which has been used is included as Appendix B.

Table 2.2 Prliminary Risk Assessment (PRA)

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
On-site	Direct contact with soil	Human health of proposed site end users	Yes (Residential site history but areas of open ground are proposed in garden areas)	Low†
	Inhalation of windblown soil			Low†
	Ingestion of soil			Low†
	Impact to water supply pipes followed by ingestion of contaminated water supply		Yes (Pipes may be laid in soils impacted by potential contamination, although it is unlikely that notable contamination is present on-site) (Standard construction water supply pipe likely suitable)	Very low
	Ground gas / soil vapour generation and inhalation		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground	Very low
	Inhalation of windblown soil from the site	Off-site human health	Yes (The proposed development includes garden, although the potential for liberation of notable wind-blown dust is low)	Very low
	Off-site migration and direct contact with impacted soil		Yes (Residential site history indicates that it is unlikely contamination is present	Very low
	Off-site migration and ingestion of impacted soil			Very low

	Impact to water supply pipes followed by ingestion of contaminated water supply		with the potential to migrate off-site) Very low
	Ground gas / soil vapour generation, off-site migration and inhalation		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground Very low
	Direct contact	On-site below ground structures (proposed)	Yes (Structures may be constructed soil impacted by sulphates associated with the London Clay and potential Made Ground) Low to moderate†
	Migration followed by ignition of ground gas / soil vapour		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground Very low
	Off-site migration followed by direct contact	Off-site below ground structures	Yes (It is unlikely that significant contamination with the potential to migrate off-site and damage nearby buildings is present) Very low
	Off-site migration followed by migration followed by ignition of ground gas / soil vapour		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground Very low

	Leaching and migration to groundwater via the unsaturated zone; Perched water percolation or lateral migration; Migration via advection and diffusion in the saturated zone; Vertical and lateral migration of free-phase product in the unsaturated and saturated zones; and Preferential pathways created via piling or borehole construction.	Controlled waters (groundwater)	Yes (It is unlikely that on-site contamination is present with the potential to impact aquifers beneath the London Clay Formation, even in consideration of potential piling and borehole construction) (This PRA indicates that the risk is sufficiently low such that further risk assessment of piling and borehole activities – e.g. Foundation Works Risk Assessment – is not required)	Very low
Off-site	On-site migration followed by direct contact or ingestion of soil	Human health of proposed site end users	Yes (The identified sources indicate that on-site migration is unlikely)	Very low
	Inhalation of windblown soil from off-site		Yes (The surrounding area is predominantly open gardens so there is a potential for windblown soil, however contamination is unlikely)	Very low
	On-site migration followed by impact to water supply pipes and ingestion of the water supply		Yes (Pipes may be laid in soils impacted by potential off-site sources, although the identified sources indicate contamination is unlikely)	Very low
	Ground gas / soil vapour generation, on-site migration and inhalation		Yes (It is unlikely that the identified off-site sources will generate notable ground gas/soil vapour and the London Clay Formation will limit migration potential)	Very low
	On-site migration followed by direct contact	On-site below ground structures (proposed)	Yes (It is unlikely that contamination is migrating on-site with the potential to damage the proposed structures)	Very low

On-site migration followed by ignition of ground gas / soil vapour	Yes (It is unlikely that the identified off-site sources will generate notable ground gas/soil vapour and the London Clay Formation will limit migration potential)	Very low

† - unacceptable risk (ref. *LCRM* guidance)

Potential on-site sources of contamination were identified as follows:

- Made Ground due to former demolition and construction (anticipated to be localised and include fills and subbases associated with the current building rather than substantial reconstituted ground) – heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate, and ground gases.
- Current and former residential use – heavy metals and metalloids, acids / alkalis, PAHs, TPH (inc. BTEX), and asbestos.

Potential off-site sources of contamination were identified as follows:

- Demolition of former neighbouring property to the west – heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate, and ground gases.
- Construction of residential properties immediately north – heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate, and ground gases.

Notes:

TPH – total petroleum hydrocarbons.

PAH – polycyclic aromatic hydrocarbons.

BTEX – benzene, toluene, ethylbenzene, xylenes.

Asbestos – potential free fibres, debris and / or fragments of asbestos containing material (ACM).

Ground gas – methane and carbon dioxide (excludes soil vapour).

Based on the PRA, unacceptable risks (ref. *LCRM* guidance) which require further investigation and assessment have been identified as follows:

- To on-site human health due to the potential for direct contact, ingestion and / or inhalation of soil in proposed open ground and garden areas
- To on-site buildings and structures via potential sulphate ‘attack’.

This Report presents an updated risk assessment for the proposed development based on site investigation, as recommended by the A-squared Phase I. The updated risk assessment includes GQRA in relation to human health and buildings and structures (property) for the pathways representing unacceptable risks at PRA stage.

3. Geological Setting

3.1. Regional Geological Overview

The development site is located within the London Basin, which refers to an approximately triangular synclinal structure, in which the sedimentary units underlying London and much of southeast England were deposited. The London Basin is comprised of the following formations, in order of decreasing depth:

- A deep (~200m thick) layer of Chalk, deposited throughout the Upper Cretaceous period, forms the base of the basin and is the principal aquifer of the region.
- The Thanet Beds, which comprise fine, silty glauconitic sands originating in shallow seas.
- The Lambeth Group, a depositionally and geographically complex unit which comprises layers of sands and gravels, shelly and mottled clays, minor limestones and lignites, and occasional sandstone and conglomerate.
- The London Clay Formation, a fine-grained silty clay, which is the dominant Thames Group deposit.
- River Terrace Gravels, deposited by the River Thames and its tributaries on top of the London Clay.

3.2. Site Geology and Anticipated Ground Conditions

The site is located at the approximate British National Grid coordinates 527010E, 183850N.

Figure 3.1 illustrates the location of the development within the context of a regional geological map. The map illustrates the spatial distribution of superficial (drift) deposits and bedrock outcrops at the ground surface. Made Ground is generally not shown but is assumed to be present on site due to historical demolition and construction works.

The geology map indicates that the site is situated in an area where the London Clay Formation is the uppermost bedrock stratum and there are no natural superficial deposits. The London Clay Formation is underlain by the Lambeth Group over Thanet Sands overlaying Chalk.

Head deposits are present approximately 200m east of the site. Head is poorly sorted and poorly stratified, angular rock and/or clayey hillwash and soil creep, mantling a hillslope and deposited by the slow viscous downflow of waterlogged soil and other unsorted and unsaturated superficial deposits.

The site lies approximately 70m west of the Lost River Tyburn. Alluvial deposits can be expected to be found overlying the London Clay and any River Terrace Deposits in the areas surrounding a lost river.

Figure 3.1 Geological context of the site (site marked by red circle)

3.3. Hydrogeology

The original A-squared Phase I lists the London Clay Formation is classified as Unproductive Strata.

The London Clay Formation can be expected to limit the vertical migration of groundwater such that it is effectively an aquitard.

Groundwater flow within the London Clay Formation is likely to be limited and does not represent a viable pathway for contamination to migrate onto and away from the site.

Perched water may be present associated with any Made Ground.

The site is located within groundwater Source Protection Zone II (Outer Protection Zone). A Source Protection Zone I (Inner Protection Zone) is located 319m east of the site. The associated abstraction well lies approximately 609m east of the site boundary. A map depicting the source protection zone is given in Figure 3.. The Source Protection Zone is not associated with the London Clay Formation but the deeper aquifers beneath.

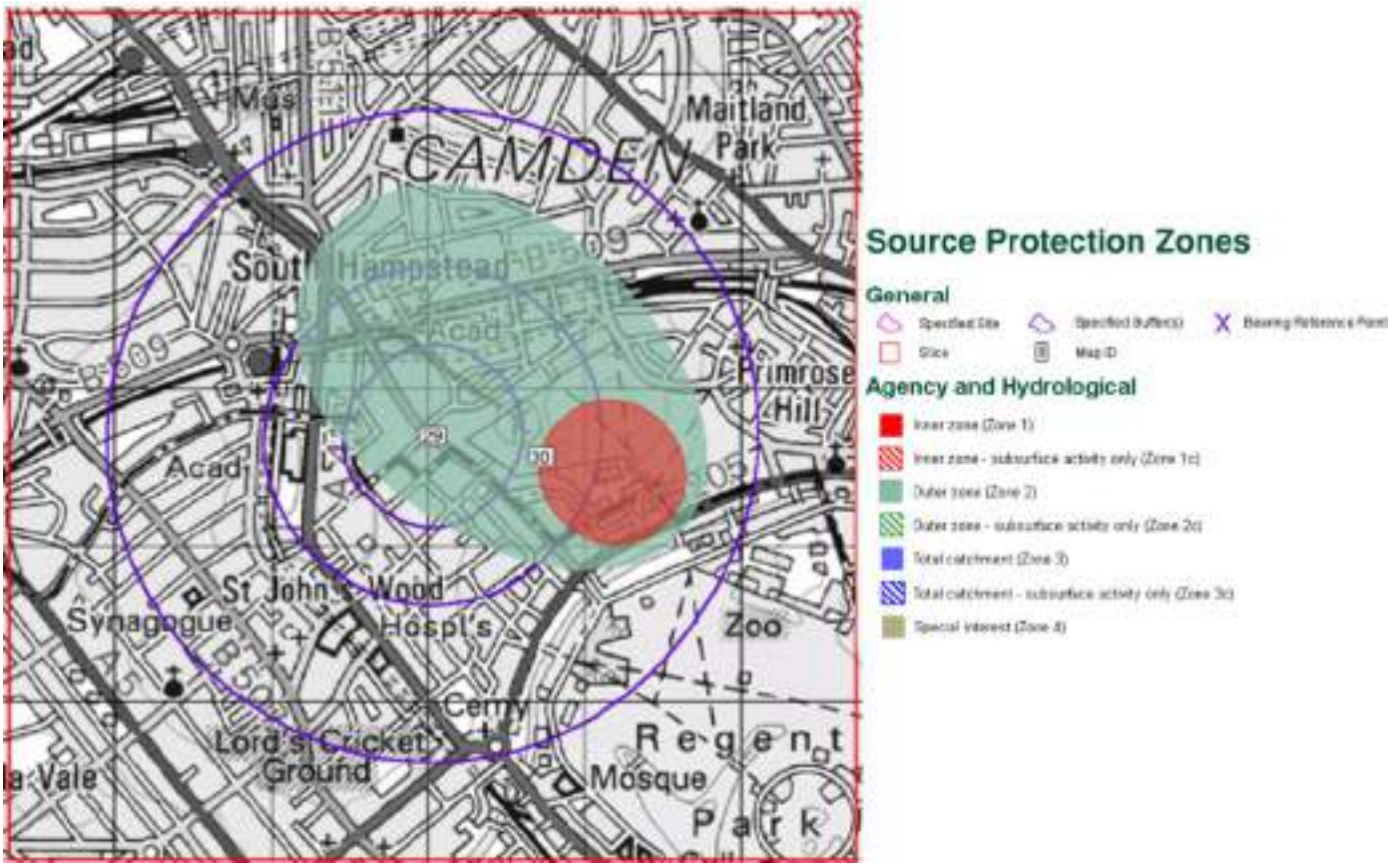

Figure 3.2 Groundwater source protection zone map

There are four groundwater abstractions within 500m of the site. They are all operated by the London Borough of Camden and range from 450 – 462m north west of the site. The abstractions are as follows:

- Municipal Grounds: Spray Irrigation – Direct – 450m NW
- Municipal Grounds: Spray Irrigation – Direct – 462m NW
- Municipal Grounds: General Washing/Process Washing – 462m NW
- Municipal Grounds: Lake and Pond Throughflow – 462m NW

The thickness of the London Clay beneath the site will act as an aquiclude between shallow deposits beneath the site and deeper aquifers at the base of the London Clay Formation.

Water was encountered in historical BGS boreholes (TQ28SE733) located approximately 400m south-east at a depth of 2.5m bgl, which is likely a localised perched water table. The historical borehole is highlighted in Figure 3.3 below.

Figure 3.3 BGS borehole Location Plan (Site Boundary Marked in Red)

3.4. Hydrology

The closest surface water feature lies 468m north west of the site boundary. The Lost River Tyburn is located approximately 70m east of the site and the River Thames is located approximately 4.79km south east of the site. Given the site geology, none are considered in hydraulic continuity with groundwater beneath the site.

No recorded surface water abstractions have been identified in the vicinity of the site.

4. Geotechnical and Geo-environmental Ground Investigation

A site-specific ground investigation was undertaken by A2SI between 01/11/2021 and 05/11/2021 with return monitoring results on the 11th and 23rd November 2021 and 9th December 2021. Details of the ground investigation findings are presented in the Factual Report (as referred to in Section 1), which is included as Appendix C.

The primary purpose of the ground investigation works was to manage and mitigate the geotechnical risk profile associated with the proposed redevelopment of the site and to achieve the geo-environmental objectives outlined in Section 1.1. The aims of the ground investigation were thus to:

- Develop and refine the existing ground model regarding the types and spatial extent of soils.
- Assess the prevailing hydrogeological regime onsite.
- Assess the engineering performance of the soil deposits to enable recommendations of suitable parameters for geotechnical design.
- Identify potential geotechnical hazards and evaluate risks with regards to both design and construction.
- Define the geo-environmental characteristics of the site and assess the risks associated with contamination.

The general scope of the investigation is summarised as follows:

- 2no. 40m-deep cable percussion boreholes (BH01 and BH02).
- 6no. window samples (WS01 to WS06) to depths of 5m.
- Logging and photographing of soils retrieved from investigative positions.
- Installation of groundwater and ground gas monitoring standpipe piezometers within each investigative position.
- Groundwater and ground gas/vapour monitoring.
- In-situ and laboratory geotechnical testing.

The exploratory hole plan for the investigation works is presented in Figure 4.1. The borehole depth of 40m was chosen to capture the anticipated *zone of influence* of the proposed development and prove the presence and extent of the primary strata of engineering significance.

All investigative works and sampling have been undertaken in general accordance with *BS10175:2011 Investigation of Potentially Contaminated Sites – Code of Practice*.

Figure 4.1 Exploratory borehole location plan

A series of in-situ and laboratory geo-environmental and geotechnical tests were performed as part of the investigative efforts. The selected geo-environmental soils samples had laboratory testing undertaken by The Environmental Laboratory Ltd Laboratory (ELAB) which is a United Kingdom Accreditation Service (UKAS) accredited laboratory. ISO17025 and MCERTS accredited methods were undertaken where applicable. The laboratory analytical certificates and data are included in the A2SI Factual Report (see Appendix C), including the following:

In-situ Testing:

- 58no. standard penetration tests (SPT).
- 4no. natural shear strength by hand vane tests

Monitoring:

- Ground gas/vapour monitoring.
- Groundwater monitoring.

Geotechnical Laboratory Testing:

- 20no. unconsolidated undrained (UU) triaxial tests.
- 4no. moisture content tests.
- 4no. liquid and plastic limit tests.

- 5no. BRE suite D tests.

Geo-environmental Laboratory Testing:

- 4no. Heavy metal suite (including hexavalent chromium).
- 4no. pH tests.
- 4no. Water soluble sulphate suite
- 4no. Total sulphate suite
- 4no. Acid soluble sulphate suite
- 4no. Water soluble boron suite
- 4no. Fraction organic carbon (FOC)
- 4no. Soil organic matter (SOM)
- 4no. Total organic carbon (TOC)
- 4no. asbestos
- 4no. Total petroleum hydrocarbon (TPH) including BTEX
- 4no. Speciated polycyclic aromatic hydrocarbons (PAH)(EPA 16 reported)

4.1. Monitoring Well Installations

A combined ground gas / soil vapour and groundwater monitoring well was installed within BH01, BH02, WS01, WS02, WS03, WS04, WS05 and WS06 to a maximum depth of 5m. The well was constructed using 50mm internal diameter HDPE standpipe and a bung with gas valve was placed at the well head. Summary details of the well installation are presented in Table 4.1. All other trial pits were backfilled with arisings.

Table 4.1 Ground Gas and Groundwater Monitoring Well Summary

Location Ref.	Base of Borehole (mbgl)	Standpipe Internal Diameter (mbgl)	Top of Response Zone (mbgl)	Base of Response Zone (mbgl)	Screened Stratum
BH01	40	50mm	2	5	London Clay
BH02	39	50mm	1	2	Made Ground
WS01	5	50mm	0.5	1	Made Ground and London Clay
WS02	5	50mm	0.5	1	Made Ground and London Clay
WS03	5	50mm	0.5	1	Made Ground and London Clay
WS04	5	50mm	0.5	1	Made Ground and London Clay
WS05	5	50mm	0.5	1	Made Ground
WS06	5	50mm	0.5	1	Made Ground and London Clay

4.2. Return Monitoring Visits

Three return monitoring visits were undertaken on the 11th and 23rd November 2021 and the 9th December 2021.

The return visits included ground gas monitoring of a single monitoring well (BH1) using a calibrated Gas Data GFM436 hand-held gas analyser and a calibrated MiniRae Lite ATEX PID. The data collected included ground gas concentrations and ground gas flow rates. Each return visit also included groundwater level gauging of each of the installed monitoring wells using an oil-water interface probe.

5. Ground Conditions

5.1. Ground Model

A summary of the ground conditions encountered during the intrusive investigation is presented in Table 5.1 below.

Table 5.1 Summary off the encountered geological profile

Unit	Minimum Elevation (mOD)[1]	Maximum Elevation (mOD)[1]	Thickness (m)	Description
Made Ground	+45.3	+46.0	0.7	Firm grey, brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subangular of brick, concrete, and flint.
London Clay Formation	+6.0	+45.3	39	Firm mottled grey slightly sandy, silty CLAY.

1. mOD: metres above Ordnance Datum.

5.1.1. Made Ground

The Made Ground is a heterogeneous mixture of natural soils and deleterious materials of anthropogenic origin. Made Ground was encountered in the trial pits and boreholes to depths of up to 2.1m.

The Made Ground was described as a greyish brown sandy gravelly clay with low to high cobble content, fine to coarse sand, angular to subangular gravel and fine to coarse brick, concrete, and flint. The Made Ground also contained fragmented roots and rootlets. BH01, TP01 and TP02 contained a layer of concrete and/or brickwork ranging between 0.1 and 0.9m in thickness, and WS03, WS05 and WS06 contained a thin layer of topsoil.

It is noted that the Made Ground is an uncontrolled fill and is inherently variable in terms of its consistency, characteristics, and engineering properties. This stratum is not recommended to be relied upon to support any engineered structures.

Due to the variability with regards to source and deposition, the assessment of its engineering performance must be undertaken with appropriate caution, The limited thickness of the layer means that it will likely be excavated during the construction of the proposed basement.

5.1.2. London Clay

London Clay was encountered in all boreholes and trial pits at depths up to circa 40m. The London Clay was deposited under a prehistoric sea in the Eocene Period. It comprises mostly silty clays and is heavily overconsolidated resulting from the erosion of more than 200m of the formation since its deposition. It forms the bedrock of the site and is described firm to stiff mottled grey slightly gravelly silty clay with subangular to subrounded gravel and fine to coarse flint.

Four liquid and plastic limit tests have been undertaken on the London Clay on samples from BH01 and BH02. The moisture content and plasticity index ranges from 27-31% and 17-65% respectively.

Four of the 24 undisturbed samples of London Clay were not suitable for testing following extrusion apart during extrusion. A total of 20 unconsolidated undrained triaxial tests were conducted on 100mm-diameter undisturbed London Clay samples retrieved from depths ranging from 2.5 to 37.5mbgl. These gave undrained shear strengths ranging from 69kPa to 407kPa. The average dry and bulk density of the samples were approximately 1.5Mg/m^3 and 1.9Mg/m^3. The bulk and dry density appear to be relatively consistent over the depth of the stratum.

Four natural shear strength by hand vane tests were conducted on samples of the London Clay. The peak and residual shear strengths were measured to be 148 to 166kPa (peak) and 58 to 78kPa (residual) respectively.

The response to loading of the London Clay can be assessed using *undrained* parameters in the short term and *drained* parameters in the long term, following the dissipation of excess pore water pressure.

The London Clay is well known to be heavily overconsolidated as a result of erosion of approximately 200m of material following deposition. A coefficient of horizontal earth pressure at rest, K_0, of 1.0 to 1.5 is considered suitable for routine design work based on past experience and extensive published date. The design of any substructure elements may consider the impact/effect of any given stress paths and installation effects, as appropriate (it is noted that the in-situ *undisturbed* K_0 may be greater than the range given – however it is common to account for disturbance, installation effects and reduction in in-situ pressure at rest conditions as part of retaining wall design, for example).

The London Clay Formation is a competent stratum and is often used to found permanent structural foundations including shallow footings, rafts, piled rafts, and pile foundations in London.

The formation is considered to provide good conditions for construction, not requiring the use of dewatering systems to enable dry excavation due to its low permeability, and not requiring the use of wet construction methods when carrying out bored piling. Notwithstanding, upper layers of cohesionless superficial deposits (if present) will generally require temporary casing.

5.2. Characteristic Geotechnical Parameters

The purpose of this section of the GDR is to describe the salient physical properties of the main geological units that were encountered during the ground investigation works. The information reviewed in this chapter includes stratigraphy, in conjunction with basic physical characteristics (e.g. moisture content, and consistency), as evaluated from laboratory testing.

Additionally, this section aims to provide an understanding of the basic characteristics of the various soils deposited at the development site, from which a more detailed understanding of their engineering behaviour and associated risks can be derived.

The geotechnical design of the proposed development will be performed in accordance with the requirements of BS EN 1997 Eurocode 7: Part 1 Geotechnical Design. The selection of geotechnical properties for design should thus represent *characteristic* values, which is defined as that which *represents a cautious estimate of the value affecting the occurrence of the limit state* (BS EN 1997-1 §2.4.5.2(2)P). This definition of the *characteristic* value differs from that for other Eurocodes, which define the characteristic value as being based on a statistical estimate of the 95% probability of occurrence.

The use of limit states thus invokes subtleties into design that must be appreciated by the Geotechnical Designer, not least that a particular soil property (e.g. unit weight), may have multiple *characteristic* values, depending on the structure type and limit state under consideration. For example, when assessing the ultimate bearing capacity of a pad footing, the characteristic value (cautious estimate) of the unit weight of soil above the founding level may represent a *lower bound* of the measured values. However, in the evaluation of structural forces within an embedded retaining wall an *upper bound* of the measured values may represent a cautious estimate for that particular limit state.

The characteristic values presented herein represent those that are assessed to be most relevant to the types of routine calculations that may be performed, e.g. cautious (lower bound) estimates for strength and stiffness, as they are likely to relate to the design of piled foundations and embedded retaining structures. Notwithstanding this, the Designer may need to evaluate alternative *characteristic* values from the presented to facilitate design in accordance with the Eurocodes.

The characteristic geotechnical parameters determined for the main geological units are shown in Table 5.2.

Table 5.2 Characteristic geotechncal parameters adopted for design

Stratum	Top of strata (mOD)	$\gamma_{b,k}$ (kN/m^3)[2]	$\varphi'_{cv,k}$ (°)	c'_k (kPa)	$c_{u,k}$ (kPa)	E' (MPa) [11]	E_u (MPa) [9]	ν	K_o[11]
Made Ground[3]	+46	18	30	0	-	10.0	-	ν′ = 0.2	0.5
London Clay	+45	20	23[4]	0[4]	70.0 + 4.2z[1] [5]	V: 28.0 + 1.7z[1] [8] H: 56.0 + 3.3z[1] [8]	V: 35.0 + 2.1z[1] [6] H: 70.0 + 4.2z[1] [7]	ν′ = 0.2 ν_u = 0.5[10]	1.2

$\gamma_{b,k}$: bulk unit weight $\varphi'_{cv,k}$: effective critical state angle of shearing resistance c'_k: effective cohesion $c_{u,k}$: undrained shear strength E': drained Young's Modulus E_u: undrained Young's Modulus ν: Poisson's Ratio K_o: in-situ lateral earth pressure coefficient V: Vertical H: Horizontal

1. z refers to the depth in metres below the top of the stratum.
2. Bulk unit weights are based on material descriptions and dry and bulk density testing.
3. Moderately conservative geotechnical parameters representative of the variable nature of the Made Ground have been provided based on the material description.
4. The effective critical state angle of shearing resistance for the London Clay stratum has been calculated from an average plasticity index of 38% using Equation 7 from BS 8002:2015 Code of practice for earth retaining structures. Per BS 8002:2015 §4.3.1.4.9 $c'_{cv,k}$ is taken as 0kPa.
5. Undrained shear strength, $c_{u,k}$, of the London Clay has been estimated from SPT N_{60} values and unconsolidated undrained (UU) triaxial tests. SPT N_{60} and c_u have been correlated using the ratio $c_u/N_{60} = f_1 = 4.5$, per CIRIA C143. The SPT N_{60} plot and the c_u plot with the adopted design line for the London Clay are presented in Figure 5.1 and Figure 5.2, respectively.
6. Undrained vertical stiffness of the London Clay has been estimated using the relationship $E_u/c_u = 500$.
7. Undrained horizontal stiffness of the London Clay has been estimated using the relationship $E_u/c_u = 1000$.
8. Drained vertical and horizontal stiffnesses of the London Clay have been estimated using the relationship $E_u/E' = 0.8$.
9. Where no horizontal stiffness of a material is provided, the soil is assumed to be isotropic.
10. ν_u is the undrained Poisson's Ratio (no volume change undrained condition).
11. K_o calculated from $1 - \sin\varphi'$ for normally consolidated and lightly overconsolidated materials.

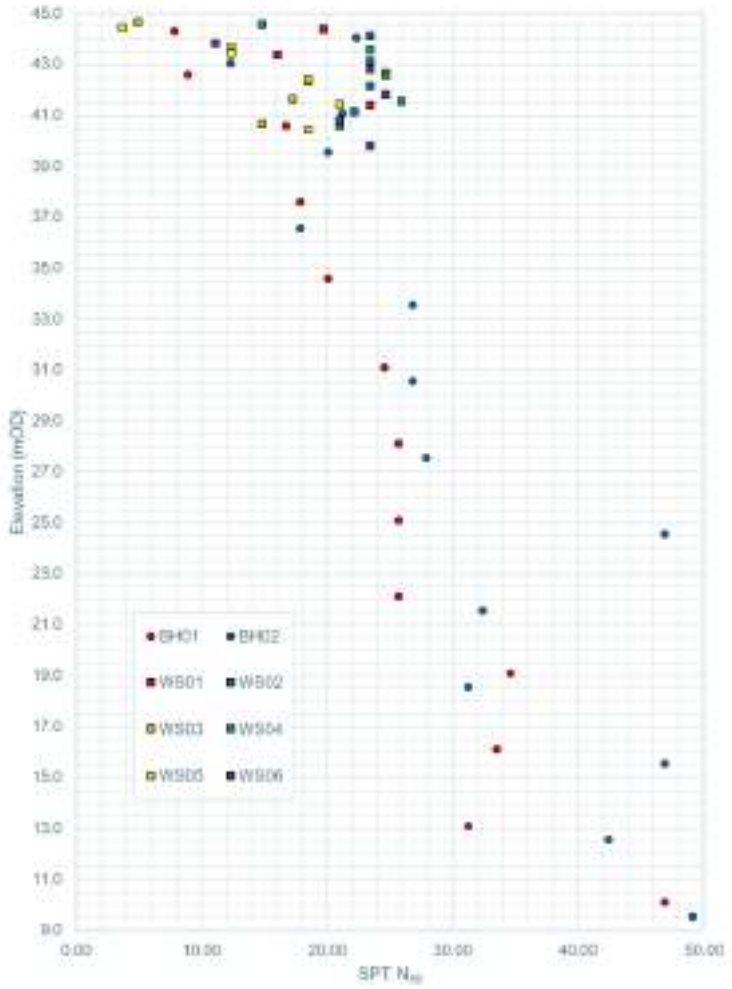

Figure 5.1 London Clay – SPT N_{60} results

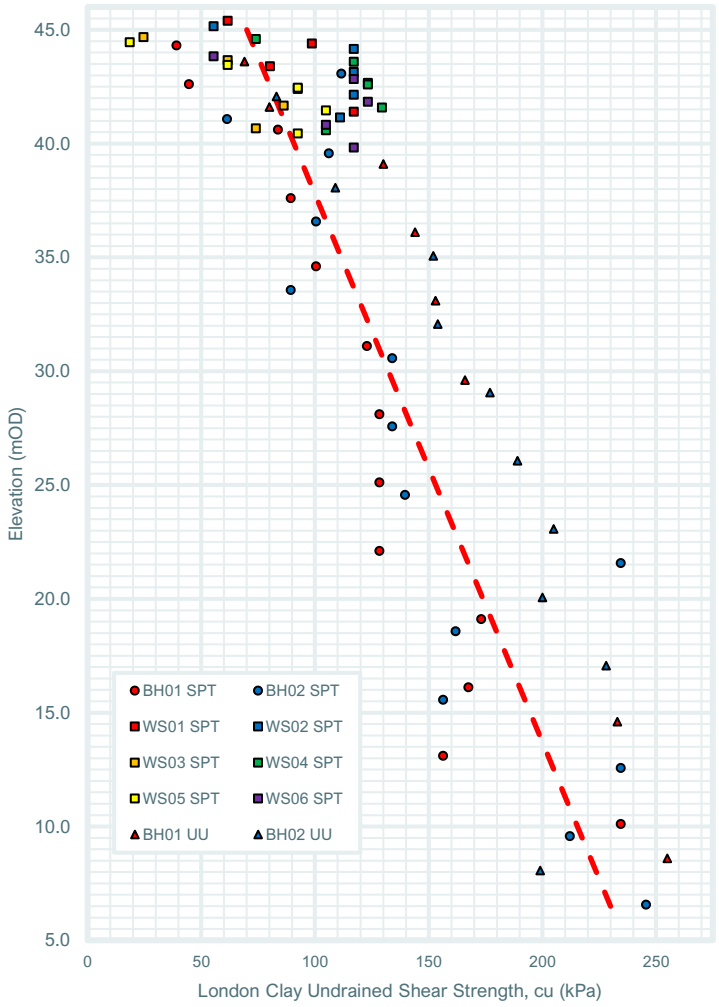

Figure 5.2 London Clay – Undrained shear strength, cu (kPa)

5.3. Groundwater

At the time of writing, groundwater level gauging has been carried out on three of the six proposed rounds, on 11/11/2021, 23/11/2021 and 09/12/2021.

Groundwater was not encountered during any of these initial three monitoring rounds. Subsequent monitoring rounds have therefore not been undertaken.

It is however noted that a pore-water pressure 'field' (which will not be readily identified with conventional standpipe installations) will be present within the low permeability London Clay. The long term application of these water pressures to the substructure must be accounted for in the design.

Water tables in both short- and long-term conditions have therefore been taken at the top of the London Clay (45mOD). A summary of groundwater level monitoring results is given in Table 5.3.

Table 5.3 Groundwater level monitoring results

Exploratory Hole Reference	Level at Top of Monitoring Well (mOD)	Round 1 11/11/21 (mOD)	Round 2 23/11/21 (mOD)	Round 3 09/12/21 (mOD)	Notes
BH01	+41.0	Dry	Dry	Dry	No free phase product detected
BH02	+44.0	Dry	Dry	Dry	No free phase product detected
WS01	+45.0	Dry	Dry	Dry	No free phase product detected
WS02	+45.0	Dry	Dry	Dry	No free phase product detected
WS03	+45.0	Dry	Dry	Dry	No free phase product detected
WS04	+45.0	Dry	Dry	Dry	No free phase product detected
WS05	+45.0	Dry	Dry	Dry	No free phase product detected
WS06	+45.0	Dry	Dry	Dry	No free phase product detected

5.4. Ground Gas and Soil Vapour

The ground gas and soil vapour data collected during the return monitoring visits is summarised in Table 5.4. Full results are included in the A2SI Factual Report in Appendix C.

Table 5.4 Summary Ground Gas / Soil Vapour Monitoring Results

Monitoring Well Reference	Monitoring Round Date	Minimum O_2 (%)	Maximum CO_2 (%l)	Maximum CH_4 (%)	Maximum H_2S (ppm)	Maximum CO (ppm)	Maximum PID (ppm)	Peak Flow Rate (l/hr)	Barometric Pressure (mb)
BH01	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	20.1	<0.1	<0.1	<1	<1	1.0	<0.1	1023
	9/12/21	15.1	0.7	<0.1	<1	<1	<0.1	<0.1	993
BH02	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	19	1.7	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	20.2	<0.1	<0.1	<1	<1	1.0	<0.1	993
WS01	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	19	0.9	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	19.7	<0.1	<0.1	<1	<1	<0.1	<0.1	993
WS02	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017

	23/11/21	19	1.7	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	19.8	0.3	<0.1	<1	<1	<0.1	<0.1	993
WS03	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	17.5	2.4	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	18.9	0.3	<0.1	<1	<1	<0.1	<0.1	993
WS04	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	18.7	2.3	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	19	0.3	<0.1	<1	<1	<0.1	<0.1	993
WS05	11/11/21	20.7	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	19.2	1.2	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	20.3	0.4	<0.1	<1	<1	1.0	<0.1	993
WS06	11/11/21	20.6	<0.1	<0.1	<1	<1	<0.1	<0.1	1017
	23/11/21	15.8	4.1	<0.1	<1	<1	<0.1	<0.1	1023
	9/12/21	19.7	0.3	<0.1	<1	<1	<0.1	<0.1	993

5.5. Visual and Olfactory Evidence of Contamination

No visual or olfactory contamination was recorded during the investigation for soil and groundwater, with the exception of occasional inert anthropogenic materials in Made Ground.

During the intrusive investigations, soil sample VOC head-space testing was undertaken using a PID. The PID did not register a PID results above the equipment detection limit (<0.1 parts per million (ppm)).

6. Geotechnical Engineering Design

The design of temporary and permanent structures shall conform with BS EN 1997 Eurocode 7: Part 1 - Geotechnical Design (EC7). EC7 adopts a limit state approach to design, whereupon the safety of the structure is assessed under Ultimate Limit States (ULS) and performance under Serviceability Limit States (SLS) and. Any element of geotechnical design should also consider relevant guidance and industry best practice to supplement compliance with codes.

ULS conditions shall be evaluated such that the Design Resistance, R_d, of the structure/element is equal to or greater than the Design Effect of Actions, E_d.

The Design Resistance is determined in accordance with the requirements of the particular limit state under consideration as defined in EC7. The Design Resistance is evaluated from the Characteristic Resistance of the design element, which has been reduced as specified by the code to allow for uncertainty in the estimation of soil properties and the means and methods of evaluating the ultimate strength.

With regards to geotechnical design of the proposed development, the following ultimate limit states should be verified:

Verification of Strength

- Geotechnical (GEO): GEO assesses the ultimate geotechnical capacity of a design element as it interfaces with and relies upon the ground to maintain stability, for example, the geotechnical capacity of piles subject to axial loading.
- Structural (STR): STR assesses the integrity of structural elements to withstand the internal stresses generated from the application of external loads. With regards to typical geotechnical design works, an example may be reinforcing requirements for an embedded wall.

Verification of Stability

- Uplift (UPL): UPL relates to the assessment of the loss of static equilibrium due to buoyancy effects.
- Hydraulic (HYD): HYD relates to the loss of stability resulting from internal seepage forces such as at the toe of a retaining wall partially embedded in a saturated, permeable stratum.
- Equilibrium (EQU): EQU relates to the global stability of the structure and its equilibrium.
- Other soil-structure interaction and stability mechanisms applicable to the particular structure or engineering challenge under consideration.

Verification of Serviceability

Design of geotechnical and structural elements for the verification of strength should conform to the requirements of the British National Annex to Eurocode 7, adopting Design Approach 1, and the material factors and load multipliers for Combinations 1 and 2.

6.1. Geotechnical Category

EC7 defines three Geotechnical Categories that relate to the risk associated with a structure (or portion of that structure). Figure 6.1 provides a summary description of the three Geotechnical Categories. Table 6.1 provides a summary of geotechnical design elements that are anticipated to require consideration as part of the final scheme and their associated Geotechnical Category.

It is assessed that most geotechnical design elements will fall within Geotechnical Category 2 and will thus be suitable for design via routine methods, with appropriate consideration of the site-specific constraints.

GC	Includes ...	Design requirements	Design procedure
1	Small and relatively simple structures ... with negligible risk	Negligible risk of instability or ground movements; ground conditions are 'straightforward'; no excavation below water table (or such excavation is 'straightforward')	Routine design and construction (i.e. execution) methods
No examples given in EN 1997-1			
2	Conventional types of structure and foundation with no exceptional risk or difficult soil or loading conditions	Quantitative geotechnical data and analysis to ensure fundamental requirements are satisfied	Routine field and lab testing Routine design and execution
Examples: spread, raft, and pile foundations; walls and other structures retaining or supporting soil or water; excavations; bridge piers and abutments; embankments and earthworks; ground anchors and other tie-back systems; tunnels in hard, non-fractured rock, not subject to special water-tightness or other requirements			
3	Structures or parts of structures not covered above	Include alternative provisions and rules to those in Eurocode 7	

Reproduced from Bond and Harris, 2008

Figure 6.1 Geotechnical categories

Table 6.1 Geotechnical categories of geotechnical design elements

Geotechnical Design Element	Geotechnical Category
Spread or raft foundations founded in the London Clay	2
Embedded/RC retaining wall design in the London Clay	2
Pile design in the London Clay	2

6.2. Codes of Practice for Geotechnical Design

In addition to the Principles and Recommendations described in EC7, the following codes of practice provide non-conflicting (with EC7) guidance regarding the routine design of geotechnical elements (as deemed relevant for the proposed development):

- BS 6031:2015 – Code of practice for earthworks.
- BS 8002:2015 – Code of practice for earth retaining structures.
- BS 8004:2015 – Code of practice for foundations.

In addition to the aforementioned codes of practice, it is recommended that the following guidance document is referred to:

- CIRIA C760, 2017 – Guidance on embedded retaining wall design.

6.3. Temporary Works Design

The design of temporary works shall comply with:

- BS EN 1997: Part 1 – Geotechnical Design.
- PAS8811 (2017): Temporary Works.
- PAS8812 (2017): Temporary Works. Application of European Standards in Design.

6.4. Design Life

A 50-year design life has been assumed.

6.5. Proposed Development and Review of Key Constraints and Risks

The proposed development comprises the demolition of the existing building on site, excavation of an approximately 9.5m deep two-level basement, and construction of three reinforced concrete structures. The structures will be founded on piles with a contiguous piled wall retaining the soil surrounding the basement. The proposed structures will each contain 12 housing units, each with a private garden. The scheme also comprises 62 boreholes over the extent of the site including the basement to power ground source heat pumps for heating and cooling of the whole complex.

The primary substructure engineering constraints and risks that have been reviewed as part of this assessment are as follows:

1. Interaction of the proposed structures (comprising both temporary and permanent works considerations) with the adjacent properties which fall within the zone of influence of the basement works.
2. Damage to adjacent third-party assets including buildings, utilities, hard standing etc. (via retaining wall deflections and unload / reload mechanisms).
3. Groundwater considerations during construction where seasonal variations in groundwater may occur. Appropriate means of temporary earth retention and ground water cut-off (where required) taking these aspects into account.
4. Construction programme and assessment of time-dependent movements within cohesive strata (i.e. applicability of undrained/drained assumptions in design).

The following sections provide an overview of potential soil retention and foundation options for the proposed development taking into account the current proposals, site constraints and geological conditions.

6.6. Excavation Works and Retention

6.6.1. Excavated Material

Based on the proposed scheme information provided, approximately 9.5m of soil comprising Topsoil, Made Ground, and London Clay will be excavated for the new basement.

6.6.2. Groundwater Cut-off

Three groundwater monitoring visits have been completed on site and the results shows indicate that the Made Ground above the London Clay is largely dry, with the potential for localised perched pockets / bodies of groundwater to be present. Due to the low permeability of the London Clay, it is unlikely that significant dewatering operations will be required to facilitate basement construction. However, it is recommended that a provision for local sumping or pumping is provided any finite volumes of groundwater within the Made Ground.

6.6.3. Net Loading Overview

6.6.3.1. Heave

The demolition of the existing superstructure elements will introduce an equivalent unloading pressure of approximately 44kPa. This will cause the soil underneath the existing shallow foundation to heave, resulting in an upwards ground movement. The proposed excavation will remove approximately 9.5m of overburden, causing the underlaying soil to heave further. The London Clay in the zone of influence of the unloading pressure associated with the demolition and excavation will generate negative excess pore pressures as it responds to unloading. The excess pore water pressures will dissipate with time, resulting in long term heave.

The long-term heave pressure on the underside of the proposed basement slab may correspond to approximately 50% of the effective overburden pressure removed (taking into consideration a degree of partial consolidation during construction and soil-structure interaction effects). A design value of 50kPA is recommended for long-term heave pressure. Note that this value should only be used for STR and GEO design, and not for UPL buoyancy checks. It is noted that any changes in excavation depth will have an inherent impact on the excess port water pressure generation and magnitude of heave pressure.

The heave pressure can be mitigated in part with the use of a proprietary heave mitigation layer, such as a Cordek Cellcore product or equivalent. The product is designed to resist the wet concrete pressure with an appropriate safety margin, beyond which it will crush under increase in heave pressure in the long-term condition. This would limit the pressure applied to any suspended slabs which span between pile foundations or discrete footings, should such options be adopted. This option would not be applicable for the proposed piled raft foundation or a ground-bearing slab.

6.6.3.2. Uplift

When assessing the impact of the long-term water uplift pressure on the underside of the proposed basement raft, partial factors γ_G of 1.1 and 0.9 can be adopted for unfavourable and favourable loading respectively (and γ_Q of 1.5 and 0.0 for unfavourable and favourable variable loading respectively). The long-term hydrostatic uplift on the underside of the basement equates to a factored pressure of 90kPa.

The global UPL stabilising action acting across the building footprint will need to be in excess of the uplift force from the water table with the UPL partial factor of 0.9 applied. When this condition is met, this indicates that the proposed development achieves EC7 UPL criteria. In addition, it is recommended that further checks of the substructure are carried out as design develops, incorporating more refined load takedowns to basement level to assess the UPL condition criteria.

Where local or global UPL criteria are not achieved, *active* or *passive* means of uplift pressure mitigation can be considered:

- *Active* means of uplift pressure mitigation can come in the form of an underdrainage system, which relieves the water pressure acting on the underside of the substructure. This system would comprise a granular engineered blanket with a network of drainage pipes and sumps. Groundwater would be pumped in order to maintain a zero-pressure condition. This solution works best where a groundwater cut-off has been achieved through embedment into the London Clay, to limit the volumes of groundwater inflow. This solution potentially reduces the foundation requirements for uplift control; however, the whole-life cost of the underdrainage system needs to be considered alongside ongoing maintenance provision.
- *Passive* means of uplift pressure mitigation are tension piles or anchorage, which provide further restoring force and ensures satisfactory equilibrium (EQU and UPL condition) criteria are met. This option is provided as part of the substructure and does not require any further consideration throughout the life of the structure.

6.6.4. Earth Retention

6.6.4.1. Overview

The proposed scheme comprises two new basement levels. The basement is proposed to be retained by a contiguous piled wall. The maximum retained height during the construction process is anticipated to be approximately 9.5m (excluding the 10% additional overdig provision as advised by EC7 for design purposes).

6.6.4.2. Proposed Earth Retention Systems

For the contiguous pile wall, typical embedded wall lengths would be of the order of 1.5 to 2 times the retained height (i.e. approximately 14 to 19m), assuming no significant axial loads are applied, and the earth retention system is propped/braced in an appropriate fashion. For the required retained height of approximately 9.5m, propping will likely be required to minimise lateral movements to acceptable levels.

Appropriate care is required during construction to ensure that retaining wall installation effects do not introduce excessive ground movements and potential impact on surrounding structures and assets. The installation effects and construction tolerances will also need to be considered accordingly when specifying this system.

If the embedded retaining wall is required to resist significant axial loading, the capping beam provision and design will govern load distribution and the number of piles which may be mobilised to resist any axial loading.

For a sheet pile wall, jetting or predrilling may be required in order to achieve any significant penetration into the London Clay Formation. The viability of this method would need to be reviewed with caution on the basis of the basement depth requirements and considering installation limitations and constraints within congested urban settings.

It is likely at this stage that a contiguous piled wall is the most favourable option from practicality and ease of installation perspectives.

It is noted that site constraints and logistics may limit the type of plant and equipment which may be adopted for the installation operations and broader earth retention construction works.

6.6.4.3. Excavation and General Earthworks Considerations

Where buried obstructions are not encountered, it is anticipated that the proposed excavation may be carried out using standard means and methods.

Temporary batter slopes may be assumed to be constructed at a slope of approximately 1_V:2_H within the Made Ground. Berms providing support for embedded retaining walls during construction should undergo detailed design to ensure that the berm geometry is safe and does not lead to excessive deformation of the retaining wall.

6.6.4.4. Retaining Wall Design Earth Pressures

Active and passive earth pressures acting on normal to the face of a vertical retaining wall may be calculated using the equations below from BS EN 1997-1:2004 Annex C. The effects of porewater pressure are added to the earth pressures evaluated from the equations:

$$\text{Active Limit State} \qquad \sigma'_a(z) = K_a \sigma'_v - 2c'\sqrt{K_a}$$

$$\text{Passive Limit State} \qquad \sigma'_p(z) = K_p \sigma'_v + 2c'\sqrt{K_p}$$

The effective vertical stress σ'_v acting at a depth z below the ground surface shall include the effects of soil weight and, where appropriate, surcharge loading. Recommended values of active and passive earth pressure coefficients are summarised in Table 6.2 below. Because of the use of partial factors under EC7, earth pressure coefficients are not constant for each limit state. The retaining wall must deflect sufficiently to mobilise the limiting active and passive earth pressures. It is reasonable to assume such conditions will exist at the ultimate limit state. However, earth pressures under serviceability conditions may represent intermediate conditions between the at-rest condition (K_0) and ultimate limit state.

Table 6.2 Recommended ULS and SLS earth pressure coefficients for retaining wall design

Stratum	ϕ'_k (°)	c'_k (kPa)	δ/ϕ'_k	K_0	EC7 DA1 Combination 1 & SLS		EC7 DA1 Combination 2	
					K_a	K_p	K_a	K_p
Made Ground	30	0	0.67	0.5	0.30	6.1	0.36	4.0
London Clay	23	0	0.67	1.2	0.39	3.5	0.46	2.7

Based on EC7 Annex C.

6.6.4.5. Ultimate Limit State

The retaining walls should be designed for geotechnical (GEO) and structural (STR) limit states using the Design Approach 1 Combination 1 & 2 partial factors.

Evaluation of the GEO and STR limit states shall consider the effect of over excavation on global stability and structural forces. The overdig allowance should be taken as the lesser of 10% of the retained height, or 0.5m. The design over-excavation depth may be reduced if appropriate construction controls are incorporated into the work method statements for the basement excavation.

For any proposed embedded retention system, the embedded length should be sufficient to mobilise a large enough stabilising passive earth pressure to resist the destabilising active earth pressure. The groundwater level data obtained from the groundwater monitoring visits should be adopted for the design of the embedded retaining walls.

In the long-term, the combination of the concrete basement box liner walls and retaining walls should be checked against the horizontal earth pressure and long-term water table at +45mOD. The ground floor and any intermediate slabs can be taken as “props” acting to restrain the wall where present.

It is recommended that a minimum surcharge of 10kPa is applied to the retained ground surface for both ULS and SLS analyses. A higher surcharge may be warranted if the retained ground in proximity of the wall:

- Will be used to provide storage/laydown of provide staging areas for heavy plant.
- If there will be a low level of control over the placement of materials.
- Specific surcharging requirements are required such as adjacent neighbouring building and party wall.

6.6.4.6. Serviceability Limit State

Deflection limits should be set by the engineer within the retaining wall design and construction specifications. Deflection limits may be required to ensure:

- Construction tolerances on cavity wall/liner walls are not adversely affected as a result of excessive deformation.
- That the risk of damaging surrounding third party assets/infrastructure is mitigated.

The deflection limits should be set to define:

- Maximum ground displacements that may occur during installation of the retaining wall.
- Maximum horizontal displacement of the retaining wall during construction and operation.
- If required as part of a ground movement assessment, maximum displacements/rotations of neighbouring building facades, hardstanding and/or significant utilities.

6.6.4.7. Other Considerations

- The active horizontal earth pressure coefficients shown in Table 6.2 are dependent on the stiffness of the retention system and the earth pressure coefficient adopted for structural design purposes should take cognisance of the compaction effort and relative stiffness of the wall. The deformation of the system allows the mobilisation of the active earth pressures. High stiffness retention systems do not allow as much mobilisation of active earth pressure as softer systems, leading to horizontal earth pressures between K_0 (no mobilisation or stress relief) and K_a (full mobilisation) and higher design bending moments and shear forces. However softer systems will allow more horizontal ground movements as they deform, leading to lower design bending moments and shear forces.
- The overall lateral wall movements and deformation of the ground caused by the bulk excavation may be reduced through additional propping and a staged excavation sequence. The props will require appropriate design to resist induced axial forces, and the additional stiffening of the retention system will likely increase the overall design bending moments and shear forces.

- The design guidance provided above is based on the groundwater levels from the monitoring results from the ground investigation. However, it is recommended that the water level is checked, and retention system design updated if required, prior to the commencement of on-site works as the groundwater level can vary seasonally.
- Vertical loads acting on the retaining wall will cause the retention system to settle, which will influence the wall friction on the active side of the wall. Consideration should be given to how vertical loads on the wall are carried, as reduced wall friction may result in an increase in the horizontal earth pressure coefficient.
- Specialist contractors should be consulted in relation to construction means and methods (including site logistics constraints) considering the urban setting and congested environment.

6.7. Shallow Foundations

The design of shallow foundation is generally governed by serviceability considerations, such as limiting differential settlements between loading positions, to avoid excessive distortions of the superstructure frame and damage to surrounding structures. This is of particular relevance where significant overburden is removed as a result of basement excavation.

A ground-bearing raft system has been reviewed on the basis of ultimate limit states (ULS) and serviceability limit states (SLS).

6.7.1. Ground-Bearing Raft Foundation

6.7.1.1. Ultimate Limit State Considerations (ULS)

The ultimate limit state condition for a raft system has been reviewed on the basis of the proposed basement depth and net increase in bearing pressure.

The proposed development involves the removal of approximately 9.5m of overburden equating to a vertical stress removal in the order of 184kPa across the site. The global loading pressure from the proposed development is not anticipated to exceed this value, a raft solution is therefore satisfactory from a global safe bearing capacity / ULS perspective.

The viability of a raft solution is dependent upon localised peaks in bearing pressure in heavily loaded areas and potential zones where water pressure uplift and heave pressure may govern. The design will need to consider complex soil-structure interaction mechanisms and the distribution of loading through the proposed development superstructure and substructure. This is particularly important where settlement-reducing piles are present, as these relatively stiff elements will attract significant amounts of building loading. The raft would span between the concrete box walls and piles, and the impact of the destabilising heave and uplift pressure would be most severe at the centre of the span where there are no local stabilising loads to provide mitigation effects.

6.7.1.2. Serviceability Limit State Considerations (SLS)

The estimated performance of a raft foundation under serviceability conditions (including differential settlements) is likely to govern its viability and control key design parameters such as the raft thickness and uplift mitigation measures.

The design will need to consider complex soil-structure interaction mechanisms, taking into consideration areas of high pressure and zones where water pressure uplift and heave pressure may govern. Total and differential raft settlements and structural forces within the raft should be assessed, taking into account the following:

- The relative soil-raft stiffness and impact of any stiff settlement-reducing pile elements.
- The influence of the superstructure or substructure stiffness on the effective raft stiffness.
- The influence of variations in the soil stiffness and thickness of the compressible layer.
- The influence of soil nonlinearity and local yield.

It is noted that a raft foundation system will require a greater degree of analytical rigour and design assurance. It is recommended that the design assurance and stakeholder approval facets be reviewed alongside the design optioneering exercise currently underway.

A preliminary serviceability calculation for a raft foundation without settlement-reducing elements has been performed on the basis of a uniformly distributed building load of 50kPa (assuming 10kPa per storey) across the entire building footprint, yielding settlements of 20 to 25mm.

However, it is likely that in the long term condition the design of a raft foundation will in this case be governed by long term combined groundwater and heave pressures. Tension piles may be required both to satisfy UPL / buoyancy assessments and to restrain peak curvatures / spanning action of the raft under these uplift pressures.

It is recommended that further detailed bounding analyses are undertaken, if a raft / piled raft foundation system is favoured, order to review maximum settlements and long term uplift movements.

A preliminary equivalent subgrade spring stiffness of the soil beneath the raft has been determined to aid the design development, with values of 2 to 2.5Mpa/m. These values should be reviewed and updated as the design of the raft progresses and where more detailed analytical tools are adopted.

6.8. Pile Foundations

Pile foundations may also be considered for the proposed development. Pile construction methods that would suit the site include mini piling for small diameters and contiguous flight auger (CFA) piling. Rotary bored piling techniques may also be considered, adopting *dry* boring in the London Clay.

6.8.1. Ultimate Limit State

The geotechnical capacity of a single pile has been evaluated by the Method of Calculation, as defined in EC7. The design geotechnical pile resistance, R_d, may be assessed as the sum of the characteristic shaft ($R_{s,k}$) and base ($R_{b,k}$) resistance reduced by appropriate partial factors (γ), as shown in the equation below:

$$R_d = R_{s,d} + R_{b,k} = \frac{R_{s,k}}{\gamma_s \gamma_{Rd}} + \frac{R_{b,k}}{\gamma_s \gamma_{Rd}}$$

The evaluation of unit shaft resistance, f_s, and unit base resistance, f_b, is based on the following equations:

Cohesive Soils (α-method)	$f_s = \alpha\, c_u$
	$f_b = N_c\, c_u$
Cohesionless soils (β-method)	$f_s = K_S \tan\delta$
	$f_b = \sigma'_v\, N_q$

α: refers to the soil adhesion factor.

K_s: earth pressure coefficient for pile interface friction, δ: angle of interface friction.

N_c & N_q, refer to bearing coefficients.

Equivalent safe working loads piles in general accordance with EC7 and BS 8004:2015 have been provided as part of this GDR. The methodology adopted to determine the safe working loads is presented in Appendix A.

Table 6.3 summarises the recommended pile design parameters to evaluate unit shaft and base resistance of the anticipated materials.

Table 6.3 Recommended pile design parameters

Stratum	Method	α	K_s	δ/φ'	N_c	N_q
Made Ground	No contribution to capacity					
London Clay	α-method	0.5	-	-	9.0	-

Table 6.4 below provides an overview of compressive and tensile equivalent safe working loads for piles at varying depths below the basement formation level, calculated in accordance with EC7 and non-conflicting guidance.

Table 6.4 Pile equivalent safe working loads (kN) in axial compression l and tension (T)

Length (m)		12.5		15.0		17.5		20.0		22.5	
Pile Type		C	T	C	T	C	T	C	T	C	T
Pile Diameter (mm)	450	400	275	500	350	605	430	715	515	835	605
	600	565	370	695	465	835	575	985	685	1150	810
	750	735	460	905	585	1085	715	1275	860	1480	1010
	900	920	555	1125	700	1345	860	1575	1030	1825	1215

1. Pile capacities calculated using EC7 NA Design Approach 1 Combination 2 partial factors.
2. Serviceability limit state design partial factors in accordance with BS 8004:2015.
3. Length taken from basement formation level (approximately +38.0mOD).
4. Diameters are tool diameters.
5. Lateral pile loading has not been considered in the provided capacities.
6. Long-term water table adopted.
7. GEO evaluation only. STR verification to be completed in accordance with BS EN 1992.

6.8.2. Serviceability Limit State

The performance of individual piles under working load tests should be defined as part of the piling works specification. The settlement of individual piles under working loads are typically limited to 0.5% to 1.0% of the pile diameter. Group effects between any potential closely spaced pile foundations would result in greater settlements.

6.9. Concrete Aggressivity

5no. samples were taken for chemical testing from various strata. The characteristic sulphate values and resulting design sulphate and aggressive chemical environment for concrete classes are shown in Table 6.5 below.

Table 6.5 Concrete aggressivity assessment

Stratum	No. of samples	Water Soluble Sulphate (mg/l)	Total Sulphur (%)	Acid Soluble Sulphate (%)	pH value	Design Sulphate (DS) Class	Aggressive Chemical Environment for Concrete (ACEC) Class

Made Ground	2	90	0.04	0.28	8.2	DS-1	AC-1s
London Clay	3	3580	2	5.72	7.7	DS-5	AC-4s

Based on the above, the Design Sulphate Class for London Clay is DS-5 and the corresponding ACEC Class is AC-4s for static groundwater. However, given that the London Clay will not be subject to significant disturbance or exposure to oxygen over extended periods of time, this may be reduced to DS-2 and AC-1s for selected structures and construction means and methods, subject to confirmation by the geotechnical engineer.

6.10. Other Risks/Further Considerations

Further ground engineering considerations are summarised below:

- **Below ground obstructions**. No significant obstructions were noted in the ground investigation; however, the project team should consider the presence of potential below ground obstructions across the site (natural and anthropogenic).
- **Thickness of Made Ground**. Although unlikely, it is possible upon inspection of the basement formation that some additional thickness of Made Ground and/or soft spots may be encountered. Provisions should be made in the scheme earthworks specification for testing and inspection of substructure formations by a suitably competent groundworks engineer. This risk should be considered appropriately by the wider project team as the scheme and design proposals progress.
- **Groundwater ingress:** Whilst significant dewatering is not anticipated to be required for the proposed development works, it is suggested that appropriate provisions for nominal dewatering via sumps and pumps are made with regards to construction means and methods, temporary works, and groundwater control. Any requirements for dewatering and the subsequent ground movement should be considered as part of the design proposals, as uncontrolled dewatering can be detrimental to the construction proposals.
- **Site logistics and construction means and methods**. Specialist contractor advice should be sought in relation to site access, logistics and any plant limitations and constraints.
- **Surrounding buildings and third-party assets**: A ground movement assessment, looking at the impact of the proposed basement construction on surrounding buildings, will be required to assist with Planning approvals, Party Wall liaison and to facilitate detailed design of the proposed scheme. The risk of damage to existing buildings due to ground movements associated with construction and operation of the proposed building is generally submitted to the Local Authority for review of Planning consent. The assessment of risk to buildings is usually based on Burland's Damage Scale. The development site is located within the Borough of Camden, and Planning approval requires demonstration that the category or degree of potential damage to surrounding buildings does not exceed *Category 1 – Very Slight*. It is also common for Party Wall reviewers and representatives to also request Category 1 as a threshold. Ground movements may also impact buried services/utilities, substations (present on site) and surrounding roads and infrastructure, and further ground movements assessments may be required for these assets.

7. Quantitative Risk Assessment

The following section provides a detailed assessment of the available information including data gathered from the recent ground investigation. The CSM is then developed from that presented in the A-squared Phase I (summarised in the earlier sections of this Report). This section comprises a generic quantitative risk assessment (GQRA). The assessments in this section have been undertaken to assess potential land contamination issues with respect to the proposed development based on the unacceptable risks identified at PRA stage.

It is considered that risks to site workers and the environment during the construction phase of the proposed redevelopment can be appropriately managed by successful implementation of construction phase risk assessments and method statements (RAMS). The associated construction phase risks from potential contamination are not considered further in this document but should be appropriately considered and mitigated by the Principal Contractor in their preparation and implementation of construction phase RAMS and Construction Phase Plan (CPP).

7.1. Human Health Risk Assessment (Dermal Contact, Ingestion and Inhalation of Soil)

The soil sample laboratory analytical results have been compared to generic assessment criteria (GAC) considered appropriate for the assessing the risks to the specific proposed development. The selected human health GAC include the LQM/CIEH 'Suitable 4 Use Levels' (S4ULs). The S4ULs are based on Health Criteria Values that represent minimal or tolerable levels of risks to health as described in the Environment Age'cy's SR2 guidance.

For each chemical substance, S4ULs include individual GAC for six generic land uses (residential with home grown produce, residential without home grown produce, allotments, commercial and two Public Open Space land uses) and a range of Soil Organic Matter (SOM) contents. All toxicological and physical-chemical parameters used in the derivation of the S4ULs are presented and discussed in the source publication.

In some instances, selected human health GAC used in this Report have been applied from the DEFRA Category 4 Screening Levels (C4SLs), CL:AIRE GAC and the Environment Agency (EA) Soil Guideline Values. The source reference used for the human health GAC for each chemical determined is presented in the screening tables included in Appendix C. When available for a chemical compound, C4SLs have been used preferentially.

The generic land use scenario used for selecting GAC is 'residential without home grown produce'. This land scenario was selected as the exposure assumptions best represent the proposed site end-use and the existing residential land-uses located immediately adjacent to the site.

GAC have been derived for SOM values of 1%, 2.5% and 6%. Site specific SOM values for shallow soils were determined from selected samples collected during the site investigation. GAC derived assuming 1.0 % SOM have been used in this assessment on a conservative basis.

There is no published human health GAC with respect to asbestos or asbestos containing materials (ACMs) in soil. Industry best practice document '*Asbestos in soil and Made Ground: a guide to understanding and managing risks', CIRIA C733, 2014*, identifies that soils containing asbestos concentrations of 0.001 % w/w may be able to liberate airborne fibre concentrations that exceed the contemporary occupational exposure limit for nuisance dust. However, as detailed in other research, including publications such as the *CAR-SOIL Industry Guidance (2016)*, in circumstances where very low concentrations of asbestos are identified in soils, the associated risks are considered low. In this study A2-SI adopt an asbestos human health GAC of <0.001 % w/w i.e. mitigation or further assessment is required if asbestos in soil is detected at or above <0.001 % w/w.

Screening tables comparing the soil laboratory results to the selected human health GAC are provided in Appendix D. All soil samples which underwent laboratory analysis for geo-environmental purposes were collected from Made Ground. Where laboratory method detection limits are greater than the human health GAC (if any) this is not recorded as an exceedance.

Individual laboratory results are presented within the Factual Report in Appendix C

In summary, the following exceedances of the selected human health GAC have been identified:

- Exceedances of the 'residential homes without home grown produce' GAC for lead in three Made Ground samples: 0.5m bgl at WS03 (1,150mg/kg), 0.5m bgl at WS05 (806mg/kg) and 0.5m bgl at WS06 (624mg/kg). The respective human health GAC is 310mg/kg.

The detected concentrations of lead are most likely representative of general Made Ground composition beneath the site and not from a singular hotspot. Exceedances can be observed in Figure 7.1

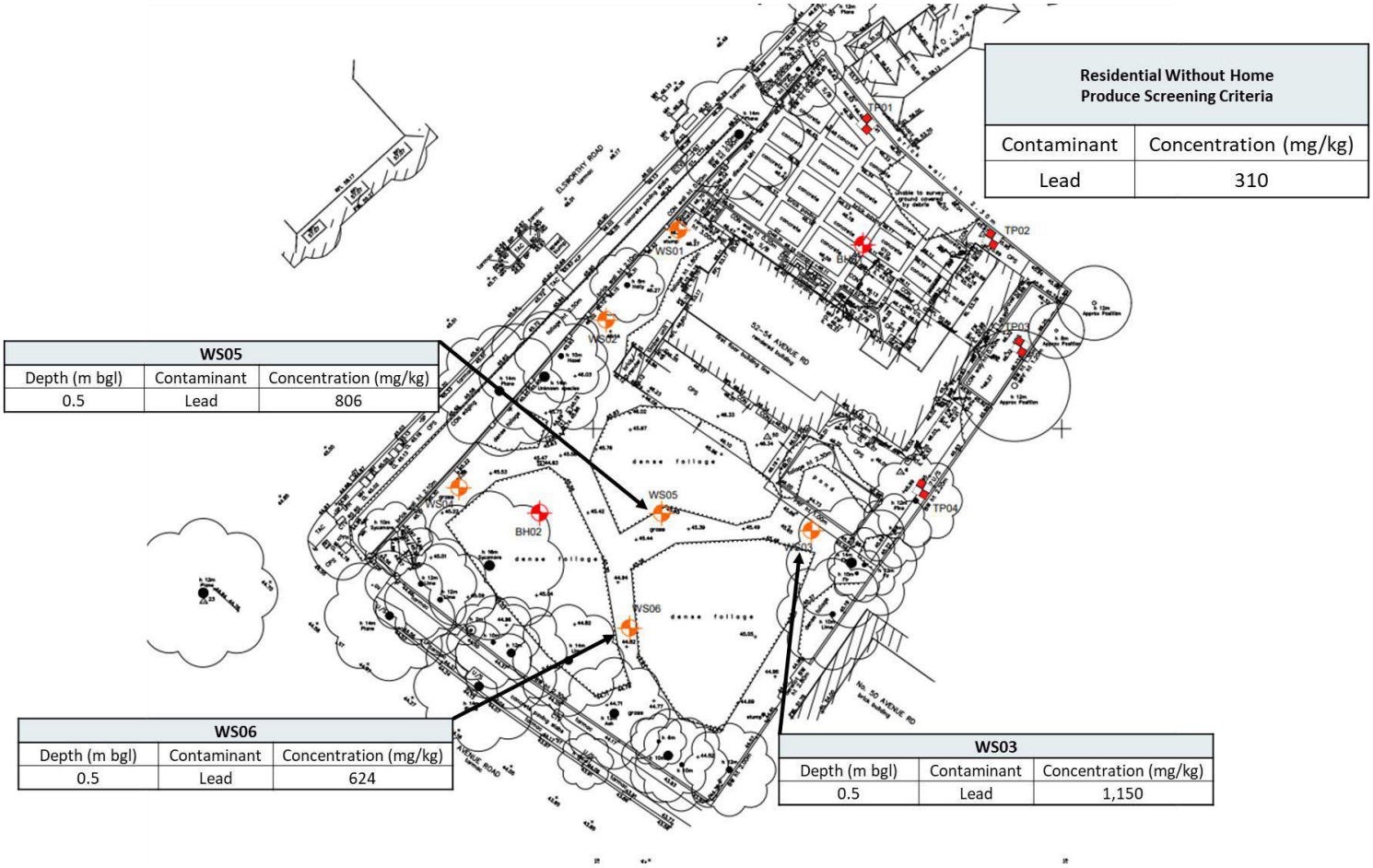

Table 7.1 Human health soil exceedances

The proposed development includes excavation to enable construction of a basement across the majority of the site footprint down to approximately 9m bgl. As the basement covers the majority of the site it is likely that shallow Made Ground including the areas of proposed soft-landscaping will all be excavated and the soils with the elevated lead concentrations removed from site. As the source of potential on-site contamination is to be removed from site there is no unacceptable risk to proposed on-site users via direct contact, ingestion and inhalation of soils. However, as shallow Made Ground is going to be removed from site, it is assumed this will be replaced with imported materials to construct the proposed soft landscaping areas. Any imported soils must undergo adequate testing and laboratory certificates of analysis must be produced and issued to the project Geo-environmental Consultant. Any soft-landscaping materials must also meet any relevant landscape architect specification for the site and all soils must achieve the relevant geotechnical

requirements. Permit / consent requirements for import need to be considered and this may mean that implementation of a Materials Management Programme (MMP) is required.

7.2. Buildings and Structures Risk Assessment

No gross contamination which might represent an unacceptable risk to the structural integrity of the proposed development and off-site buildings via direct contact has been encountered. Section 6.9 of this report states the design sulphate class that should be used on site.

8. Updated Conceptual Site Model (CSM) and Risk Assessment Summary

The detailed results of the quantitative risk assessments presented in Section 7 are summarised in Table 8.1. Table 8.1 presents an update of Table 2.2 based on the results of the investigation and GQRA presented in this report. The risk assessment matrix is provided in Appendix B. The ground conditions encountered indicate that prior to undertaking the GQRA there was no requirement for the PRA to be revised first.

It is considered that risks to site workers and the environment during the construction phase of the proposed redevelopment can be appropriately managed by successful implementation of construction phase risk assessments and method statements (RAMS). The associated construction phase risks from potential contamination are not considered further in this document but should be appropriately considered and mitigated by the Principal Contractor in their preparation and implementation of construction phase RAMS and Construction Phase Plan (CPP).

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
On-site	Direct contact with soil	Human health of proposed site end users	Yes (Exceedances however Made Ground expected to be excavated and removed from site. See Section 5.1. Clean and verified soils to be imported onto site for areas of soft landscaping)	Very low
	Inhalation of windblown soil			Very low
	Ingestion of soil			Very low
	Impact to water supply pipes followed by ingestion of contaminated water supply		Yes (No change from original PRA. See Table 2.2)	Very low
	Ground gas / soil vapour generation and inhalation		Yes (No change from original PRA. See Table 2.2)	Very low
	Inhalation of windblown soil from the site	Off-site human health	Yes (No change from original PRA. See Table 2.2)	Very low
	Off-site migration and direct contact with impacted soil		Yes (No change from original PRA. See Table 2.2)	Very low
	Off-site migration and ingestion of impacted soil			Very low
	Impact to water supply pipes followed by ingestion of contaminated water supply			Very low

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
	Ground gas / soil vapour generation, off-site migration and inhalation		Yes (No change from original PRA. See Table 2.2)	Very low
	Direct contact	On-site below ground structures (proposed)	Yes (Specified concrete class can be observed in Section 6.9	Low (Assuming specified concrete class is implemented
	Migration followed by ignition of ground gas / soil vapour		Yes (No change from original PRA. See Table 2.2)	Very low
	Off-site migration followed by direct contact	Off-site below ground structures	Yes (No change from original PRA. See Table 2.2)	Very low
	Off-site migration followed by migration followed by ignition of ground gas / soil vapour		Yes (No change from original PRA. See Table 2.2)	Very low
	Leaching and migration to groundwater via the unsaturated zone; Perched water percolation or lateral migration; Migration via advection and diffusion in the saturated zone; Vertical and lateral migration of free-phase product in the unsaturated and saturated zones; and Preferential pathways created via piling or borehole construction.	Controlled waters (groundwater)	Yes (No change from original PRA. See Table 2.2)	Very low
Off-site	On-site migration followed by direct contact or ingestion of soil	Human health of proposed site end users	Yes (No change from original PRA. See Table 2.2)	Very low
	Inhalation of windblown soil from off-site		Yes (No change from original PRA. See Table 2.2)	Very low
	On-site migration followed by impact to water supply pipes and ingestion of the water supply		Yes (No change from original PRA. See Table 2.2)	Very low

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
	Ground gas / soil vapour generation, on-site migration and inhalation		Yes (No change from original PRA. See Table 2.2)	Very low
	On-site migration followed by direct contact	On-site below ground structures (proposed)	Yes (No change from original PRA. See Table 2.2)	Very low
	On-site migration followed by ignition of ground gas / soil vapour		Yes (No change from original PRA. See Table 2.2)	Very low

The PRA summarised in Table 2.2 identifies unacceptable risks to on-site human health (via direction contact, ingestion and inhalation of soils) due to potential on-site sources of contamination. Other unacceptable risks identified included to on-site property from direct contact via 'sulphate attack' due to elevated sulphate levels in soils at the site. Following GQRA as presented in this report, although unacceptable lead concentrations have been identified in Made Ground, the proposed development plans indicate that Made Ground will be excavated and removed from site to enable basement construction. On this basis, the source of contamination will be removed and there is no unacceptable risk once the proposed development is complete. Section 6.9 of the report states the appropriate design sulphate class to be used on site. If appropriate concrete is installed below ground as part of the proposed development, in accordance with the design class stated herein, then there is no unacceptable risk to on-site property receptors (buildings and buried structures).

It is anticipated that imported soil will be required to construct the proposed soft-landscaping areas. This soil will need to be appropriately verified to evidence suitability for use. Depending on the volume of soil import required, an MMP or other methodology may be required to evidence that the import does not include use of waste materials (waste exemptions and regulatory position statement are potential alternative options to a MMP).

9. Supervision and Monitoring

9.1. Introduction

A supervision and monitoring plan will be required to support the management of geotechnical risks during construction.

The supervision and monitoring plan should state (reproduced from EC7):

- The purpose of each set of observations or measurements.
- The parts of the structure, which are to be monitored and the locations at which observations are to be made.
- The frequency with which readings are to be taken.
- The ways in which the results are to be evaluated.
- The range of values within which the results are to be expected.
- The period of time for which monitoring is to continue after construction is complete.
- The parties responsible for making measurements and observations, for interpreting the results obtained and maintaining the instruments.

An Action Plan document and procedure should be developed in order to present the excavation and construction performance criteria, alongside agreed trigger levels for the primary phases of construction (in order to safeguard adjacent assets).

The development of the Action Plan will need to meet the design assurance requirements of all relevant stakeholders. The Action Plan should embody input from the design and construction teams and should include appropriate mitigation measures should any aspect of the substructure performance not be met.

9.2. Preliminary Recommendations

The supervision and monitoring plan will require further development as the scheme and detailed design of the structure/substructure are progressed. Table 9.1 provides preliminary recommendations regarding monitoring and supervision requirements for the proposed development.

Table 9.1 Preliminary monitoring and supervision requirements

Item	Monitoring/supervision description	Measurement
1	Monitoring of the adjacent buildings, assets, and infrastructure during the progression of the works in order to satisfy any potential Party Wall agreements and design assurance criteria.	X, Y, Z displacements
2	Monitoring of groundwater levels during excavation works.	Groundwater elevation
3	Supervision of ground works and basement excavation to be overseen by suitably experienced contractor.	-

10. Conclusions and Closing Remarks

A2 Site Investigation Limited has been engaged by Heyne Tillett Steel Limited on behalf of DOMVS London to prepare a Geotechnical Design Report for the proposed redevelopment of 52 Avenue Road, London. The proposed works include the demolition of the current structure on-site, excavation of a lower ground floor and single storey basement, and construction of 12 three-storey housing units over three separate blocks.

This GDR comprises an interpretation of the findings from the recent ground investigation undertaken at the site and provides an assessment of key geotechnical and geo-environmental considerations associated with the proposed development. The aim of this report is to provide recommendations on primary geotechnical aspects relating to the scheme and to evaluate representative parameters, which will inform the design and performance assessment calculations/analyses to be carried out as part of design development. A geo-environmental assessment has also been undertaken based on the recommendations previously set out within *Phase I Desk Study Report* (ref: 1942-A2S-XX-XX-RP-Y-0001-01), proposed development plans presented herein and the ground investigation results.

All investigative works and sampling have been undertaken in general accordance with *BS10175:2011 Investigation of Potentially Contaminated Sites – Code of Practice*. The geo-environmental risk assessments have been undertaken in accordance principals set out in the *Land Contamination Risk Management (LCRM)* guidance, published by the EA on the UK Government website.

The ground conditions at the site location comprise a minimal thickness of Made Ground overlying London Clay. Design water tables in both short- and long-term conditions have been taken at +45mOD (i.e. circa 1mbgl at the top of the London Clay). Despite groundwater not being encountered during the works, the design of the basement must account for the pore water pressure field present within the London Clay.

Concrete aggressivity was determined based on laboratory testing, and concrete within the Made Ground and London Clay Formation should conform to DS-5 and AC-4s assuming a 50-year design life subject to considerations in Section 6. Depending on the precise proposals and adopted forms of construction of below ground elements, lower sulphate resisting grades may be adopted, as defined herein. If these are followed then there is no unacceptable risk to on-site buildings

Potential soil retention systems to support the excavation have been discussed and shallow/deep foundation options suitable for the development have been discussed in the context of the currently proposed raft/piled raft and contiguous/sheet pile walls. Recommendations are presented in Section 6.

The geo-environmental assessments presented in this report include generic quantitative risk assessment (GQRA) with respect to human health and buildings / structures (as recommended at PRA stage). Following GQRA (as presented in this report), although unacceptable lead concentrations have been identified in Made Ground, the proposed development plans indicate that Made Ground will be excavated and removed from site to enable basement construction. On this basis, the source of contamination will be removed and there is no unacceptable risk once the proposed development is complete. Section 6.9 of the report states the appropriate design sulphate class to be used on site. If appropriate concrete is installed below ground as part of the proposed development, in accordance with the design class stated herein, then there is no unacceptable risk to on-site property receptors (buildings and buried structures). Since no unacceptable risk has been identified no Remediation Strategy is required for the proposed development.

It is anticipated that imported soil will be required to construct the proposed soft-landscaping areas. This soil will need to be appropriately verified to evidence suitability for use. Depending on the volume of soil import required, an MMP or other methodology may be required to evidence that the import does not include use of waste materials (waste exemptions and regulatory position statement are potential alternative options to an MMP). A2-SI can assist with the verification of soils proposed for import as well as assisting the evidencing of non-waste status when the time comes. The verification evidences should be presented in a suitable Verification Report for the proposed development.

Appropriate RAMS and CPP for the construction phase should also be prepared, and this report should be made available to those preparing the Health & Safety File for the operational phase of the proposed development.

The risks to maintenance workers during the operational phase of the proposed development can be managed via provision of information to be incorporated into site operational Health & Safety File. This GDR and the Phase I Desk Study should be made available to those compiling the Health & Safety File.

As stated in the Phase I Desk Study, there is potential ACMs to be present within the current building fabric at the site. This can be addressed by commissioning an asbestos Demolition and Refurbishment Survey for the relevant areas of the current building to be demolished. If ACMs are identified then their onward management should be informed by an asbestos specialist, but it is considered that appropriate ACM removal will be required prior to any phases of demolition.

In future, should the site redevelopment plans change from the assumptions included herein then the assessments and recommendations will need to be updated.

Appendix A: Pile Safe Working Load Calculation Summary

Safe working load (SWL) capacities should be used with SLS loading, and contain the following relevant pile and concrete resistance checks:

- BS EN 1997-1 ULS GEO Design Approach 1 Combination 1 Pile Resistance.
- BS EN 1997-1 ULS GEO Design Approach 1 Combination 2 Pile Resistance.
- BS 8004:2015+A1:2020 SLS Ultimate Shaft Friction Settlement Check.
- BS EN 1992-1-1 ULS STR Pile Resistance.

A full summary of the partial factors implemented in each of the checks is shown in the table below. The partial factors presented are in accordance with BS EN 1997-1 (with the UK National Annex) Design Approach 1 (DA1) for contiguous flight auger (CFA) or bored piles.

DA1 design combinations are as follows:

- Combination 1 (C1): A1 + M1 + R1.
- Combination 2 (C2): A2 + M1 + R4.

Table A.1 Summary of design guidance and partial factors considered in the pile safe working loads

Check	Design Guidance	Action Factors (A)	Material Factors (M)	Resistance Factors (R)
ULS GEO Design Approach 1 Combination 1 Pile Resistance	BS EN 1997-1 BS 8004:2015 + A1:2020	γ_G = 1.35, γ_Q = 1.50	-	γ_s = 1.00, γ_b = 1.00, γ_{Rd} = 1.40
ULS GEO Design Approach 1 Combination 2 Pile Resistance	BS EN 1997-1 BS 8004:2015 + A1:2020	γ_G = 1.00, γ_Q = 1.30	-	γ_s = 1.60, γ_b = 2.00, γ_{Rd} = 1.40
SLS Ultimate Shaft Friction Settlement Check	BS 8004:2015 + A1:2020	γ_G = 1.00, γ_Q = 1.00	-	$\gamma_{s,SLS}$ = 1.20
ULS STR Pile Resistance	BS EN 1992-1-1	γ_G = 1.35, γ_Q = 1.50	α_{cc} = 0.85, γ_c = 1.5, k_f = 1.1	-

A1 and A2 are partial factor sets applied to the permanent (γ_G) and variable loading (γ_Q) applied to the pile and are independent of additional pile testing. Where action partial factors are applied, these have been converted into a lump factor based on an indicative dead/live load split of the building. Where loading has been provided, the load split is determined from this. Where no loading is provided, indicative splits of 60%/40% or 70%/30% (depending on the nature of the scheme) are adopted.

M1 is a material partial factor set, applied to the soils (1.00 for both combinations).

R1 and R4 are partial factors applied to the base and shaft resistance of the pile. An additional Model Factor (γ_{Rd}) is applied to the reduced base and shaft resistances in both combinations. In general, partial factors included in SWL capacities do not consider the presence of working load or preliminary pile testing. If working load or preliminary pile testing is proposed, the SWL values can be amended accordingly.

The settlement of the pile foundation is verified within the SWL calculations by ensuring that the characteristic compressive force applied to the pile is less than the characteristic value of the pile's ultimate shaft friction. Including a serviceability shaft friction partial factor $\gamma_{s,SLS}$ is one method of further controlling the settlement of an individual pile, and the SWL calculations apply a factor of $\gamma_{s,SLS}$ = 1.20 to limit the settlement of the pile to less than 1% of the pile diameter.

The concrete axial capacity of the pile has been calculated in accordance with BS EN 1992-1-1 adopting a standard pile concrete cylinder strength of f_{ck} = 28MPa and reduced diameter d_{nom} (in accordance with BS EN 1992-1-1, 2.3.4.2(2)). An additional safety factor multiplier of k_f = 1.1 is also applied in addition to the concrete material partial factor of γ_c = 1.5. α_{cc} is taken as 0.85. Structural resistance from steel reinforcement is not considered.

Appendix B: Geo-environmental Risk Assessment Matrix

A2SI qualitative risk assessment for geo-environmental purposes is undertaken in accordance with *CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001)*. The CIRIA C552 risk categories and the assessment methodology are summarised below in Table B.1, Table B.2 and Table B.3. Potential magnitude and potential likelihood are both classified to enable a risk rating to be assessed.

Potential magnitude takes into account the potential consequences should a complete source–pathway–receptor linkage be present. Potential magnitude is classified as per Table B.1.

Table B.1 Definition of potential magnitude of consequence

Category	Definition
Severe	Acute risks to human health, catastrophic damage to buildings / property, major pollution to controlled waters.
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures.
Mild	Pollution of non-sensitive waters, minor damage to buildings or structures.
Minor	Damage to non-sensitive ecosystems or species.

Potential likelihood takes into account the presence of the hazard and receptor as well as the integrity of the pathway for exposure, i.e., whether a source-pathway-receptor linkage is present or not. Potential likelihood is classified as per Table B.2.

Table B.2 Definition of potential likelihood of exposure

Category	Definition
High Likelihood	Pollutant linkage may be present and is almost certain to occur in the long-term. Or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that it will occur over the long-term.
Low Likelihood	Pollutant linkage may be present, and there is a possibility that it will occur, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present, but it is improbable that it will occur.

The potential magnitude of consequence and the potential likelihood of exposure are assessed in accordance with the risk matrix presented in Table B.3.

Table B.3 Geo-environmental risk assessment matrix

		Potential Magnitude of Consequence			
		Severe	Medium	Mild	Minor
Potential Likelihood of Exposure	High Likelihood	Very High	High	Moderate	Low to Moderate
	Likely	High	Moderate	Low to Moderate	Low
	Low Likelihood	Moderate	Low to Moderate	Low	Very Low

	Unlikely	Low to Moderate	Low	Very Low	Very Low

Appendix C: Factual Report

A2 Site Investigation

52 Avenue Road

Factual Report

December 2021

15721-A2SI-XX-XX-RP-X-0001-00

Project Name	52 Avenue Road
Project Number	15721
Client	DOMVS Group London
Document Name	Factual Report

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Appendices

Appendix A: Exploratory Hole Location Plan

Appendix B: Exploratory Hole Logs

Appendix C: Gas and Groundwater Monitoring Results

Appendix D: Geotechnical Laboratory Testing

Appendix E: Geo-environmental Laboratory Testing

1. Introduction

A2 Site Investigation Ltd were instructed by DOMVS group to undertake a geotechnical and geo-environmental ground investigation at 52 Avenue Road, London, NW8 6HS.

This first issue report describes the work undertaken and presents the findings to date.

2. Site Location

The development site is located at 52 Avenue Road, London, NW8 6HS as shown in Figure 2.1. The approximate National Grid reference of the site is TQ 27004 83841 and falls within the administrative boundaries of the London Borough of Camden. The site is bound by Elsworthy Road to the northwest and Avenue Road (B525) to the southwest. The eastern side of the site is bound by gardens of neighbouring properties. The existing site is a dilapidated residential property with substantive long term unmaintained gardens.

Figure 2.1 Site location, surroundings and extent marked in red

3. Anticipated Ground Conditions

From a review of available geological maps and memoirs, including the online British Geological Survey "Geology of Britain Viewer", the following geological sequence was anticipated.

Table 3.1 Anticipated geological sequence

Unit	Depth[1] (mbgl)	Thickness (m)	Description
Made ground	0.0	0.5	Grass over topsoil with roots and rootlets
Weathered London Clay	0.5	2.5	Firm to soft brown CLAY.
London Clay	3	>40	Stiff bluish grey fissured silty CLAY

1. Depth refers to top of stratum.

4. Purpose and Scope of the Investigation

The purpose of the investigation was to recover data on the ground and groundwater conditions at the site.

The fieldwork was undertaken between 1st – 5th November 2021 comprising of the following scope of works:

- 2 No. cable percussion boreholes (BH01 & BH02) to 40mbegl to facilitate the collection of geotechnical and geo-environmental samples and to install a gas and groundwater monitoring well.
- 6 No. window sampler boreholes (WS01-WS06) to 5mbegl or refusal to include an investigation along the boundary to Elsworthy Road to determine presence of historic River Tyburn and to facilitate the collection of environmental samples and to install a well for gas and groundwater monitoring.
- 4 No. Hand excavated trial pits to (TP01-TP04) determine the existing boundary wall foundations and to facilitate the collection of geotechnical and geo-environmental samples
- 3 No. return site visits to monitor gas and groundwater installations

5. Limitations of Report

This report has been prepared in accordance with the specification provided by the client. The data reported relates to the specific locations where each exploratory hole was formed and may not represent the ground and groundwater conditions of the site as a whole. Furthermore, it should be considered that groundwater levels may vary throughout the year due to seasonal conditions and other influences such as flooding and leaking mains, storm drainage and foul water systems.

6. Standards

The site investigation, soil descriptions and laboratory testing were undertaken in accordance with following standards

- UK Specification for Ground Investigation 2nd Edition, published by ICE Publishing (2012)
- BGS Geology of Britain Viewer: 2018. www.bgs.ac.uk. British Geological Survey
- British Standards Institution BS 5930:2015+A1:2020, Code of practice for site investigations.
- British Standards Institution BS 10175:2011+A2:2017, Investigation of potentially contaminated sites – code of practice.
- British Standards Institution BS EN ISO 14688-1:2018, Geotechnical investigation and testing, classification of soil. Identification and description.

- British Standards Institution BS EN ISO 14688-2:2018, Geotechnical investigation and testing. Identification and classification of soil. Principle for a classification.
- British Standards Institution BS EN ISO 22475-1 : 2006 : Geotechnical investigation and testing – Sampling methods and groundwater measurements - Part 1 Technical principles for execution.

7. Ground Investigation Summary

7.1. Fieldwork Overview

A walkover was conducted on the first day of the ground investigation and confirmed the anticipated layout of the site.

Following a review of all available service information and site reconnaissance, the borehole location was scanned using Electromagnetic (CAT & Genny) techniques to check for services within proximity to the exploratory hole location.

A preliminary UXO desk study was performed by 1st Line Defence Ltd. Based on the results; it was not necessary to undertake further mitigation measures during fieldwork.

All works were supervised by a senior ground engineer.

An exploratory hole location plan is shown in Appendix A.

7.2. Window Sample Boreholes

The window sample boreholes (WS01-06) were progressed using a track window sample with sampling to a maximum depth of 5m. Standard Penetration Tests (SPTs) were carried out in the borehole. All soils encountered were logged on site and samples recovered for geotechnical and geo-environmental laboratory analysis.

A standpipe piezometer was installed in all the window sample boreholes for subsequent monitoring of groundwater levels.

7.3. Cable Percussion Borehole

The boreholes (BH01 & BH02) were progressed using a standard cable percussion rig with sampling to a maximum depth of 40m. Standard Penetration Tests (SPTs) were carried out in the borehole. All soils encountered were logged on site and samples recovered for geotechnical and geo-environmental laboratory analysis.

A standpipe piezometer was installed in both cable percussion boreholes for subsequent monitoring of groundwater levels.

7.4. Trial Pits

The hand excavated trial pits (TP01-04) were dug to a maximum depth of 1.4mbgl. The pits allowed for the determination of the geometry of the existing foundations. A photographic record of the trial pits, the location and results are presented in Appendix B. All soils encountered were logged on site and samples recovered for geotechnical and geo-environmental laboratory analysis.

7.5. Gas and Groundwater Monitoring Installations

Groundwater monitoring pipes were installed in all boreholes drilled, comprising 50mm internal diameter PVC casing and wellscreen. Details are shown in Table 7.1 below:

Table 7.1 Gas and Groundwater Monitoring Installations

Location Ref	Base of Borehole (mbgl)	Installation Diameter (mbegl)	Type of Installation	Bottom of Response Zone (m bgl)	Top of Response Zone (m bgl)	Strata
BH01	40	50mm	SP/G	5	2	London Clay Formation
BH02	40	50mm	SP/G	2	1	Made Ground
WS01	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay
WS02	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay
WS03	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay
WS04	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay
WS05	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay
WS06	5	50mm	SP/G	1	0.5	Made Ground and Weathered London Clay

Key

SP – Standpipe

SP/G – Standpipe with Gas Monitoring Valve

8. Ground Conditions

8.1. Encountered Geology

The following ground conditions were encountered at the site. Details are shown in Table 8.1 below; Exploratory hole logs are presented in Appendix B.

Table 8.1 Ground Conditions Encountered

Unit	Minimum Depth (mbegl)	Maximum Depth (mbegl)	Thickness (m)	Description
Made Ground	0.0	0.7	0.7	Firm grey, brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subangular of brick, concrete and flint.
London Clay Formation	0.7	40	39.3	Firm mottled grey slightly sandy, silty CLAY.

Detailed exploratory hole logs can be found in Appendix B.

9. Laboratory Testing

9.1. Geotechnical Testing.

Geotechnical laboratory testing was undertaken by GEO Site & Testing Services Ltd (GSTL) and The Environmental Laboratory Ltd (ELAB), both United Kingdom Accreditation Service (UKAS) accredited laboratory, in accordance with relevant standards.

The following type and number of tests scheduled is shown in Table 9.1 below and the results are presented in Appendix D.

Table 9.1 Geotechnical Testing

Test Description	Number of Tests
Moisture Content BS 1377:1990 - Part 2	4
Liquid & Plastic Limit BS 1377:1990 - Part 2	4
Triaxial - 100mm single stage	20
Natural Shear Strength by Hand Vane (3 measurements)	4
BRE Suite SD1	5

9.2. Geo-environmental Testing

Selected soil and groundwater samples were sent for geo-environmental laboratory testing which was undertaken by The Environmental Laboratory (ELAB), a United Kingdom Accreditation Service (UKAS) accredited laboratory. ISO17025 and MCERTS accredited methods were specified where applicable and can be seen on the laboratory testing certificates presented in Appendix E. Table 9.2 presents a summary of the scheduled tests;

Table 9.2 Geo-environmental Testing - Laboratory Analysis

Test Description	Number of Tests
A2SI Risk Assessment Suite (Soil)	4

10. Gas, Vapour and Groundwater Monitoring

The three rounds of gas and groundwater monitoring had been undertaken on 11/11/21, 23/11/21 and 09/12/21.

10.1. Ground Gas/Vapour

Gas monitoring was undertaken using a calibrated Gas Data GFM436 hand-held gas analyser and a calibrated MiniRae Lite ATEX Photo Ionisation Detector (PID). A summary is shown in Table 10.1 below; Full results of ground gas monitoring can be found in Appendix C.

Table 10.1 Ground Gas Monitoring Results

Exploratory Hole Reference	Monitoring Round Date	Peak Flow Rate (l/hr)	Minimum O_2 (%)	Maximum CO_2 (%l)	Maximum CH_4 (%)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Barometric Pressure (mb)
BH01	11/11/21	0	20.7	0	0	0	0	0	1017
BH01	23/11/21	0	20.1	0	0	0	0	0	1023
BH01	09/12/21	0	15.1	0.7	0	0	0	0	993
BH02	11/11/21	0	20.7	0	0	0	0	0	1020

Exploratory Hole Reference	Monitoring Round Date	Peak Flow Rate (l/hr)	Minimum O_2 (%)	Maximum CO_2 (%l)	Maximum CH_4 (%)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Barometric Pressure (mb)
BH02	23/11/21	0	19.0	1.7	0	0	0	0	1022
BH02	09/12/21	0	20.3	0	0	0	0	0	993
WS01	11/11/21	0	20.7	0	0	0	0	0	1017
WS01	23/11/21	0	19.6	0.9	0	0	0	0	1023
WS01	09/12/21	0	20.0	0	0	0	0	0	993
WS02	11/11/21	0	20.7	0	0	0	0	0	1017
WS02	23/11/21	0	19.0	1.7	0	0	0	0	1022
WS02	09/12/21	0	19.9	0.3	0	0	0	0	993
WS03	11/11/21	0	20.7	0	0	0	0	0	1017
WS03	23/11/21	0	17.5	2.4	0	0	0	0	1022
WS03	09/12/21	0	18.9	0.3	0	0	0	0	993
WS04	11/11/21	0	20.7	0	0	0	0	0	1017
WS04	23/11/21	0	18.7	2.3	0	0	0	0	1022
WS04	09/12/21	0	19.1	0.3	0	0	0	0	993
WS05	11/11/21	0	20.7	0	0	0	0	0	1017
WS05	23/11/21	0	19.2	1.2	0	0	0	0	1022
WS05	09/12/21	0	20.3	0.4	0	0	0	0	993
WS06	11/11/21	0	20.6	0	0	0	0	0	1017
WS06	23/11/21	0	15.8	4.1	0	0	0	0	1022
WS06	09/12/21	0	19.9	0.3	0	0	0	0	993

NF – Monitoring well not installed during visit.

10.2. Groundwater Monitoring

At the time of writing, two rounds of groundwater monitoring have been undertaken on 11/11/21, 23/11/21 and 09/12/21. A summary is provided in Table 10.2 The results to date are presented in Appendix C.

The groundwater levels were measured using a calibrated water level dipmeter.

Table 10.2 Groundwater Monitoring Results (mbegl)

Exploratory Hole Reference	Depth of Monitoring Well (mbgl)	Round 1 11/11/21 (mbgl)	Round 2 23/11/21 (mbgl)	Round 3 09/12/21 (mbgl)	Notes
BH01	4.7	Dry	Dry	Dry	No Free Phase Product Detected
BH02	1.7	Dry	Dry	Dry	No Free Phase Product Detected
WS01	1.06	Dry	Dry	Dry	No Free Phase Product Detected
WS02	1.17	Dry	Dry	Dry	No Free Phase Product Detected
WS03	1.15	Dry	Dry	Dry	No Free Phase Product Detected
WS04	0.97	Dry	Dry	Dry	No Free Phase Product Detected
WS05	1.03	Dry	Dry	Dry	No Free Phase Product Detected
WS06	1.08	Dry	Dry	Dry	No Free Phase Product Detected

Appendix A: Exploratory Hole Location Plan

NORTH

GPS Note:
This survey is related to OSGB36(15) coordinate system by GPS 'rapid static' methods. No scale factor has been applied to the survey information. All horizontal distances taken from this drawing are ground distances.

Co-ordinate Table			
Station	Easting	Northing	Level
1	527041.587	183870.717	46.007
2	527013.931	183874.682	46.540
6	527032.774	183845.369	46.041
20	527027.814	183867.804	46.087
21	527011.713	183896.756	46.619
22	527071.952	183928.908	47.015
23	526958.413	183831.585	44.949
50	527018.583	183849.105	46.359

All levels related to Ordnance Survey active GPS network, at survey station 20.

DISCLAIMERS

Every effort has been made to confirm tree species on site, yet it is advised to confirm these details with an arborist before proceeding with any design.

Every effort has been made to confirm drainage run, type and size on site, yet it is advised to check these details against statutory authority records before proceeding with any design.

KEY

Survey control station △ 5
Gate (single)
Gate (double)
Tree Spread and Girth shown to scale
Banking
Foliage Line
Drainage run, direction of flow and pipe size 100
Approximate Position

ABBREVIATIONS

Air Handling Unit	AHU	Water Meter	WM
Belisha Beacon	BB	Eaves Level	EL
Bollard	BD	Ridge Level	RL
Borehole	BH	Roof Level	RFL
BT Inspection Cover	BT	Soffit Level	SFL
Cable Television Cover	CTV	Threshold Level	THL
Drainage Channel	DC	Parapet Wall Level	PWL
Electricity Cover	EC	Finished Floor Level	FFL
Electricity Pole	EP	Head Level	HL
Earth Rod	ER	Sill Level	SL
Fire Hydrant	FH	Cover Level	CL
Gas Valve	GV	Invert Level	IL
Gate Post	GP	No Visible Pipes	NVP
Gully	GY	Unable to Lift	UTL
Inspection Cover	IC	Foul Water	FW
Junction Box	JB	Sump Level	SUL
Kerb Outlet	KO	Surface Water	SW
Lamp Post	LP	Brick Paviors	BP
Manhole	MH	Concrete	CON
Marker Post	MK	Concrete Paving Slabs	CPS
Post	P	Flower Bed	F\B
Pipe	PE	Shrub Bed	S\B
Road Sign	RS	Tactile Paving	TAC
Rodding Eye	RE	Unsurfaced	U\S
Marker Post	MK	Brick Wall	BW
Sign Post	SP	Retaining Wall	RW
Stop Valve	SV	Chainlink Fence	CLF
Stop Tap	ST	Chestnut Paling Fence	CPF
Telegraph Pole	TP	Iron Railing Fence	IRF
Traffic Light	TL	Metal Security Fence	MSF
Vent Pipe	VP	Post and Chain Fence	PCF
Post and Rail Fence	PRF	Post and Wire Fence	PWF
Wooden Panel Fence	WPF		

Client
DOMVS LONDON

Project
52-54 AVENUE ROAD,
LONDON, NW8

Title
TOPOGRAPHICAL SURVEY

Drawing Number
TS21-451-1

Revision	Description	Date

Scale	Sheet	
1:200@A1	1 of 1	

Drawn by	Checked by	Date of Survey
JGS	AJB	SEP 2021

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Accreditations
chartered ices · THE SURVEY ASSOCIATION · SQUAS REGISTERED UKAS 0026 Certificate Number 7198 ISO 9001 · Constructionline Gold Member · CHAS Accredited Contractor CHAS.co.uk

Appendix B: Exploratory Hole Logs

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	1 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
				45.90		0.20	Brickwork (MADE GROUND)	
0.20-0.60	B1			45.85		0.25	CONCRETE	
0.50	ES2	VOC 0.0ppm		45.40		(0.45) 0.70	Firm greyish brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint. (MADE GROUND)	
0.60-1.20	B3						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION)	
1.00	D4							
1.00	ES5	VOC 0.0ppm						
1.50	SPT (s)	(1, 1, 1, 2, 2, 2) N = 7						
2.00	D6							
2.50-2.95	U7							
3.00	D8							
3.00	ES9	VOC 0.0ppm						
3.50	SPT (s)	(1, 2, 2, 2, 2, 2) N = 8						
4.10	D10							
4.50-4.95	U11	44 blows						
5.00	D12							
5.50	SPT (s)	(2, 3, 3, 3, 4, 5) N = 15						
6.00	D13							
6.00	ES14	VOC 0.0ppm						

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor A2 Site Investigation	Method/ Plant Used Dando 2000	Logged By FA	Status FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	2 of 6

SAMPLES & TESTS							STRATA	
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
7.00	D15						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION) *(continued)*	
7.00-7.45	U16	47 blows						
7.50	D17							
8.00	D18							
8.50	SPT (s)	(2, 3, 3, 4, 4, 5) N = 16						
9.00	D19							
9.00	ES20	VOC 0.0ppm						
10.00	D21							
10.00-10.45	U22	51 blows						
10.50	D23							
11.00	D24						...becomes grey silty CLAY from 11.0m... 11.00 ...becomes grey	
11.50	SPT (s)	(2, 2, 3, 4, 5, 5) N = 17						
12.00	D25							
12.00	ES26	VOC 0.0ppm						
13.00	D27							
13.00-13.45	U28	56 blows						
13.50	D29							

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation,1 Westminster Bridge Road,SE1 7XW, Telephone: 020 7021 0396

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	3 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA	Instrument/ Backfill
Depth (m)	Type No	Test Result					Description	
14.00	D30						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION) *(continued)*	
15.00	D31							
15.00	ES32	VOC 0.0ppm						
15.00	SPT (s)	(4, 4, 5, 5, 6, 6) N = 22						
16.00	D33							
16.50-16.95	U34	68 blows						
17.00	D35							
18.00	D36							
18.00	ES37	VOC 0.0ppm						
18.00	SPT (s)	(4, 4, 5, 5, 6, 7) N = 23						
19.00	D38							
19.50-19.95	U39	53 blows						
20.00	D40						...pocket of grey fine sand at 20.0m... 20.00 ...pockets of sand	
						(39.30)		

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	4 of 6

SAMPLES & TESTS							STRATA	
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
21.00	D41						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION) *(continued)*	
21.00	ES42	VOC 0.0ppm						
21.00	SPT (s)	(3, 4, 5, 6, 6, 6) N = 23						
22.00	D43							
22.50-22.95	U44	63 blows						
23.00	D45							
24.00	D46							
24.00	ES47	VOC 0.0ppm						
24.00	SPT (s)	(3, 4, 5, 5, 6, 7) N = 23						
25.00	D48							
25.50-25.95	U49	76 blows						
26.00	D50							
27.00	D51							
27.00	ES52	VOC 0.0ppm						
27.00	SPT (s)	(3, 6, 6, 8, 8, 9) N = 31						

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation,1 Westminster Bridge Road,SE1 7XW, Telephone: 020 7021 0396

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	5 of 6

SAMPLES & TESTS							STRATA	
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
28.00	D53						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION) *(continued)*	
28.50	U54	77 blows						
29.00	D55							
30.00	D56							
30.00	ES57	VOC 0.0ppm						
30.00	SPT (s)	(3, 6, 6, 7, 8, 9) N = 30						
31.00	D58							
31.50	U59	69 blows						
32.00	D60							
33.00	D61							
33.00	ES62	VOC 0.0ppm						
33.00	SPT (s)	(3, 6, 6, 7, 7, 8) N = 28						
34.00	D63							

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 03-11-21	46.10	E 527,031.0 N 183,870.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	6 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA	Instrument/ Backfill
Depth (m)	Type No	Test Result					Description	
35.00	D64						Firm brown mottled grey slightly sandy silty CLAY. Sand is fine. (LONDON CLAY FORMATION) *(continued)*	
36.00	D65							
36.00	ES66	VOC 0.0ppm						
36.00	SPT (s)	(4, 6, 9, 9, 11, 13) N = 42						
37.00	D67							
37.50	U68	83 blows						
38.00	D69							
39.00	D70							
39.00	ES71	VOC 0.0ppm						
				6.10		40.00		
40.00	D72						----- *Borehole Terminated at 40m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation,1 Westminster Bridge Road,SE1 7XW, Telephone: 020 7021 0396

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	04-11-21 / 05-11-21	45.56	E 526,997.0 N 183,842.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	1 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
				45.36		0.20	Firm browny grey sandy gravelly CLAY with fragmented roots. Sand is fine to coarse. Gravel is angular to subangular fine to coarse brick, concrete and flint. (MADE GROUND)	
0.20-1.50	B1							
0.20	D2							
0.50	ES3	VOC 0.0ppm					Firm to stiff reddish brown very sandy gravelly CLAY, with high cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint. Cobbles are angular of brick. (MADE GROUND)	
						(1.90)		
1.50-2.00	B4							
1.50	ES5	VOC 0.0ppm						
1.50	SPT (c)	(3, 4, 4, 5, 6, 6) N = 21						
				43.46		2.10		
2.20-2.50	B6						Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION)	
2.20	D7							
2.20	ES8	VOC 0.0ppm						
2.50	SPT (s)	(2, 4, 4, 5, 5, 6) N = 20						
3.00	D9							
3.00	ES10	VOC 0.0ppm						
3.50-3.95	U11	45 blows						
3.70-4.00	B12							
4.50	SPT (s)	(1, 2, 2, 3, 3, 3) N = 11						
5.00	D13							
6.00	D14							
6.00	ES15	VOC 0.0ppm						
6.00	SPT (s)	(1, 3, 3, 5, 5, 6) N = 19						

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project					Borehole No
52 Avenue Road					BH02
Job No	Start	Ground Level (mOD)	Co-Ordinates		Depth (m)
15721	Finish 04-11-21 / 05-11-21	45.56	E 526,997.0 N 183,842.0		40m
Client			SPT Energy Ratio		Sheet
DOMVS London			67%		2 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA	Instrument/ Backfill
Depth (m)	Type No	Test Result					Description	
7.00	D16						Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION) *(continued)*	
7.50-7.95	U17	59 blows						
8.00	D18							
9.00	D19							
9.00	ES20	VOC 0.0ppm						
9.00	SPT (s)	(2, 3, 3, 4, 5, 6) N = 18						
10.00	D21							
10.50-10.95	U22							
11.00	D23							
12.00	D24						...becomes grey from 12.0m...	
12.00	ES25	VOC 0.0ppm					12.00 ...becomes grey	
12.00	SPT (s)	(2, 3, 3, 4, 4, 5) N = 16						
13.00	D26							

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor A2 Site Investigation	Method/ Plant Used Dando 2000	Logged By FA	Status FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	04-11-21 / 05-11-21	45.56	E 526,997.0 N 183,842.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	3 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA	Instrument/ Backfill
Depth (m)	Type No	Test Result					Description	
14.00	D27						Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION) *(continued)*	
15.00	D28							
15.00	ES29	VOC 0.0ppm						
15.00	SPT (s)	(2, 3, 5, 5, 7, 7) N = 24						
16.00	D30							
16.50-16.95	U31	70 blows						
17.00	D32							
18.00	D33							
18.00	ES34	VOC 0.0ppm						
18.00	SPT (s)	(3, 4, 5, 6, 6, 7) N = 24						
19.00	D35							
19.50-19.95	U36	69 blows						
20.00	D37							

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 04-11-21 Finish 05-11-21	45.56	E 526,997.0 N 183,842.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	4 of 6

SAMPLES & TESTS						STRATA	
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend / Depth (Thickness)	Description	Instrument/ Backfill
21.00	D38				(37.90)	Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION) *(continued)*	
21.00	ES39	VOC 0.0ppm					
21.00	SPT (s)	(5, 5, 5, 6, 7, 7) N = 25					
22.00	D40						
22.50-22.95	U41	71 blows					
23.00	D42						
24.00	D43						
24.00	ES44	VOC 0.0ppm					
24.00	SPT (s)	(4, 7, 8, 9, 11, 14) N = 42					
25.00	D45						
25.50-25.95	U46	74 blows					
26.00	D47						
27.00	D48						
27.00	ES49	VOC 0.0ppm					
27.00	SPT (s)	(3, 4, 6, 7, 8, 8) N = 29					

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 04-11-21 Finish 05-11-21	45.56	E 526,997.0 N 183,842.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	5 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA	Instrument/ Backfill
Depth (m)	Type No	Test Result					Description	
28.00	D50						Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION) *(continued)*	
28.50-28.95	U51	65 blows						
29.00	D52							
30.00	D53							
30.00	ES54	VOC 0.0ppm						
30.00	SPT (s)	(4, 4, 5, 7, 7, 9) N = 28						
31.00	D55							
31.50-31.95	U56	70 blows						
32.00	D57							
33.00	D58							
33.00	ES59	VOC 0.0ppm						
33.00	SPT (s)	(4, 6, 9, 10, 13, 10) N = 42						
34.00	D60							
34.50-34.95	U61	74 blows						

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor A2 Site Investigation	Method/ Plant Used Dando 2000	Logged By FA	Status FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				BH02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 04-11-21 Finish 05-11-21	45.56	E 526,997.0 N 183,842.0	40m
Client			SPT Energy Ratio	Sheet
DOMVS London			67%	6 of 6

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
35.00	D62						Firm to stiff brown mottled grey silty CLAY. (LONDON CLAY FORMATION) *(continued)*	
36.00	D63							
36.00	ES64	VOC 0.0ppm						
36.00	SPT (s)	(3, 5, 7, 9, 10, 12) N = 38						
37.00	D65							
37.50-37.95	U66	87 blows						
38.00	D67							
39.00	D68							
39.00	ES69	VOC 0.0ppm						
39.00	SPT (s)	(4, 7, 8, 10, 13, 13) N = 44						
				5.56		40.00		
							----- *Borehole Terminated at 40m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:43.75	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	Dando 2000	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	01-11-21 / 01-11-21	46.39	E 527,010.0 N 183,872.0	5m
Client			SPT Energy Ratio	Sheet
DOMVS London			74%	1 of 1

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
							Firm brownish grey sandy gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint. (MADE GROUND)	
0.50	B1					(0.90)		
0.50	ES2	VOC 0.0ppm		45.49		0.90		
							Stiff brown slightly gravelly silty CLAY with occasional roots. Gravel is angular to subangular, fine to coarse of flint. Contains rootlets. (LONDON CLAY FORMATION)	
1.00	B3							
1.00	ES4	VOC 0.0ppm						
1.00	SPT (s)	(1, 2, 2, 2, 3, 3) N = 10						
							...becomes silty CLAY with no roots from 1.5m...	
							1.50 ...becomes silty CLAY with no roots.	
							...pocket of light yellow fine to medium sand at 1.6m...	
							1.60 ...pocket of light yellow fine to medium SAND.	
2.00	SPT (s)	(1, 3, 3, 3, 5, 5) N = 16						
						(4.10)		
3.00	SPT (s)	(1, 2, 2, 3, 4, 4) N = 13						
4.00	SPT (s)	(1, 2, 2, 4, 4, 5) N = 15						
				41.39		5.00		
5.00	SPT (s)	(2, 3, 4, 5, 5, 5) N = 19					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:37.5	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	WS Rig	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	01-11-21 / 01-11-21	46.14	E 527,004.0 N 183,866.0	5m
Client			SPT Energy Ratio	Sheet
DOMVS London			74%	1 of 1

SAMPLES & TESTS				STRATA				
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
						(0.90)	Firm brownish grey sandy gravelly CLAY with frequent roots. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint. (MADE GROUND)	
0.50	B1							
0.50	ES2	VOC 0.0ppm		45.24		0.90		
1.00	ES3	VOC 0.0ppm					Stiff brown slightly gravelly silty CLAY. Gravel is angular to subangular fine to medium flint. (LONDON CLAY FORMATION)	
1.00		(1, 0, 1, 2, 3, 3) N = 9					..becomes silty CLAY from 1.0m...	
1.50	D4						1.00 ...becomes silty CLAY.	
2.00		(2, 3, 4, 4, 5, 6) N = 19						
2.50	D5					(4.10)		
3.00		(2, 3, 4, 5, 4, 6) N = 19						
3.50	D6							
4.00		(2, 3, 4, 5, 4, 6) N = 19						
4.50	D7							
				41.14		5.00		
5.00		(2, 3, 4, 4, 5, 5) N = 18					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:37.5	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	WS Rig	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS03
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 02-11-21	45.66	E 527,023.0 N 183,842.0	5m
Client			SPT Energy Ratio	Sheet
DOMVS London			74%	1 of 1

SAMPLES & TESTS				STRATA				
Depth (m)	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	Description	Instrument/ Backfill
				45.46		0.20	Soft dark brown slightly gravelly silty sandy CLAY with frequent rootlets and roots. Sand is fine to medium. Gravel is angular to subangular, fine to medium of flint. (TOPSOIL)	
0.50 0.50	B1 ES2	VOC 0.0ppm				(0.70)	Soft to firm dark brown sandy gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint. (MADE GROUND).	
				44.76		0.90		
1.00 1.00 1.00	B3 ES4 SPT (s)	VOC 0.0ppm (1, 0, 1, 1, 1, 1) N = 4					Firm brown mottled grey silty CLAY. (LONDON CLAY FORMATION)	
2.00	SPT (s)	(1, 1, 2, 2, 3, 3) N = 10						
2.50	D5							
3.00	SPT (s)	(1, 2, 2, 7, 7, 4) N = 20				(4.10)		
3.50	D6							
4.00	SPT (s)	(1, 2, 3, 3, 4, 4) N = 14						
4.50	D7							
				40.66		5.00		
5.00	SPT (s)	(1, 1, 2, 3, 3, 4) N = 12					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m
3. Seepage at 4.0m.

All dimensions in metres Scale 1:37.5	Contractor A2 Site Investigation	Method/ Plant Used WS Rig	Logged By FA	Status FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS04
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	01-11-21 / 01-11-21	45.58	E 526,991.0 N 183,847.0	5m
Client		SPT Energy Ratio		Sheet
DOMVS London		74%		1 of 1

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
						(0.80)	Firm brownish grey very sandy very gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint. (MADE GROUND)	
0.50	B1							
0.50	ES2	VOC 0.0ppm		44.78		0.80		
							Firm brown silty CLAY (LONDON CLAY FORMATION)	
1.00	B3							
1.00	ES4	VOC 0.0ppm						
1.00		(1, 2, 2, 3, 3, 4) N = 12						
2.00		(2, 3, 4, 4, 5, 6) N = 19						
2.50	D5							
						(4.20)		
3.00		(2, 2, 4, 5, 5, 6) N = 20						
3.50	D6							
4.00		(2, 3, 4, 5, 6, 6) N = 21						
4.50	D7							
				40.58		5.00		
5.00		(1, 2, 4, 4, 4, 5) N = 17					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:37.5	Contractor	Method/ Plant Used	Logged By	Status
	A2 Site Investigation	WS Rig	FA	FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS05
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 02-11-21	45.44	E 527,008.0 N 183,845.0	5m
Client			SPT Energy Ratio	Sheet
DOMVS London			74%	1 of 1

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
				45.24		0.20	Soft dark brown slightly gravelly silty sandy CLAY with frequent rootlets and roots. Sand is fine to medium. Gravel is angular to subangular, fine to medium of flint. (TOPSOIL)	
0.50 0.50	B1 ES2	VOC 0.0ppm				(0.80)	Soft to firm dark brown very sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick, concrete and flint. (MADE GROUND) ...becomes sandy gravelly CLAY from 0.7m (possible reworked LONDON CLAY FORMATION)...	
				44.44		1.00		
1.00 1.00	ES3	VOC 0.0ppm (1, 0, 1, 0, 1, 1) N = 3					Firm brown mottled grey silty CLAY. (LONDON CLAY FORMATION)	
2.00		(1, 2, 1, 3, 3, 3) N = 10						
2.50	D4							
3.00		(2, 2, 3, 4, 4, 4) N = 15				(4.00)		
3.50	D5							
4.00		(2, 3, 3, 4, 5, 5) N = 17						
4.50	D6							
				40.44		5.00		
5.00		(2, 2, 3, 4, 4, 4) N = 15					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:37.5	Contractor A2 Site Investigation	Method/ Plant Used WS Rig	Logged By FA	Status FINAL

A2 Site Investigation

Borehole Log

Project				Borehole No
52 Avenue Road				WS06
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	02-11-21 / 02-11-21	44.82	E 527,010.0 N 183,835.0	5m
Client			SPT Energy Ratio	Sheet
DOMVS London			74%	1 of 1

SAMPLES & TESTS			Water	Reduced Level	Legend	Depth (Thickness)	STRATA Description	Instrument/ Backfill
Depth (m)	Type No	Test Result						
				44.52		(0.30) 0.30	Soft dark brown slightly gravelly silty sandy CLAY with frequent rootlets and roots. Sand is fine to medium. Gravel is angular to subangular, fine to medium of flint. (TOPSOIL)	
0.50 0.50	B1 ES2	VOC 0.0ppm		43.92		(0.60) 0.90	Loose to medium dense greyish yellow slightly clayey sandy angular to subrounded, fine to coarse GRAVEL of flint and brick. Sand is fine to coarse. (MADE GROUND) ...becomes grey from 0.6m...	
1.00 1.00 1.00	B3 ES4	VOC 0.0ppm (2, 2, 2, 3, 2, 2) N = 9					Firm to stiff brown mottled grey slightly gravelly silty CLAY. Gravel is subangular to subrounded, fine to coarse of flint. (LONDON CLAY FORMATION) ...becomes silty CLAY from 1.2m...	
2.00		(1, 2, 3, 4, 6, 6) N = 19						
2.50	D5					(4.10)		
3.00		(2, 3, 4, 5, 6, 5) N = 20						
3.50	D6							
4.00		(2, 2, 3, 4, 5, 5) N = 17					...becomes brown from 4.0m.... 4.00 ...becomes brown	
4.50	D7							
				39.82		5.00		
5.00		(2, 3, 3, 5, 5, 6) N = 19					----- *Borehole Terminated at 5m* -----	

Boring Progress and Water Observations

Date	Hole Depth (m)	Casing Depth	Casing Dia. mm	Water Depth (m)	Remarks

Chiselling

From	To	Hours

Water Added

From	To

General Remarks

1.Borehole scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.2m

All dimensions in metres Scale 1:37.5	Contractor A2 Site Investigation	Method/ Plant Used WS Rig	Logged By FA	Status FINAL

A2 Site Investigation

Trial Pit Log

Project				Trial Pit No
52 Avenue Road				TP01
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 02-11-21 Finish 02-11-21	46.53	E 527,032.0 N 183,881.0	0.5m
Client				Sheet
DOMVS London				1 of 1

SAMPLES & TESTS			Water				STRATA
Depth (m)	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
				46.43		(0.10) 0.10	CONCRETE
0.30	ES1	VOC 0.0ppm		46.03		(0.40) 0.50	Firm dark brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint. Cobbles are angular of brick. (MADE GROUND)
							----- *Trial Pit Terminated at 0.5m* -----

General Remarks

1.Pit scanned with CAT & Genny
2.Hand excavated starter pit dug to 0.5m

All dimensions in metres Scale 1:12.5	Contractor A2 Site Investigation	Method/ Plant Used Digging Tools	Logged By FA	Status FINAL

A2 Site Investigation

Trial Pit Log

Project				Trial Pit No
52 Avenue Road				TP02
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 02-11-21 Finish 02-11-21	45.97	E 527,045.0 N 183,872.0	0.5m
Client				Sheet
DOMVS London				1 of 1

SAMPLES & TESTS			Water				STRATA
Depth (m)	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
				45.91		0.06	CONCRETE
						(0.44)	Firm dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint. (MADE GROUND)
0.40	ES1	VOC 0.0ppm		45.47		0.50	
							----- *Trial Pit Terminated at 0.5m* -----

General Remarks

1.Pit scanned with CAT & Genny
2.Hand excavated starter pit dug to 0.5m

All dimensions in metres Scale 1:12.5	Contractor A2 Site Investigation	Method/ Plant Used Digging Tools	Logged By FA	Status FINAL

A2 Site Investigation

Trial Pit Log

Project				Trial Pit No
52 Avenue Road				TP03
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 02-11-21 Finish 02-11-21	45.85	E 527,054.0 N 183,865.0	0.5m
Client				Sheet
DOMVS London				1 of 1

SAMPLES & TESTS			Water				STRATA
Depth (m)	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	ES1	VOC 0.0ppm		45.35		(0.50) 0.50	Firm dark brown silty sandy gravelly CLAY with frequent roots and rare plastic. Sand is fine to coarse. Gravel is angular to subangular brick, concrete and flint. Roots and plastic present. (MADE GROUND)
							----- *Trial Pit Terminated at 0.5m* -----

General Remarks

1.Pit scanned with CAT & Genny
2.Hand excavated starter pit dug to 0.5m

All dimensions in metres Scale 1:12.5	Contractor A2 Site Investigation	Method/ Plant Used Digging Tools	Logged By FA	Status FINAL

A2 Site Investigation

Trial Pit Log

Project				Trial Pit No
52 Avenue Road				TP04
Job No	Start / Finish	Ground Level (mOD)	Co-Ordinates	Depth (m)
15721	Start 02-11-21 Finish 02-11-21	45.87	E 527,039.0 N 183,847.0	1.4m
Client				Sheet
DOMVS London				1 of 1

SAMPLES & TESTS			Water				STRATA
Depth (m)	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	Description
0.40	ES1	VOC 0.0ppm		45.17		(0.70) 0.70	Firm dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to coarse of brick and flint (MADE GROUND).
0.80	ES2	VOC 0.0ppm		44.47		(0.70) 1.40	Firm brown slightly gravelly silty sandy CLAY. Sand is fine to coarse. Gravel is angular to subangular, fine to medium of flint. (MADE GROUND)
							----- *Trial Pit Terminated at 1.4m* -----

General Remarks

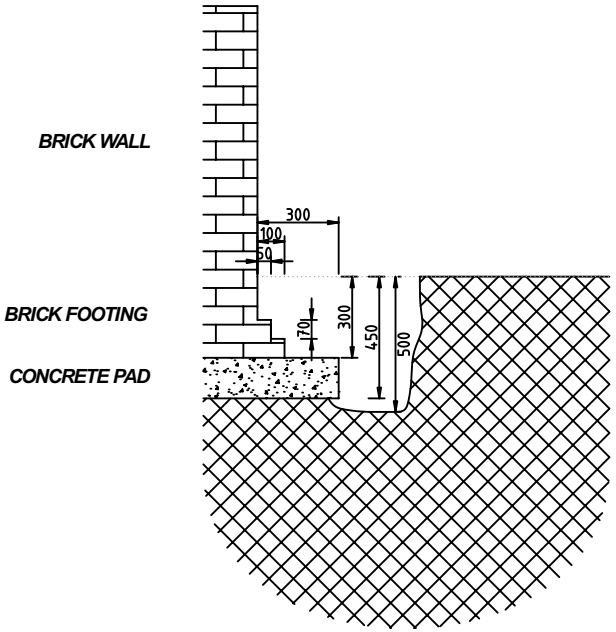
1.Pit scanned with CAT & Genny
2.Hand excavated starter pit dug to 1.4m

All dimensions in metres Scale 1:12.5	Contractor A2 Site Investigation	Method/ Plant Used Digging Tools	Logged By FA	Status FINAL

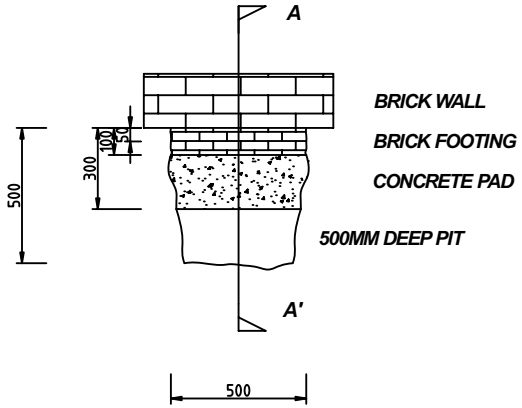
A2 Site Investigation,1 Westminster Bridge Road,SE1 7XW, Telephone: 020 7021 0396

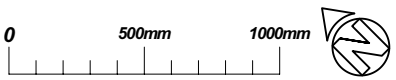
TP01 PHOTOGRAPH

A-A' SECTION



TP01 PLAN VIEW





Rev	Date	By	Chkd	Appd
00	29/11/21	JS	WM	RB

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Client

DOMVS London

Project Title

52 Avenue Road

Drawing Title

Trial Pit 01 Sketch

A2SI Project Number	Rev
15721	00

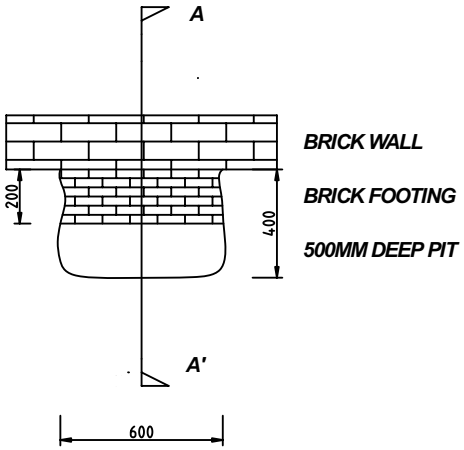
Associated Document

Drawing Number

15721-A2SI-XX-XX-DR-Y-0001-00

TP02 PHOTOGRAPH

TP02 PLAN VIEW

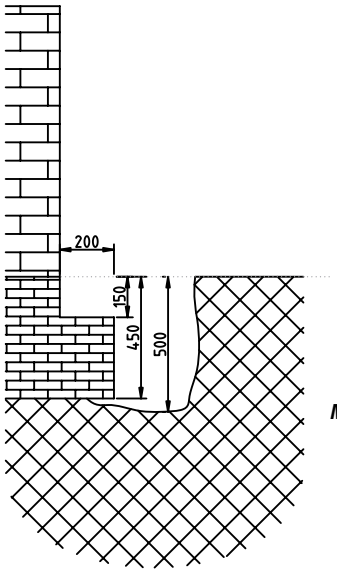


BRICK WALL

BRICK FOOTING

500MM DEEP PIT

A-A' SECTION



BRICK WALL

BRICK FOOTING

MADE GROUND

0 500mm 1000mm

Rev	Date	By	Chkd	Appd
00	29/11/21	JS	WM	RB

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DOMVS London

Project Title

52 Avenue Road

Drawing Title

Trial Pit 02 Sketch

A2SI Project Number
15721

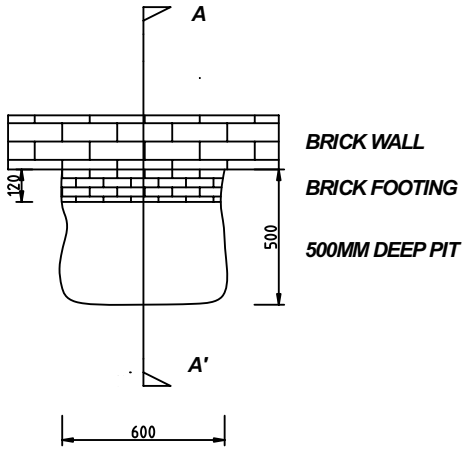
Rev
00

Associated Document

Drawing Number
15721-A2SI-XX-XX-DR-Y-0002-00

TP03 PHOTOGRAPH

TP03 PLAN VIEW

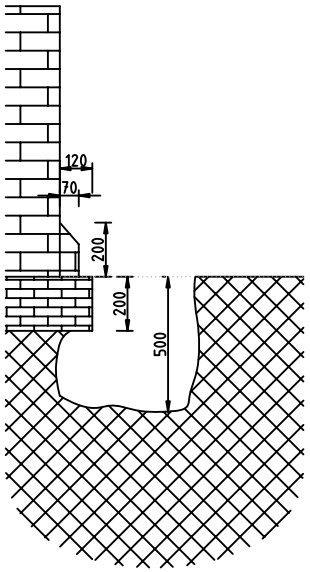


BRICK WALL

BRICK FOOTING

500MM DEEP PIT

A-A' SECTION



BRICK WALL

BRICK FOOTING

MADE GROUND

0 ***500mm*** ***1000mm***

Rev	Date	By	Chkd	Appd
00	29/11/21	JS	WM	RB

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DOMVS London

Project Title

52 Avenue Road

Drawing Title

Trial Pit 03 Sketch

A2SI Project Number
15721

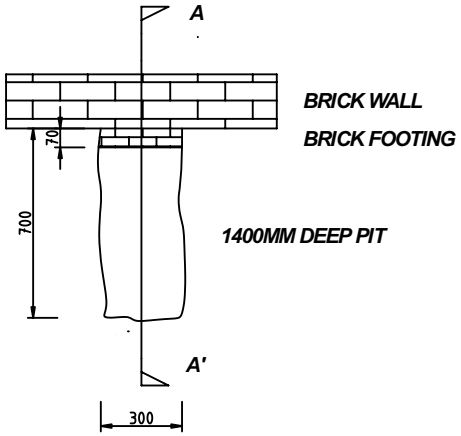
Rev
00

Associated Document

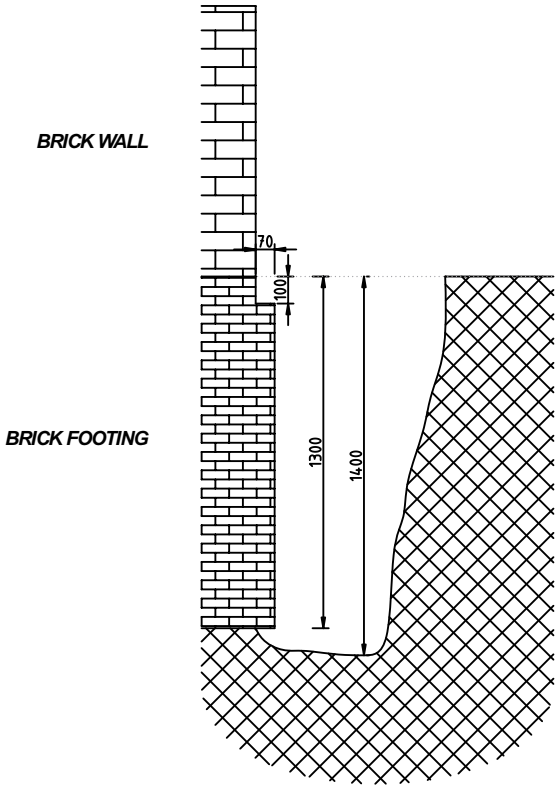
Drawing Number
15721-A2SI-XX-XX-DR-Y-0003-00

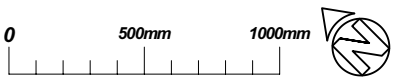
TP04 PHOTOGRAPH

TP04 PLAN VIEW



A-A' SECTION





Rev	Date	By	Chkd	Appd
00	29/11/21	JS	WM	RB

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DOMVS London

Project Title

52 Avenue Road

Drawing Title

Trial Pit 04 Sketch

A2SI Project Number	Rev
15721	00

Associated Document

Drawing Number

15721-A2SI-XX-XX-DR-Y-0004-00

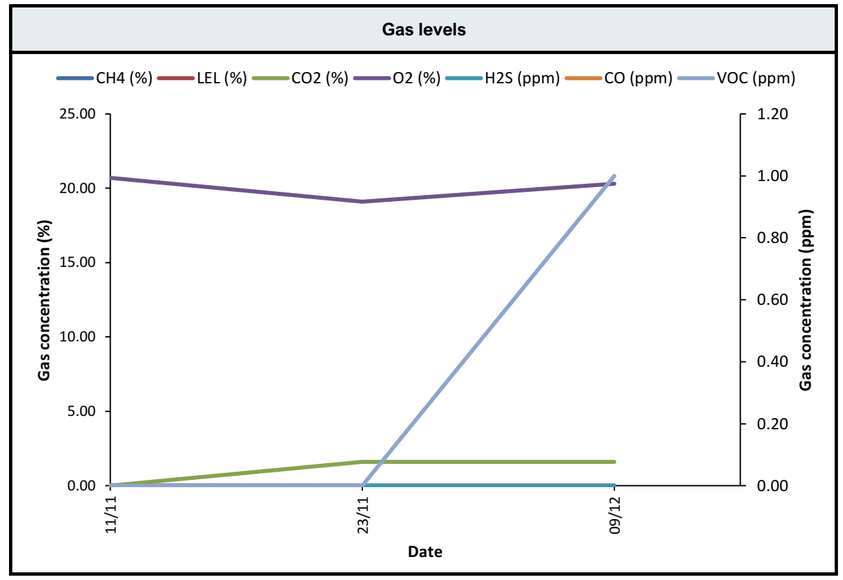
Appendix C: Gas and Groundwater Monitoring Results

Project Number	15721	**Install Depth (m)**	5
Project Name	52 Avenue Road	**Plain (m)**	2
Borehole Number	BH01	**Slotted (m)**	3
Borehole Depth (m)	40		

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.80	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.80	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.80	0.00	0.00	0.00	
Base of Well (mbgl)	4.70	180	0	0.00	0.00	0.00	20.80	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	0.00	20.10	0.00	0.00	1.00	
Date	23/11/2021	60	0	0.00	0.00	0.00	20.20	0.00	0.00	1.00	
Atmospheric Pressure (mb)	1024.00	90	0	0.00	0.00	0.00	20.20	0.00	0.00	1.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	0.00	20.20	0.00	0.00	1.00	
Water Level (mbgl)	dry	150	0	0.00	0.00	0.00	20.20	0.00	0.00	0.00	
Base of Well (mbgl)	4.70	180	0	0.00	0.00	0.00	20.20	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30	0	0.00	0.00	0.70	15.10	0.00	0.00	0.00	
Date	09/12/2021	60	0	0.00	0.00	0.70	15.10	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90	0	0.00	0.00	0.70	15.40	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.70	15.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.70	15.90	0.00	0.00	0.00	
Base of Well (mbgl)	4.70	180	0	0.00	0.00	0.60	16.10	0.00	0.00	0.00	



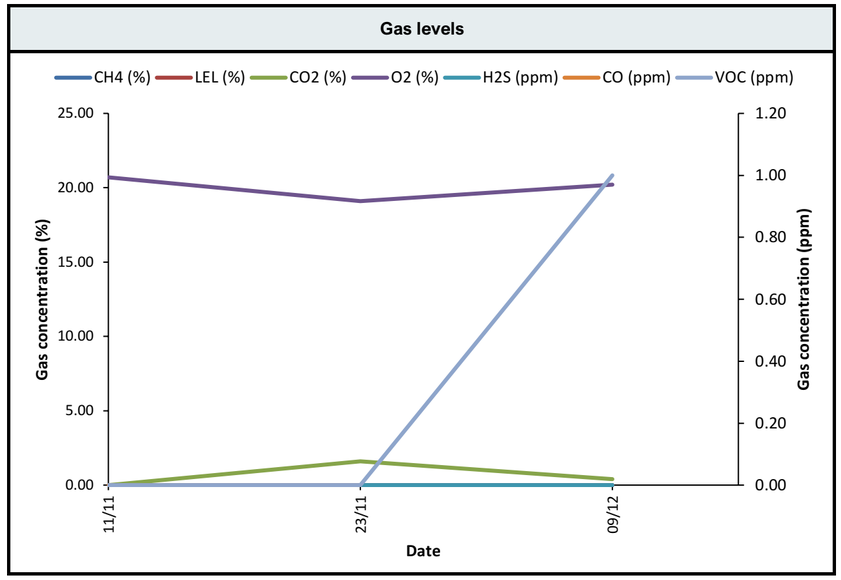
Project Number 15721
Project Name 52 Avenue Road
Borehole Number BH02
Borehole Depth (m) 40

Install Depth (m) 2
Plain (m) 1
Slotted (m) 1

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	2.16	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	1.60	19.10	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	1.60	19.00	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022.00	90	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
Base of Well (mbgl)	1.17	180	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30	0.00	0.00	0.00	0.40	20.20	0.00	0.00	1.00	
Date	09/12/2021	60	0.00	0.00	0.00	0.00	20.30	0.00	0.00	1.00	
Atmospheric Pressure (mb)	993.00	90	0.00	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0.00	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0.00	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Base of Well (mbgl)	0.94	180	0.00	0.00	0.00	0.00	20.30	0.00	0.00	0.00	



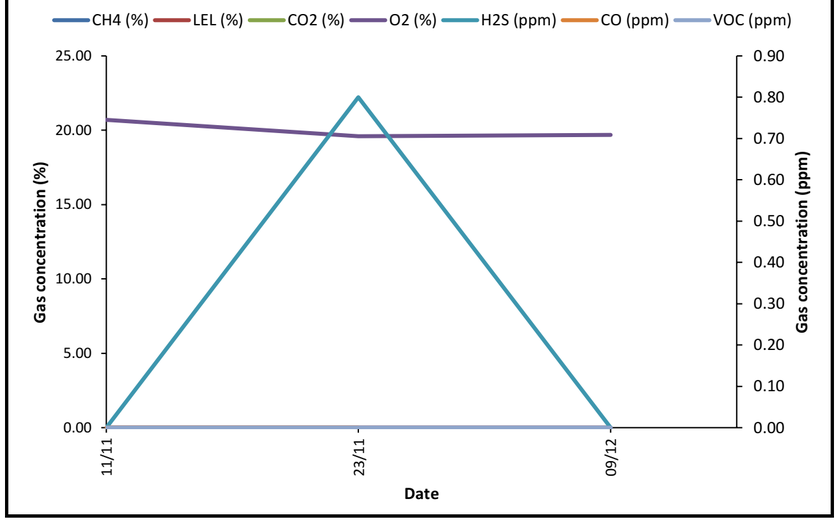
Project Number	15721	**Install Depth (m)**	1
Project Name	52 Avenue Road	**Plain (m)**	0.5
Borehole Number	WS02	**Slotted (m)**	0.5
Borehole Depth (m)	5		

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.05	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	0.80	19.60	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	0.90	19.60	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1023.00	90	0	0.00	0.00	0.80	19.70	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	0.80	19.80	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.70	19.90	0.00	0.00	0.00	
Base of Well (mbgl)	1.06	180	0	0.00	0.00	0.60	20.00	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30	0.00	0.00	0.00	0.60	19.70	0.00	0.00	0.00	
Date	09/12/2021	60	0.00	0.00	0.00	0.60	19.80	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90	0.00	0.00	0.00	0.20	19.90	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0.00	0.00	0.00	0.00	19.90	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	
Base of Well (mbgl)	1.05	180	0.00	0.00	0.00	0.00	20.00	0.00	0.00	0.00	

Gas levels



Project Number 15721
Project Name 52 Avenue Road
Borehole Number WS02
Borehole Depth (m) 5

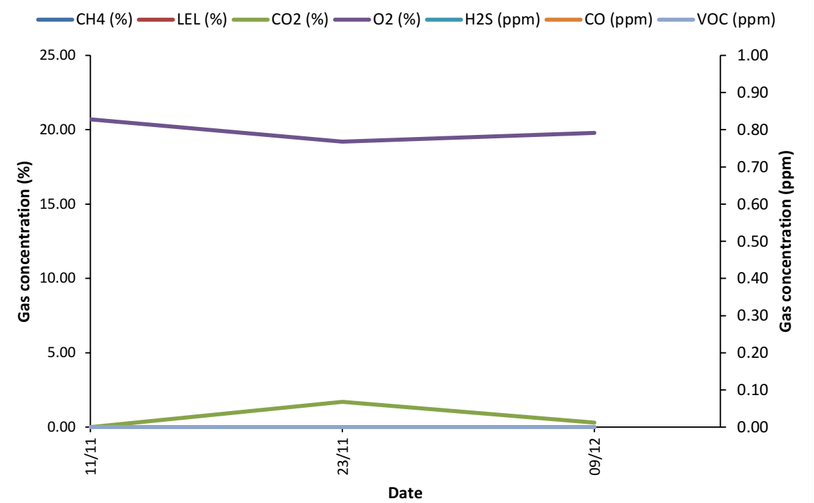
Install Depth (m) 1
Plain (m) 0.5
Slotted (m) 0.5

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.16	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	1.70	19.20	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	1.80	19.00	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022.00	90	0	0.00	0.00	1.80	19.00	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
Base of Well (mbgl)	1.17	180	0	0.00	0.00	1.70	19.00	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30	0	0.00	0.00	0.30	19.80	0.00	0.00	0.00	
Date	09/12/2021	60	0	0.00	0.00	0.20	19.90	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90	0	0.00	0.00	0.20	19.90	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.20	19.90	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.20	19.90	0.00	0.00	0.00	
Base of Well (mbgl)	1.17	180	0	0.00	0.00	0.20	19.90	0.00	0.00	0.00	

Gas levels



Project Number 15721
Project Name 52 Avenue Road
Borehole Number WS03
Borehole Depth (m) 5

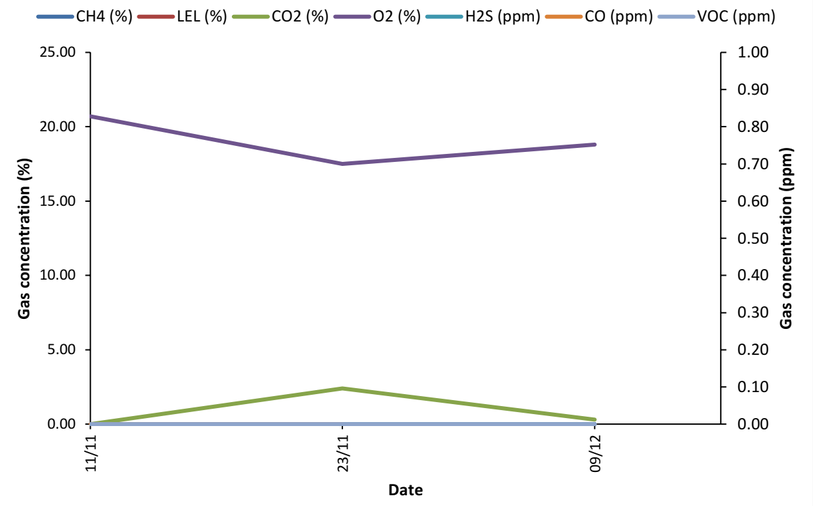
Install Depth (m) 1
Plain (m) 0.5
Slotted (m) 0.5

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.16	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022.00	90	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
Base of Well (mbgl)	1.15	180	0	0.00	0.00	2.40	17.50	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30.00	0.00	0.00	0.00	0.30	18.80	0.00	0.00	0.00	
Date	09/12/2021	60	0	0.00	0.00	0.30	18.80	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90.00	0.00	0.00	0.00	0.30	18.90	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.20	18.90	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150.00	0.00	0.00	0.00	0.20	18.90	0.00	0.00	0.00	
Base of Well (mbgl)	1.17	180	0	0.00	0.00	0.20	18.90	0.00	0.00	0.00	

Gas levels



Project Number 15721
Project Name 52 Avenue Road
Borehole Number WS04
Borehole Depth (m) 5

Install Depth (m) 1
Plain (m) 0.5
Slotted (m) 0.5

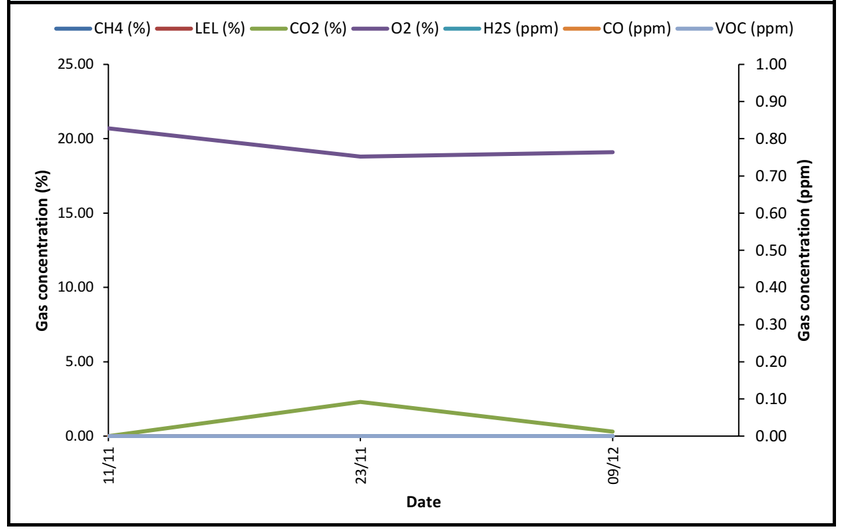
Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.00	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	

2nd Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	JP	30	0	0.00	0.00	2.30	18.80	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	2.30	18.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022.00	90	0	0.00	0.00	2.30	18.70	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	2.30	18.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	2.30	18.70	0.00	0.00	0.00	
Base of Well (mbgl)	0.97	180	0	0.00	0.00	2.30	18.70	0.00	0.00	0.00	

3rd Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	JS	30	0	0.00	0.00	0.30	19.10	0.00	0.00	0.00	
Date	09/12/2021	60	0	0.00	0.00	0.30	19.00	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90	0	0.00	0.00	0.30	19.00	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.30	19.00	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.20	19.00	0.00	0.00	0.00	
Base of Well (mbgl)	1.01	180	0	0.00	0.00	0.30	19.00	0.00	0.00	0.00	



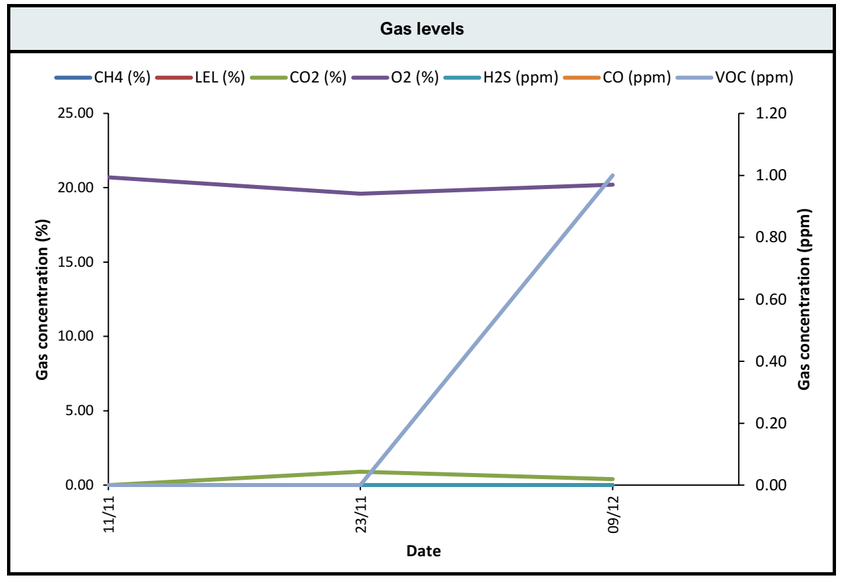
Project Number 15721
Project Name 52 Avenue Road
Borehole Number WS05
Borehole Depth (m) 5

Install Depth (m) 1
Plain (m) 0.5
Slotted (m) 0.5

Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.14	180	0	0.00	0.00	0.00	20.70	0.00	0.00	0.00	
2nd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JP	30	0	0.00	0.00	0.90	19.60	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	0.90	19.50	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022.00	90	0	0.00	0.00	0.90	19.40	0.00	0.00	0.00	
Weather Conditions	Sunny, Dry	120	0	0.00	0.00	0.90	19.30	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	1.10	19.20	0.00	0.00	0.00	
Base of Well (mbgl)	1.03	180	0	0.00	0.00	1.20	19.00	0.00	0.00	0.00	
3rd Visit		**Time (s)**	**Flow (l/h)**	**Methane Content (% v/v)**	**Methane Content (% LEL)**	**Carbon Dioxide (% v/v)**	**Oxygen (% v/v)**	**H_2S (ppm)**	**CO (ppm)**	**VOC (ppm)**	**Comments**
Engineer	JS	30	0	0.00	0.00	0.40	20.20	0.00	0.00	1.00	
Date	09/12/2021	60	0	0.00	0.00	0.00	20.30	0.00	0.00	1.00	
Atmospheric Pressure (mb)	993.00	90	0	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.30	0.00	0.00	0.00	
Base of Well (mbgl)	1.07	180	0	0.00	0.00	0.00	20.30	0.00	0.00	0.00	



Project Number 15721
Project Name 52 Avenue Road
Borehole Number WS06
Borehole Depth (m) 5

Install Depth (m) 1
Plain (m) 0.5
Slotted (m) 0.5

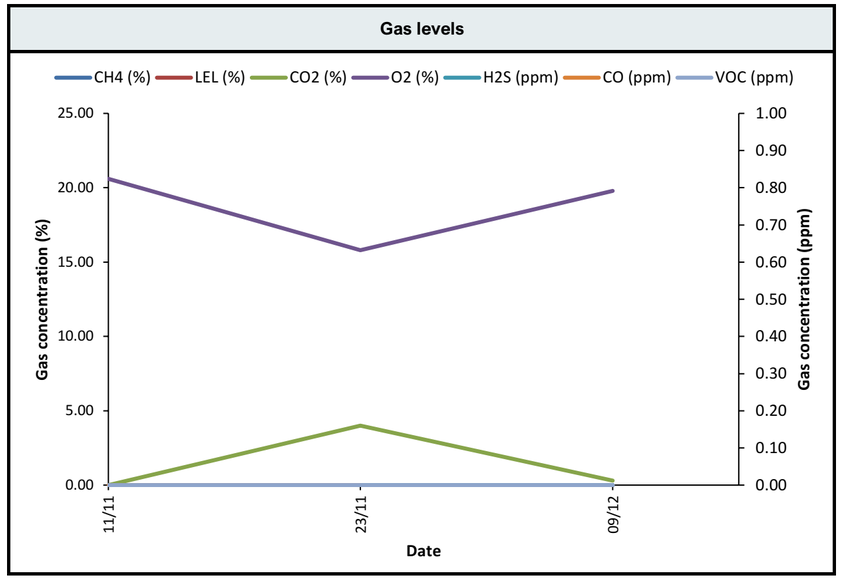
Instrument	Model	S/N	Calibration date
Gas Analyser	GFM436	13456	05/02/2021
PID	GDC10412	TBC	TBC
Dip Meter	DIP-100	N/A	N/A

A2 Site Investigation

1st Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	FA	30	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	
Date	11/11/2021	60	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1017.00	90	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	
Weather Conditions	Cloudy, Drizziling	120	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	
Base of Well (mbgl)	1.07	180	0	0.00	0.00	0.00	20.60	0.00	0.00	0.00	

2nd Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	JP	30	0	0.00	0.00	4.00	15.80	0.00	0.00	0.00	
Date	23/11/2021	60	0	0.00	0.00	4.10	15.70	0.00	0.00	0.00	
Atmospheric Pressure (mb)	1022	90	0	0.00	0.00	4.10	15.70	0.00	0.00	0.00	
Weather Conditions	Sunny /Dry	120	0	0.00	0.00	4.10	15.60	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150	0	0.00	0.00	4.10	15.60	0.00	0.00	0.00	
Base of Well (mbgl)	1.08	180	0	0.00	0.00	4.10	15.60	0.00	0.00	0.00	

3rd Visit		Time (s)	Flow (l/h)	Methane Content (% v/v)	Methane Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	H_2S (ppm)	CO (ppm)	VOC (ppm)	Comments
Engineer	JS	30.00	0.00	0.00	0.00	0.30	19.80	0.00	0.00	0.00	
Date	09/12/2021	60	0	0.00	0.00	0.30	19.90	0.00	0.00	0.00	
Atmospheric Pressure (mb)	993.00	90.00	0.00	0.00	0.00	0.30	19.80	0.00	0.00	0.00	
Weather Conditions	Overcast, Dry	120	0	0.00	0.00	0.30	19.70	0.00	0.00	0.00	
Water Level (mbgl)	Dry	150.00	0.00	0.00	0.00	0.30	19.70	0.00	0.00	0.00	
Base of Well (mbgl)	1.08	180	0	0.00	0.00	0.30	19.70	0.00	0.00	0.00	



Appendix D: Geotechnical Laboratory Testing

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	56688	
Site Name	15721 - 52 Avenue Road	
Date Tested	26/11/2021	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
BH01		D	8.00	-		Brown silty CLAY
BH01		D	25.00	-		Brown silty CLAY
BH02		D	16.00	-		Brown silty CLAY
BH02		D	30.00	-		Brown silty CLAY
				-		
				-		
				-		
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Operators	Checked	03/12/2021	Richard John (Advanced Testing Manager)
Darcy Etheridge	Approved	03/12/2021	Paul Evans (Quality/Technical Manager)

GSTL	NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.3 & 5.3)	
Contract Number	56688	
Project Location	15721 - 52 Avenue Road	
Date Tested	26/11/2021	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Remarks
BH01		D	8.00	-		31	63	26	37	100	CH High Plasticity
BH01		D	25.00	-		28	66	27	39	100	CH High Plasticity
BH02		D	16.00	-		28	41	24	17	100	CI Intermediate Plasticity
BH02		D	30.00	-		27	79	14	65	100	CV Very High Plasticity
				-							
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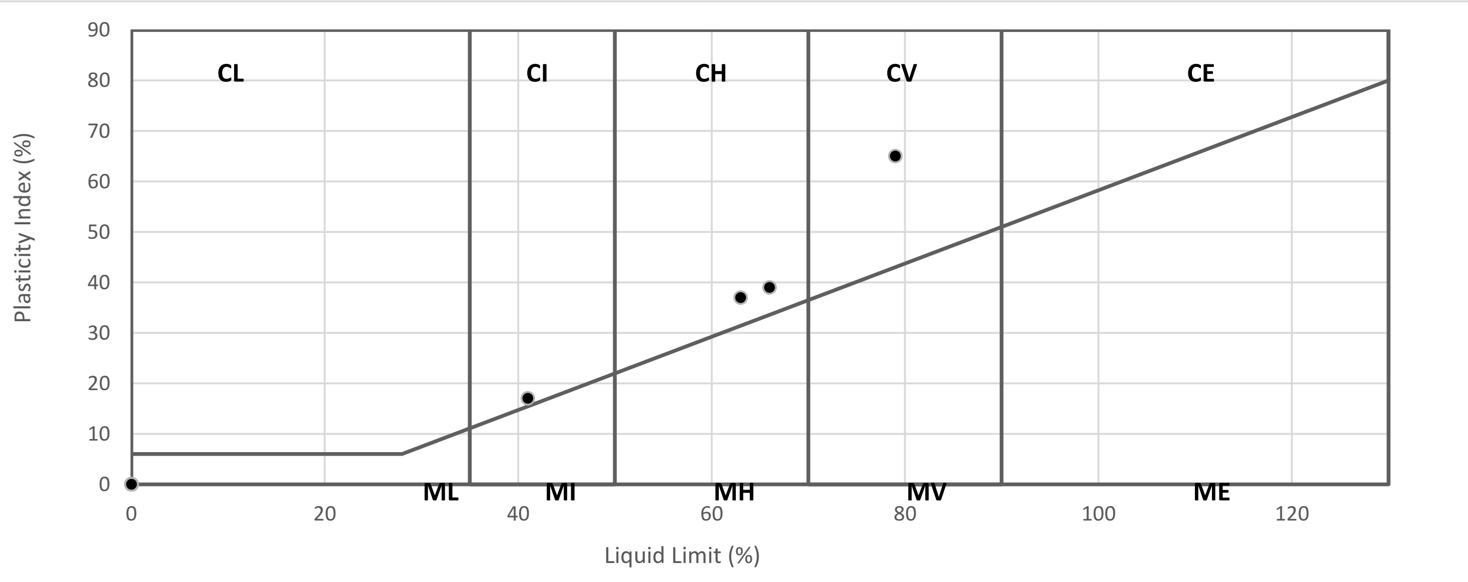
Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

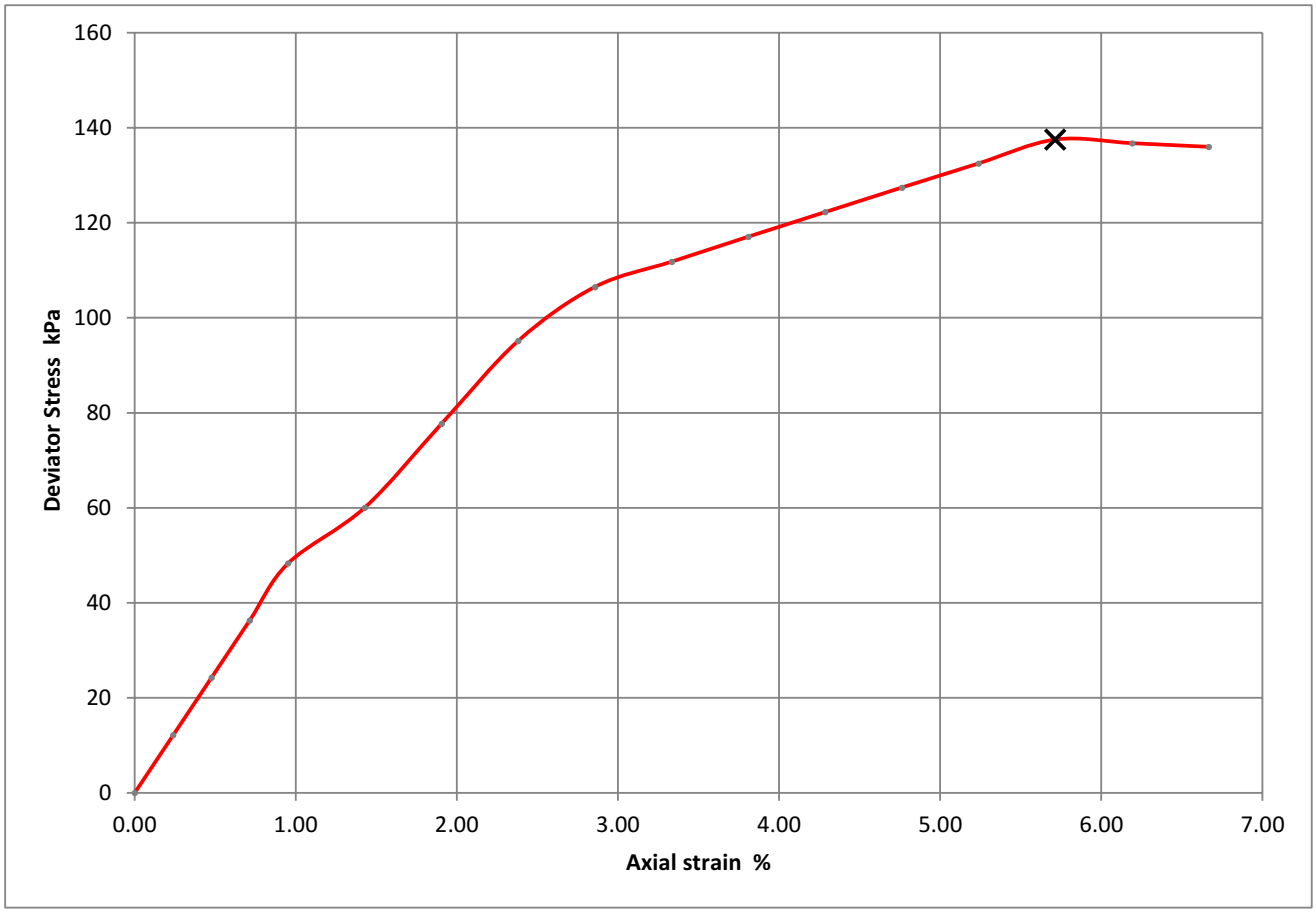
PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



Operators	Checked	03/12/2021	Richard John (Advanced Testing Manager)
Darcy Etheridge	Approved	03/12/2021	Paul Evans (Quality/Technical Manager)

UKAS TESTING 1744

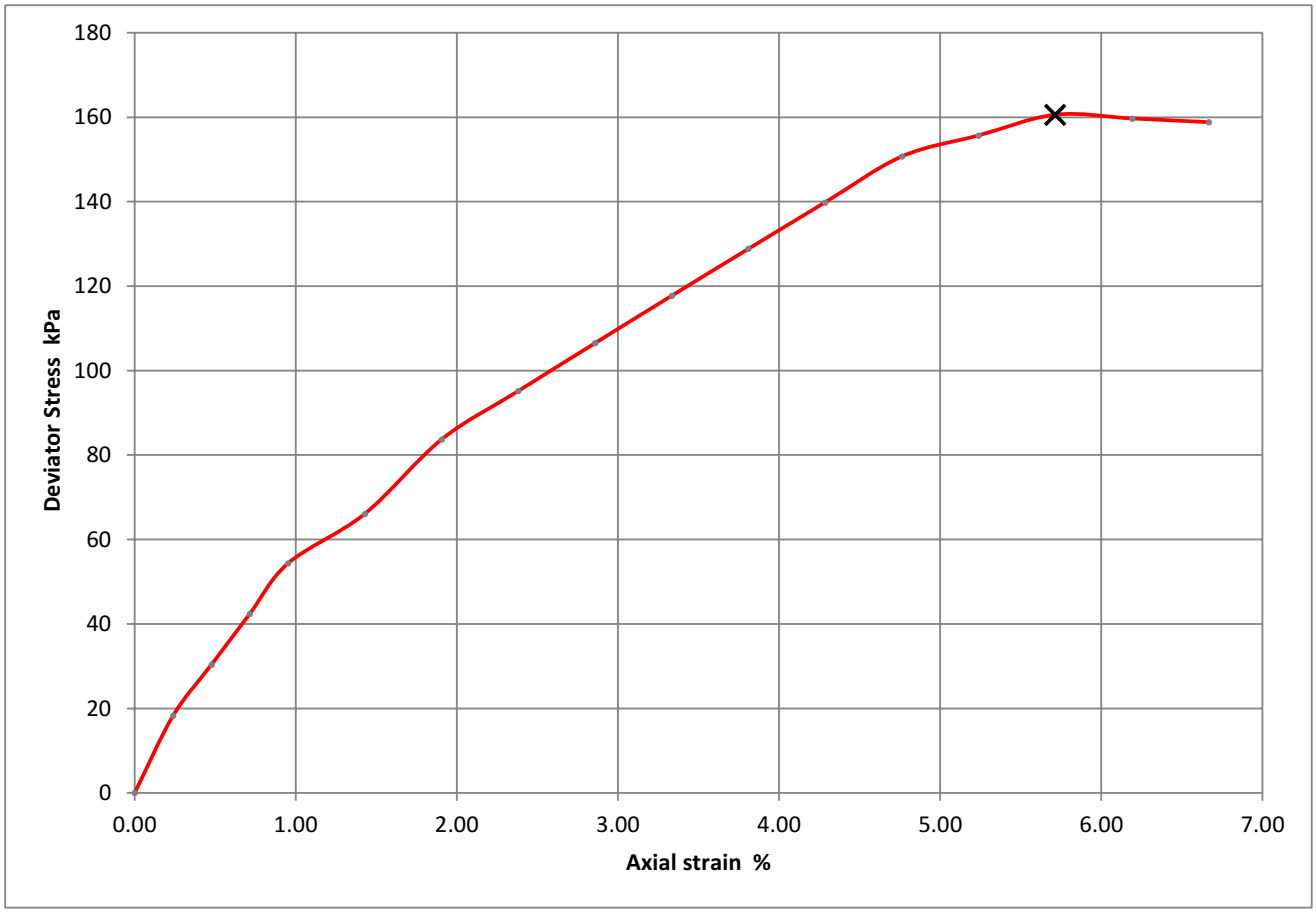
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	2.50
		Depth Base (m)	2.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.84
Dry Density (Mg/m^3)	1.49
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	50
Deviator Stress (kPa)	138
Undrained Shear Strength (kPa)	69
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	4.50
		Depth Base (m)	4.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

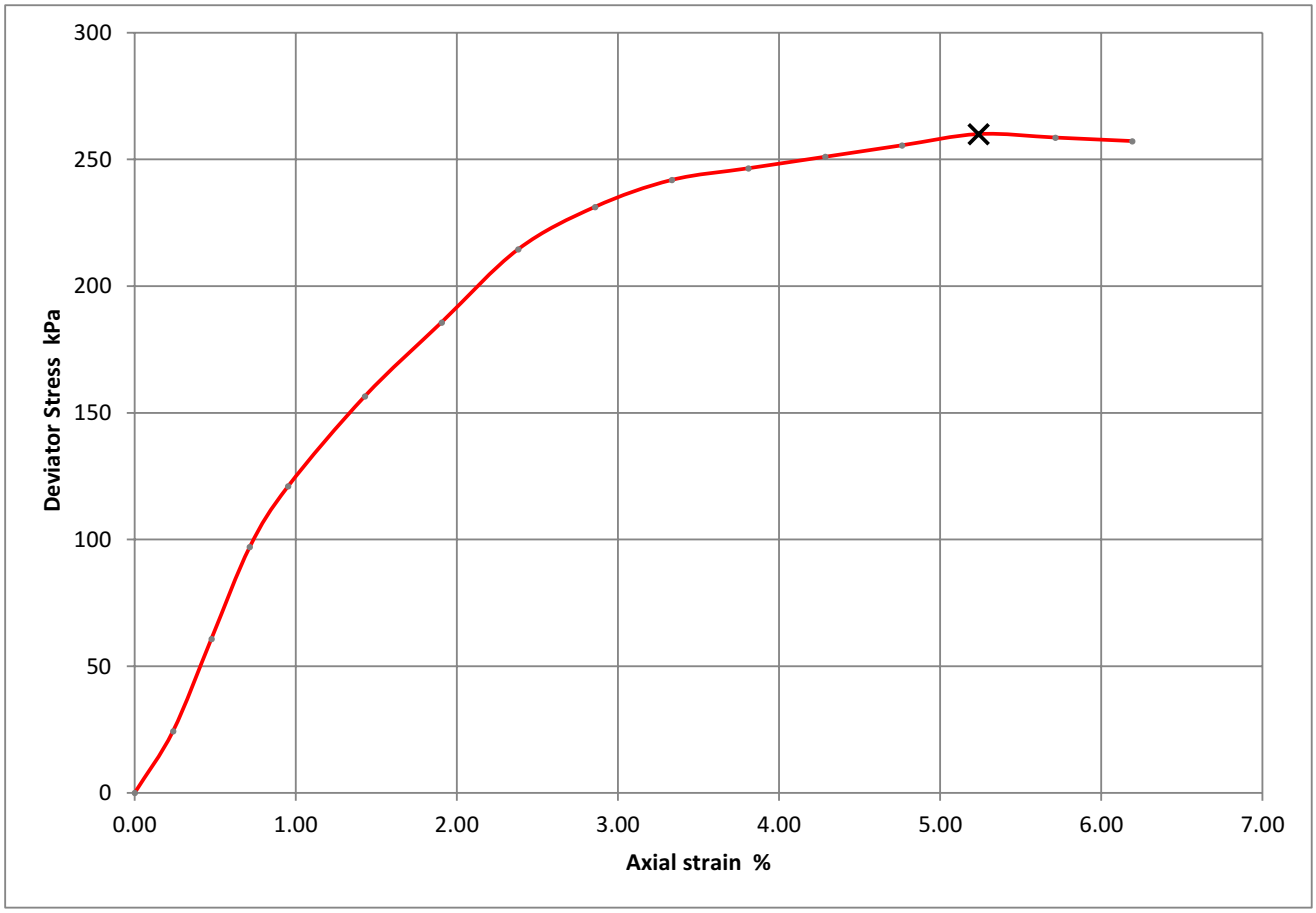


Moisture Content (%)	26
Bulk Density (Mg/m^3)	1.81
Dry Density (Mg/m^3)	1.43
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	90
Deviator Stress (kPa)	161
Undrained Shear Strength (kPa)	80
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

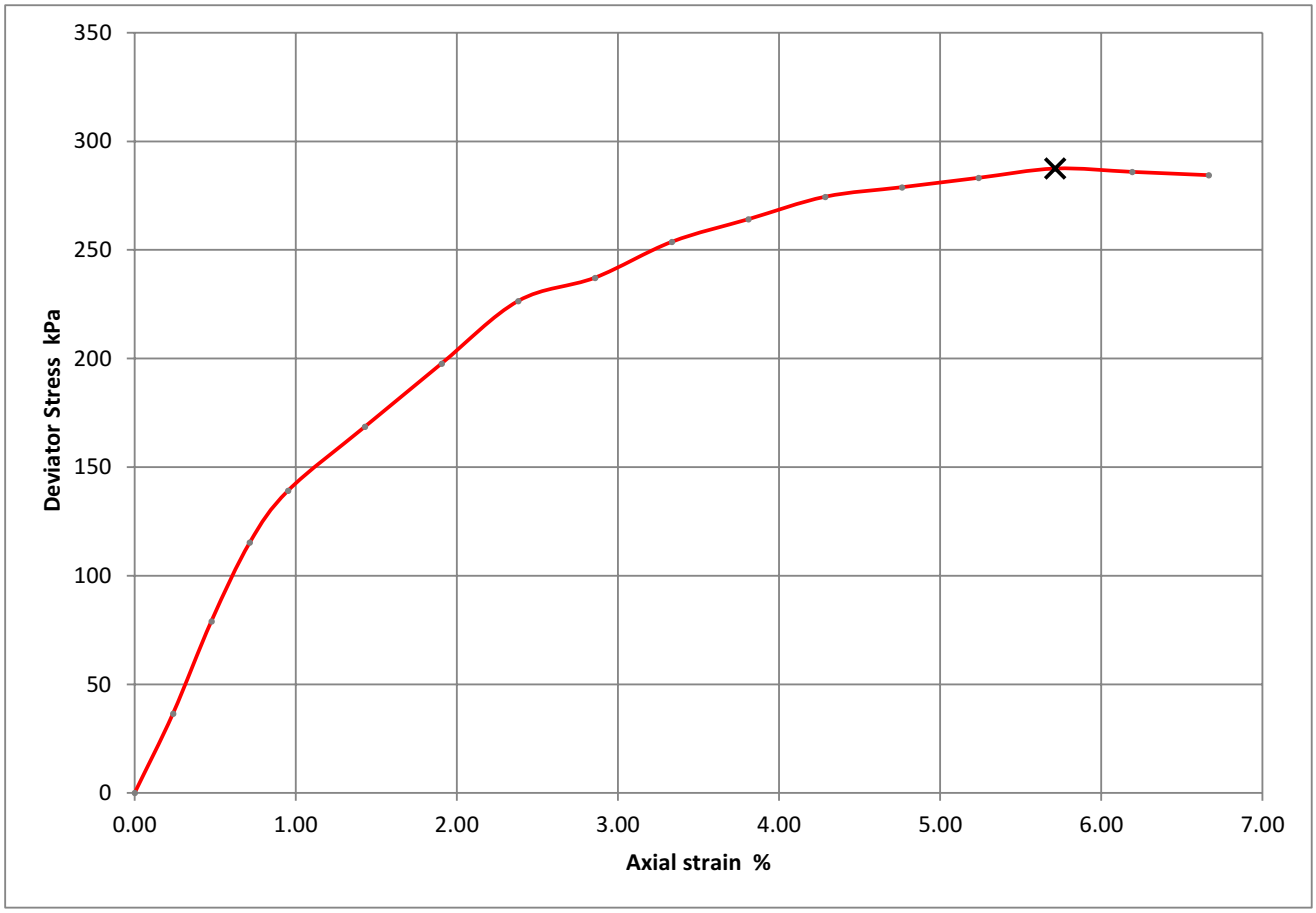
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	7.00
		Depth Base (m)	7.45
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	25
Bulk Density (Mg/m^3)	1.85
Dry Density (Mg/m^3)	1.49
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	140
Deviator Stress (kPa)	260
Undrained Shear Strength (kPa)	130
Failure Strain (%)	5
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

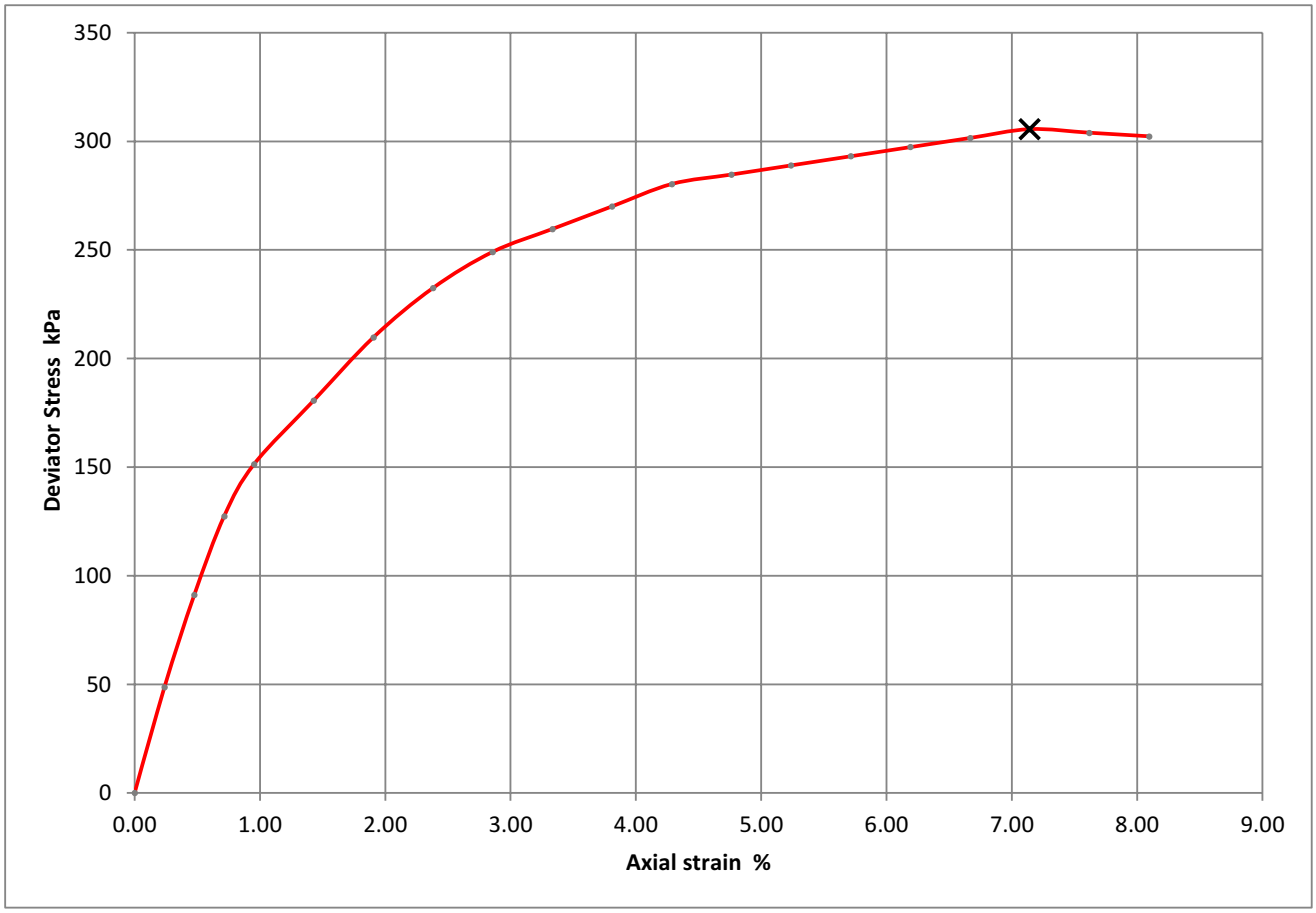
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	10.00
		Depth Base (m)	10.45
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	24
Bulk Density (Mg/m^3)	1.88
Dry Density (Mg/m^3)	1.53
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	200
Deviator Stress (kPa)	287
Undrained Shear Strength (kPa)	144
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

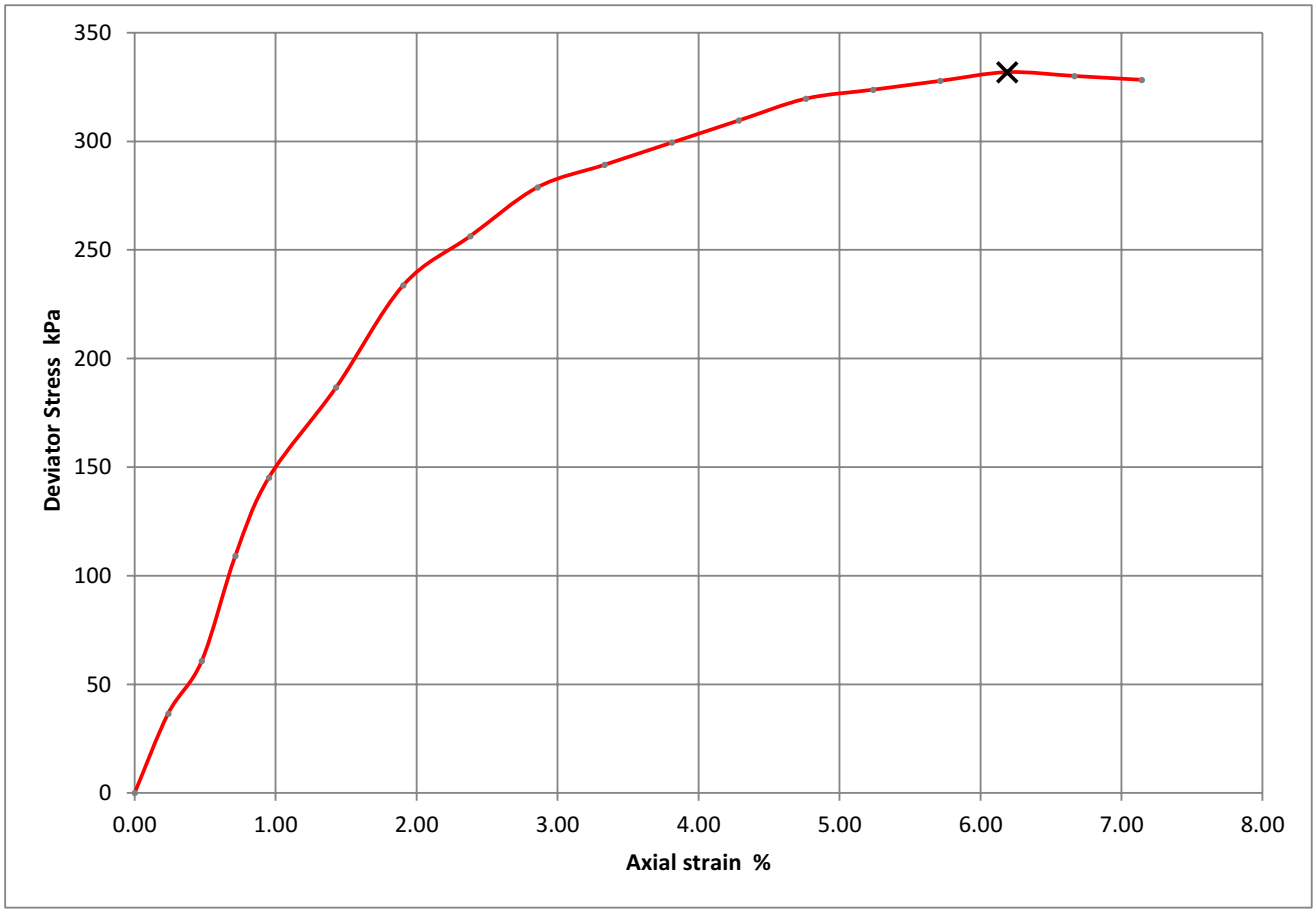
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	13.00
		Depth Base (m)	13.45
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	25
Bulk Density (Mg/m^3)	1.88
Dry Density (Mg/m^3)	1.51
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	260
Deviator Stress (kPa)	306
Undrained Shear Strength (kPa)	153
Failure Strain (%)	7
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	16.50
		Depth Base (m)	16.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

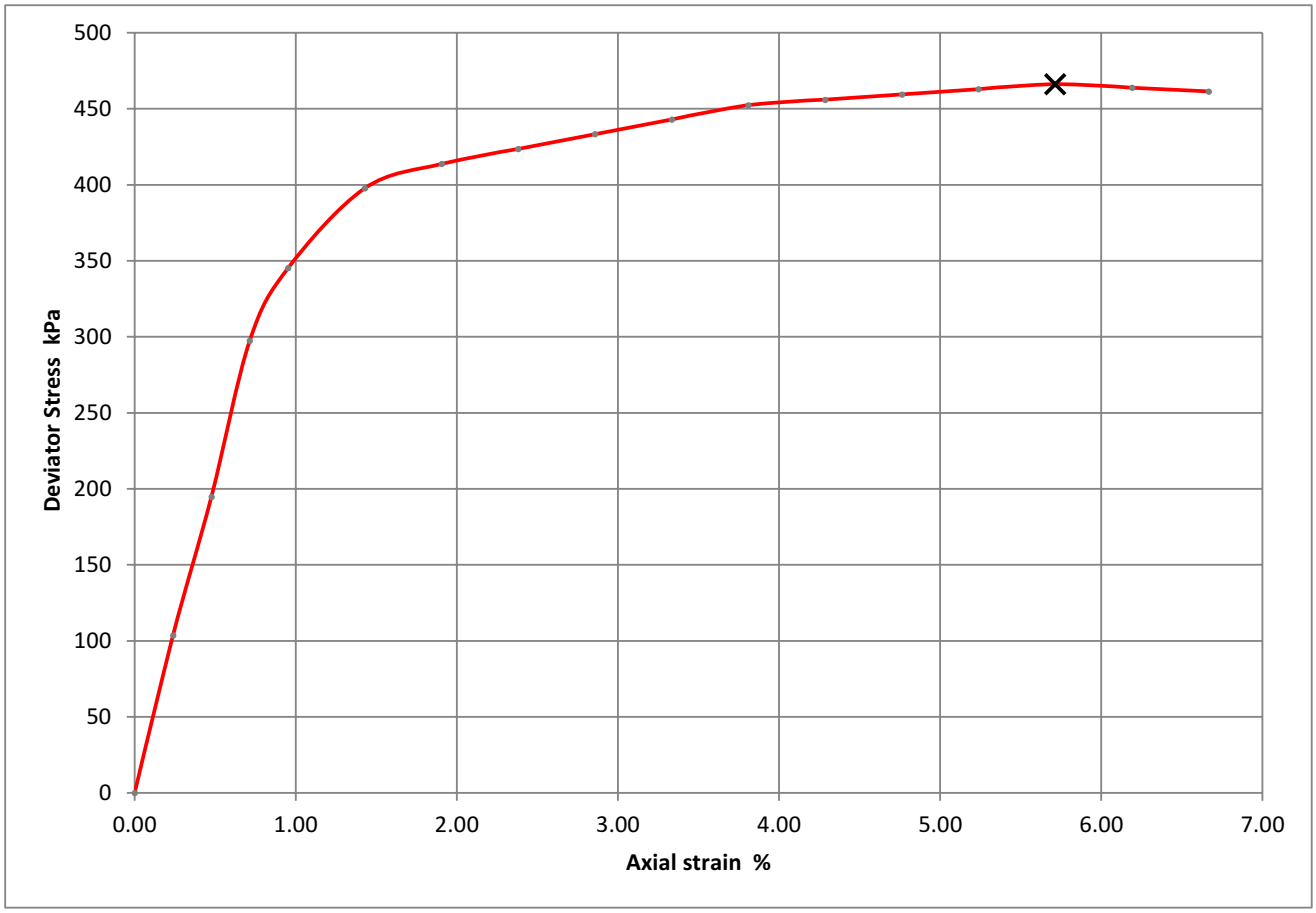


Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.90
Dry Density (Mg/m^3)	1.54
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	330
Deviator Stress (kPa)	332
Undrained Shear Strength (kPa)	166
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	31.50
		Depth Base (m)	31.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

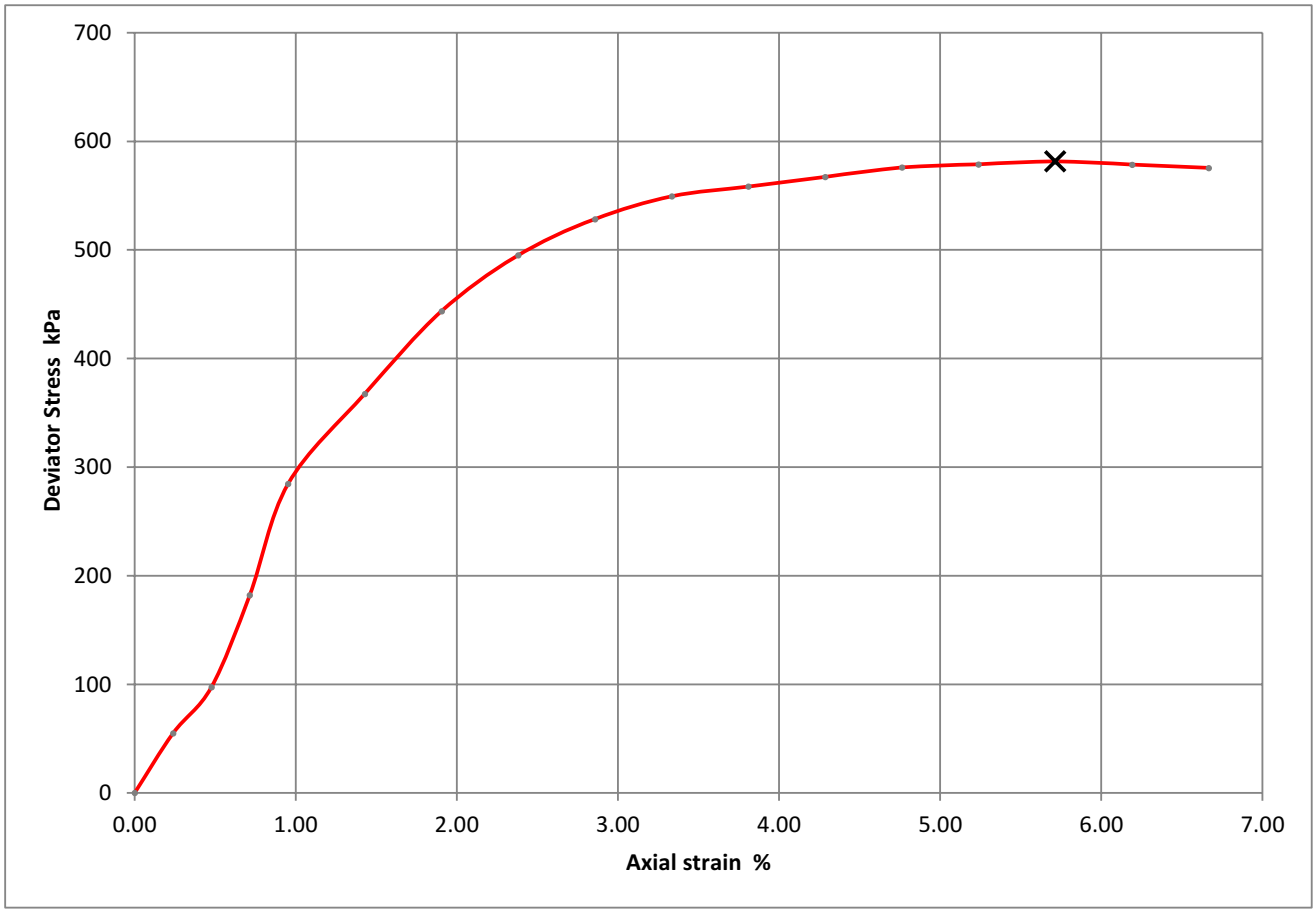


Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.86
Dry Density (Mg/m^3)	1.52
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	630
Deviator Stress (kPa)	466
Undrained Shear Strength (kPa)	233
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	34.50
		Depth Base (m)	34.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

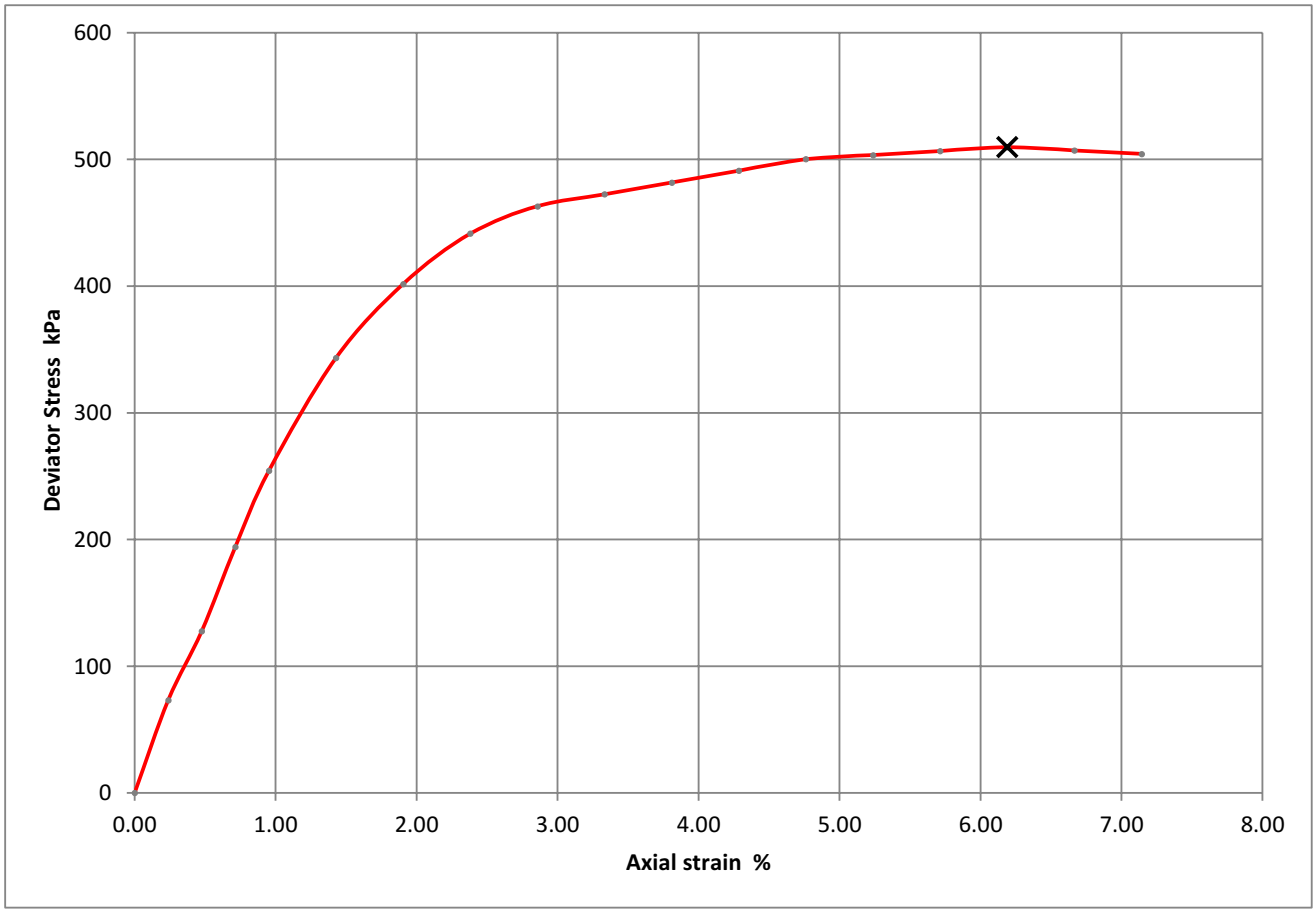


Moisture Content (%)	22
Bulk Density (Mg/m^3)	1.91
Dry Density (Mg/m^3)	1.56
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	690
Deviator Stress (kPa)	582
Undrained Shear Strength (kPa)	291
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

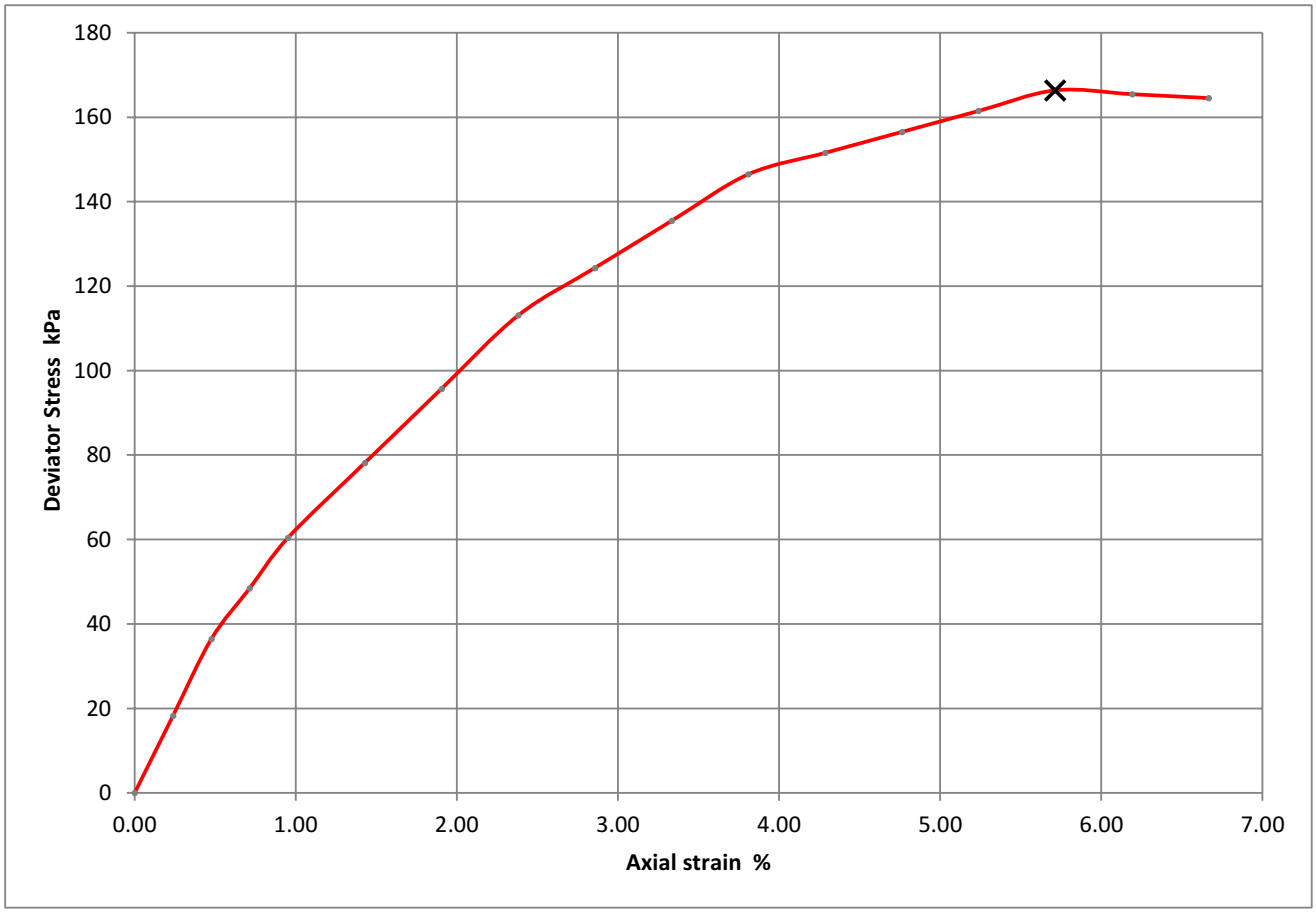
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH01
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	37.50
		Depth Base (m)	37.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.91
Dry Density (Mg/m^3)	1.56
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	750
Deviator Stress (kPa)	510
Undrained Shear Strength (kPa)	255
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	3.50
		Depth Base (m)	3.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

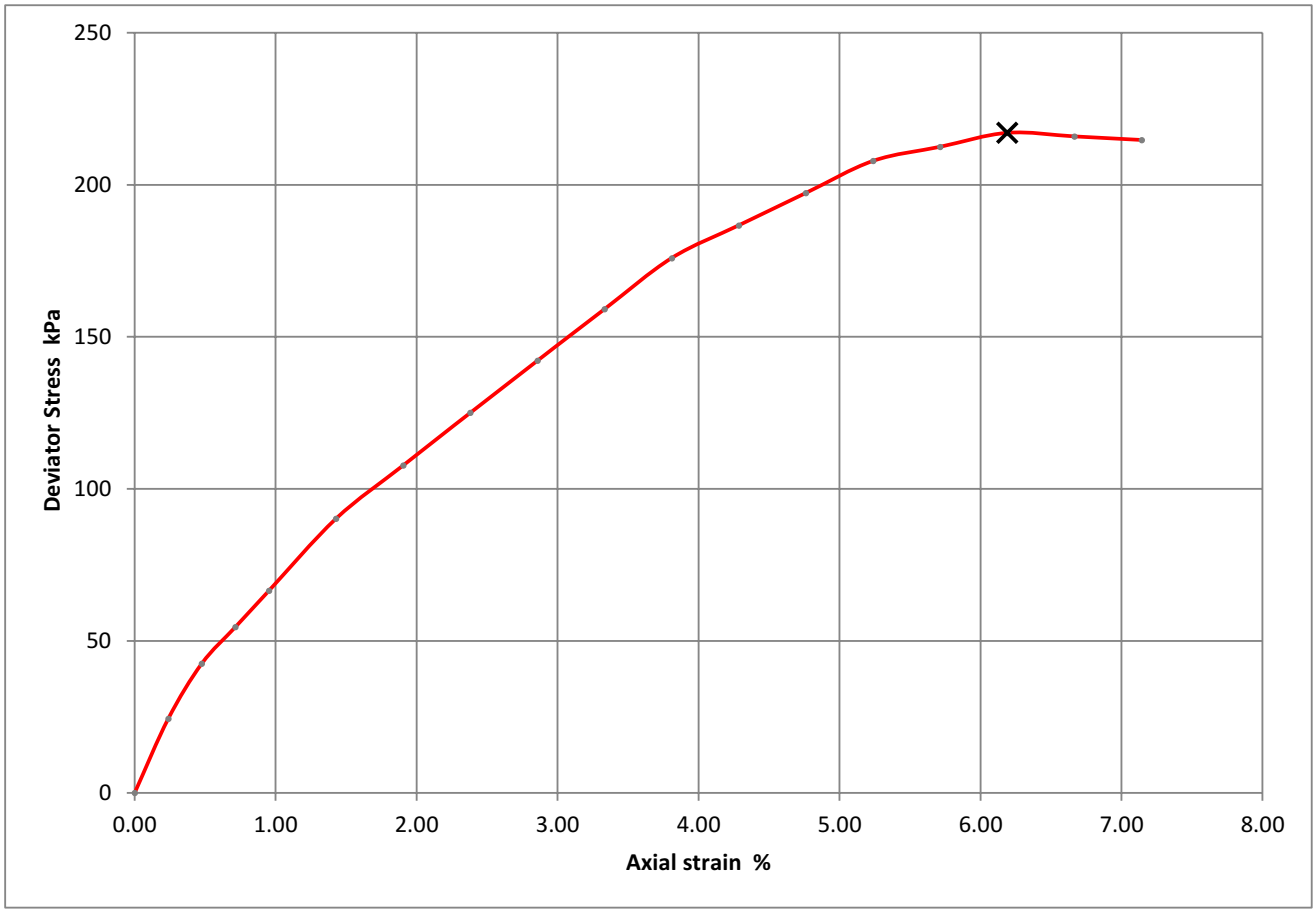


Moisture Content (%)	22
Bulk Density (Mg/m^3)	1.85
Dry Density (Mg/m^3)	1.51
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	70
Deviator Stress (kPa)	166
Undrained Shear Strength (kPa)	83
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	7.50
		Depth Base (m)	7.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

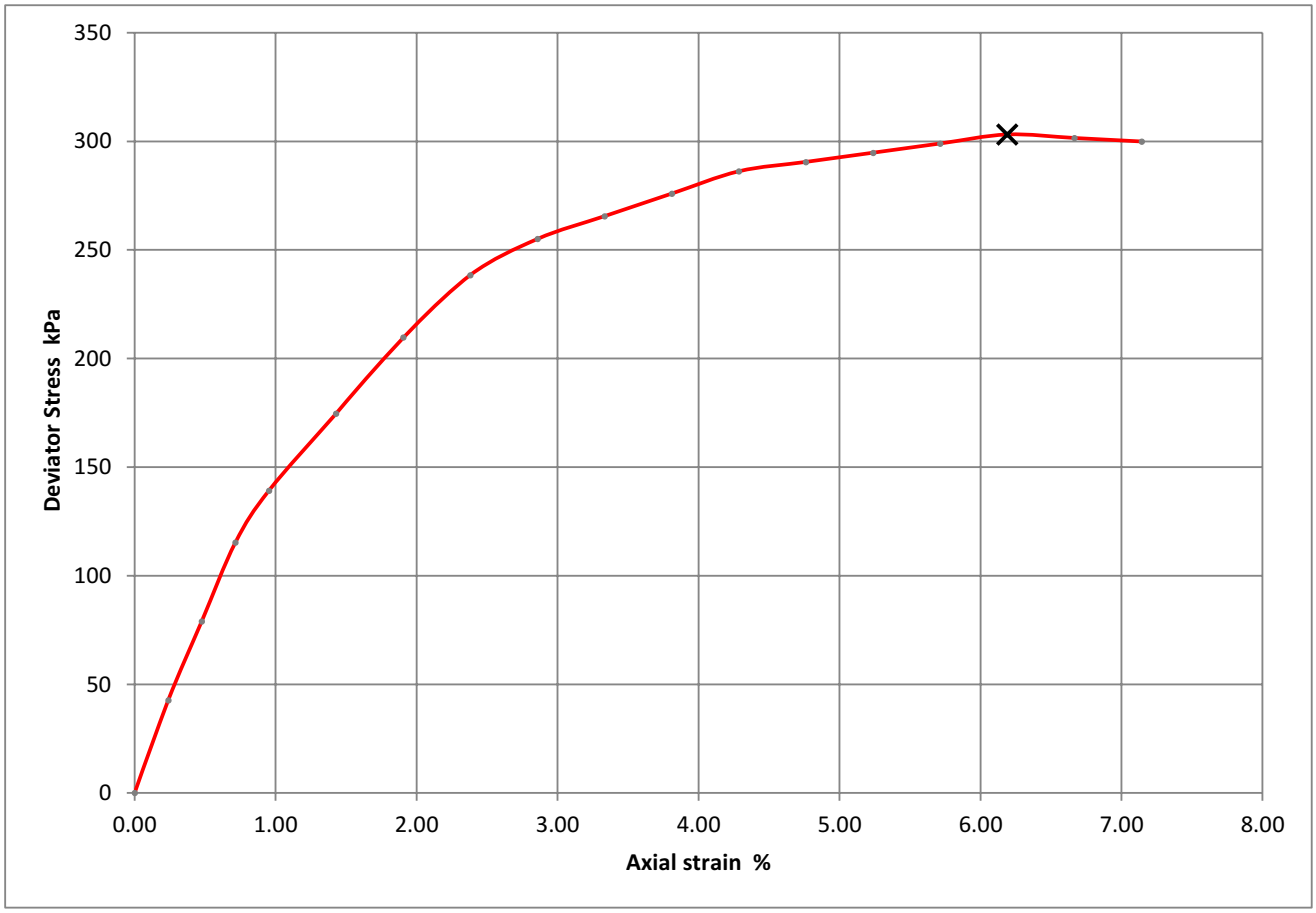


Moisture Content (%)	25
Bulk Density (Mg/m^3)	1.85
Dry Density (Mg/m^3)	1.48
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	150
Deviator Stress (kPa)	217
Undrained Shear Strength (kPa)	109
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

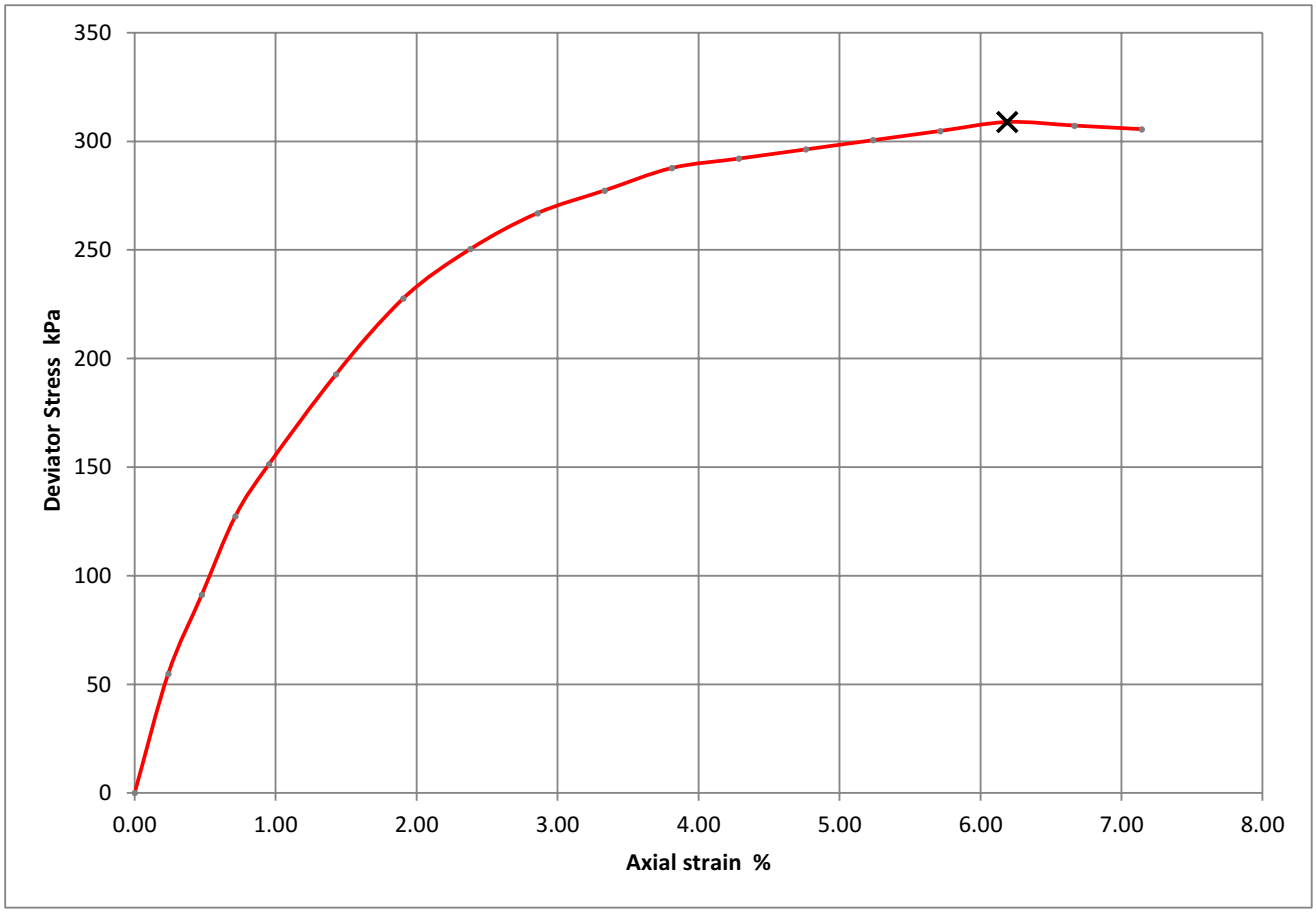
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	10.50
		Depth Base (m)	10.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	25
Bulk Density (Mg/m^3)	1.82
Dry Density (Mg/m^3)	1.46
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	210
Deviator Stress (kPa)	303
Undrained Shear Strength (kPa)	152
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

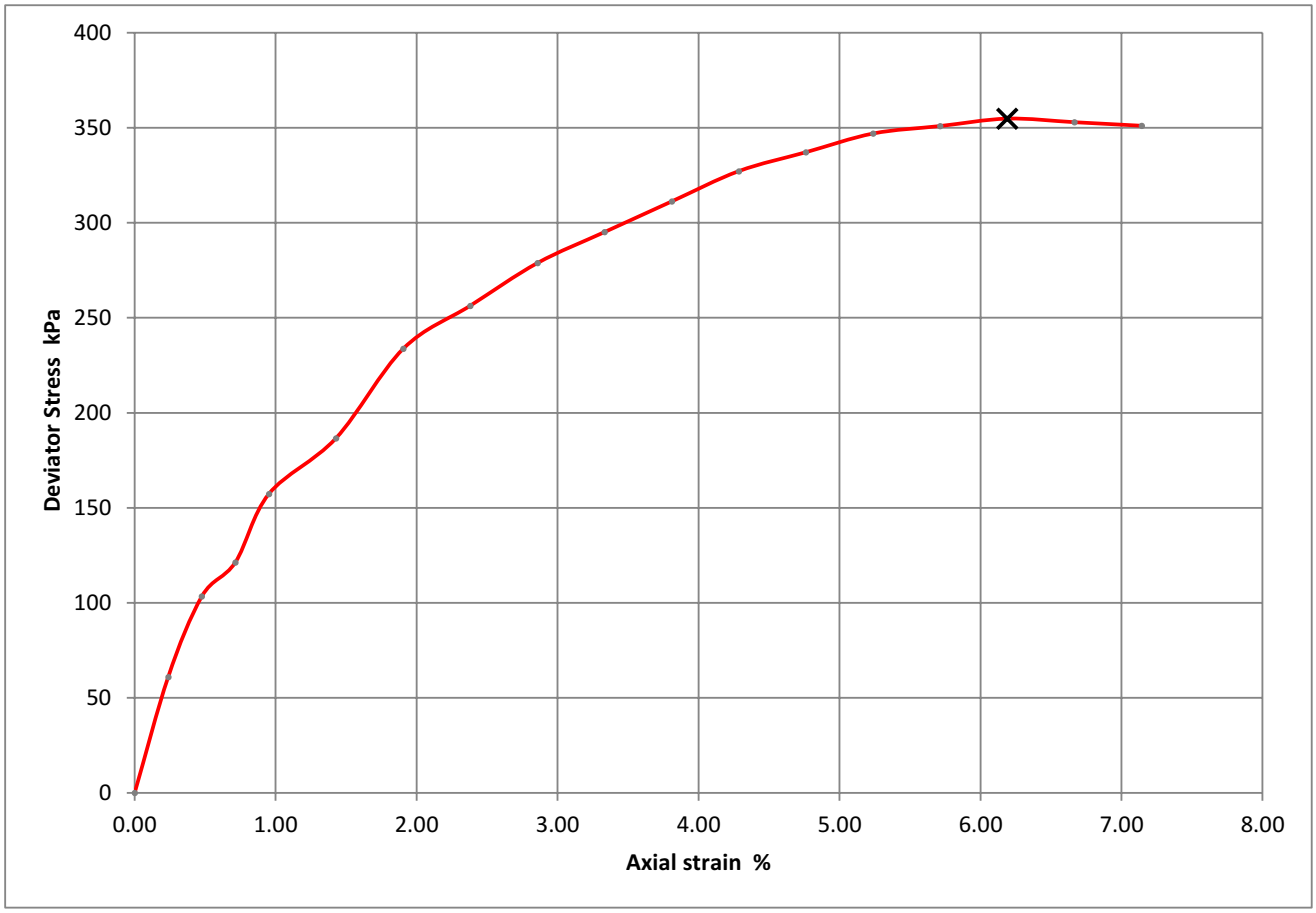
GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	13.50
		Depth Base (m)	13.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.88
Dry Density (Mg/m^3)	1.53
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	270
Deviator Stress (kPa)	309
Undrained Shear Strength (kPa)	154
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	16.50
		Depth Base (m)	16.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

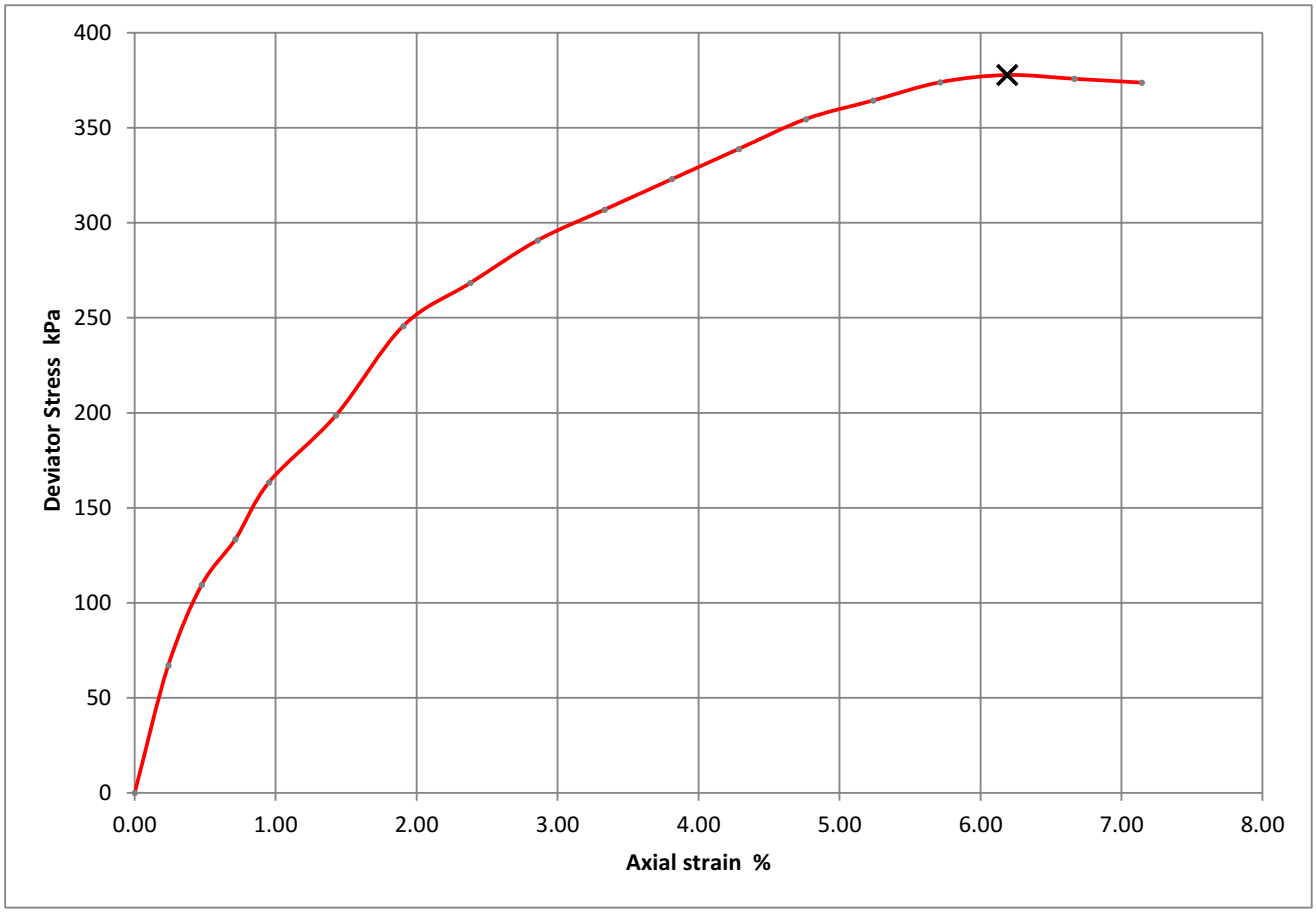


Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.84
Dry Density (Mg/m^3)	1.49
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	210
Deviator Stress (kPa)	355
Undrained Shear Strength (kPa)	177
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	19.50
		Depth Base (m)	19.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

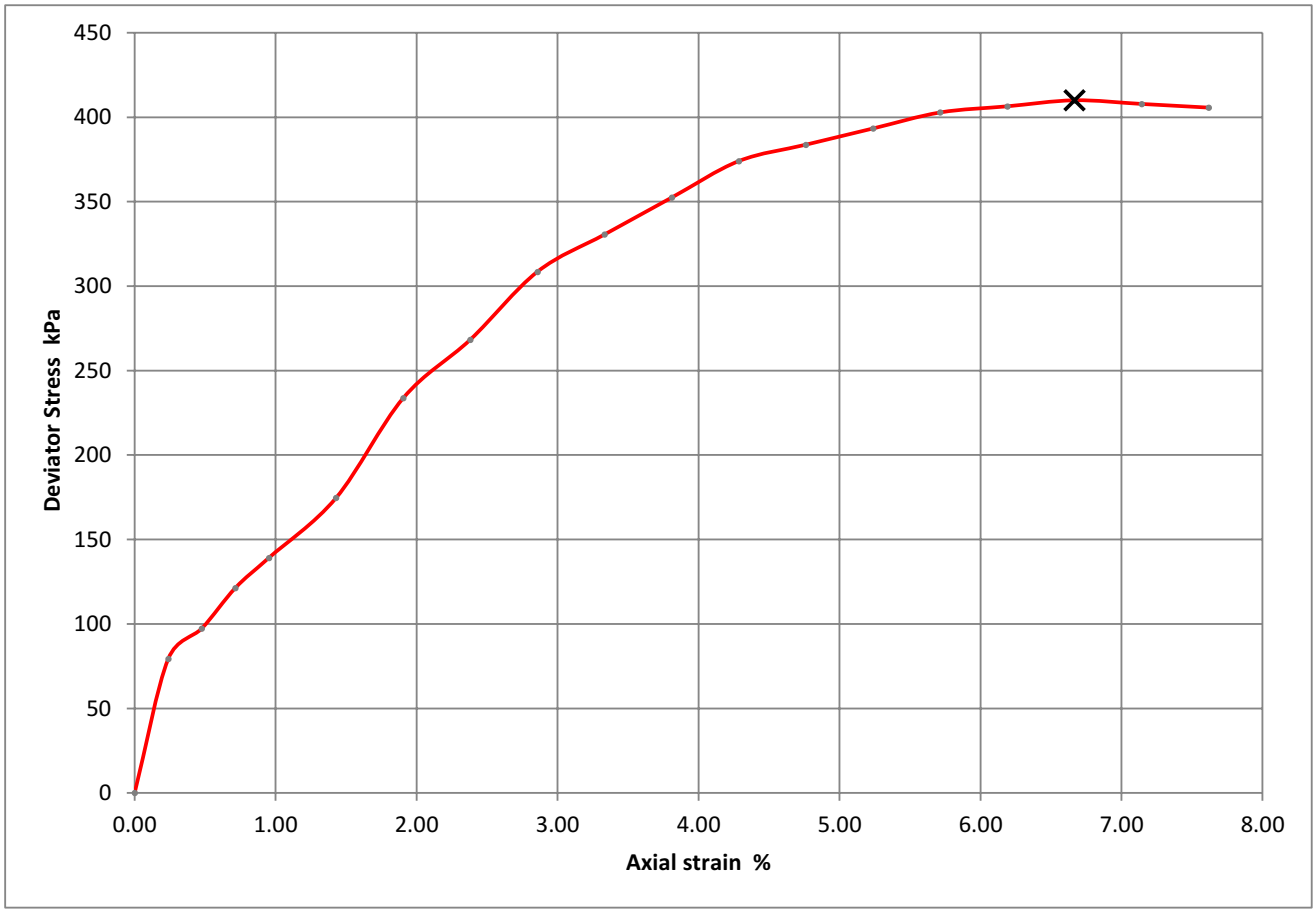


Moisture Content (%)	21
Bulk Density (Mg/m^3)	1.93
Dry Density (Mg/m^3)	1.59
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	390
Deviator Stress (kPa)	378
Undrained Shear Strength (kPa)	189
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	22.50
		Depth Base (m)	22.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

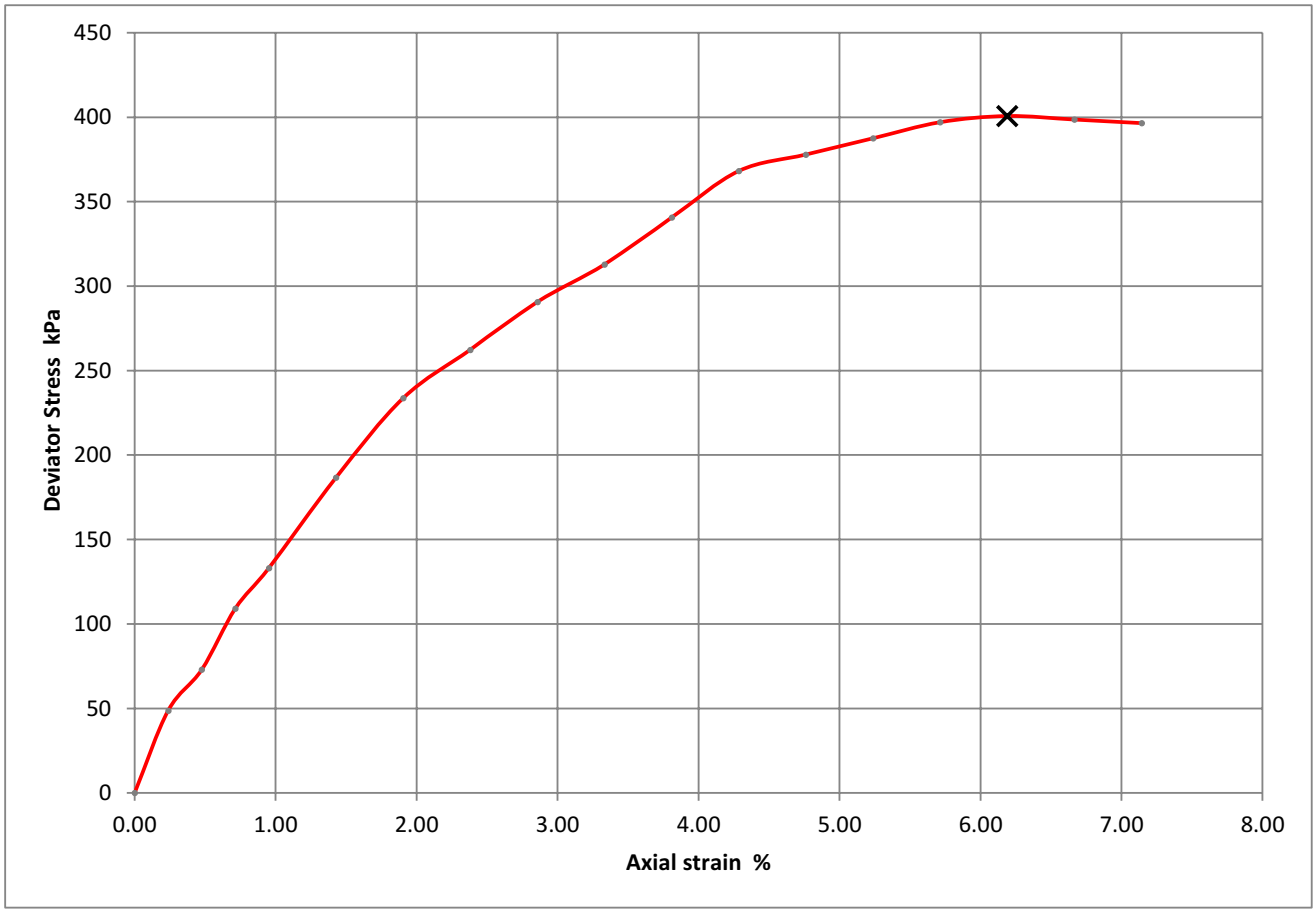


Moisture Content (%)	22
Bulk Density (Mg/m^3)	1.88
Dry Density (Mg/m^3)	1.54
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	450
Deviator Stress (kPa)	410
Undrained Shear Strength (kPa)	205
Failure Strain (%)	7
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	25.50
		Depth Base (m)	25.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

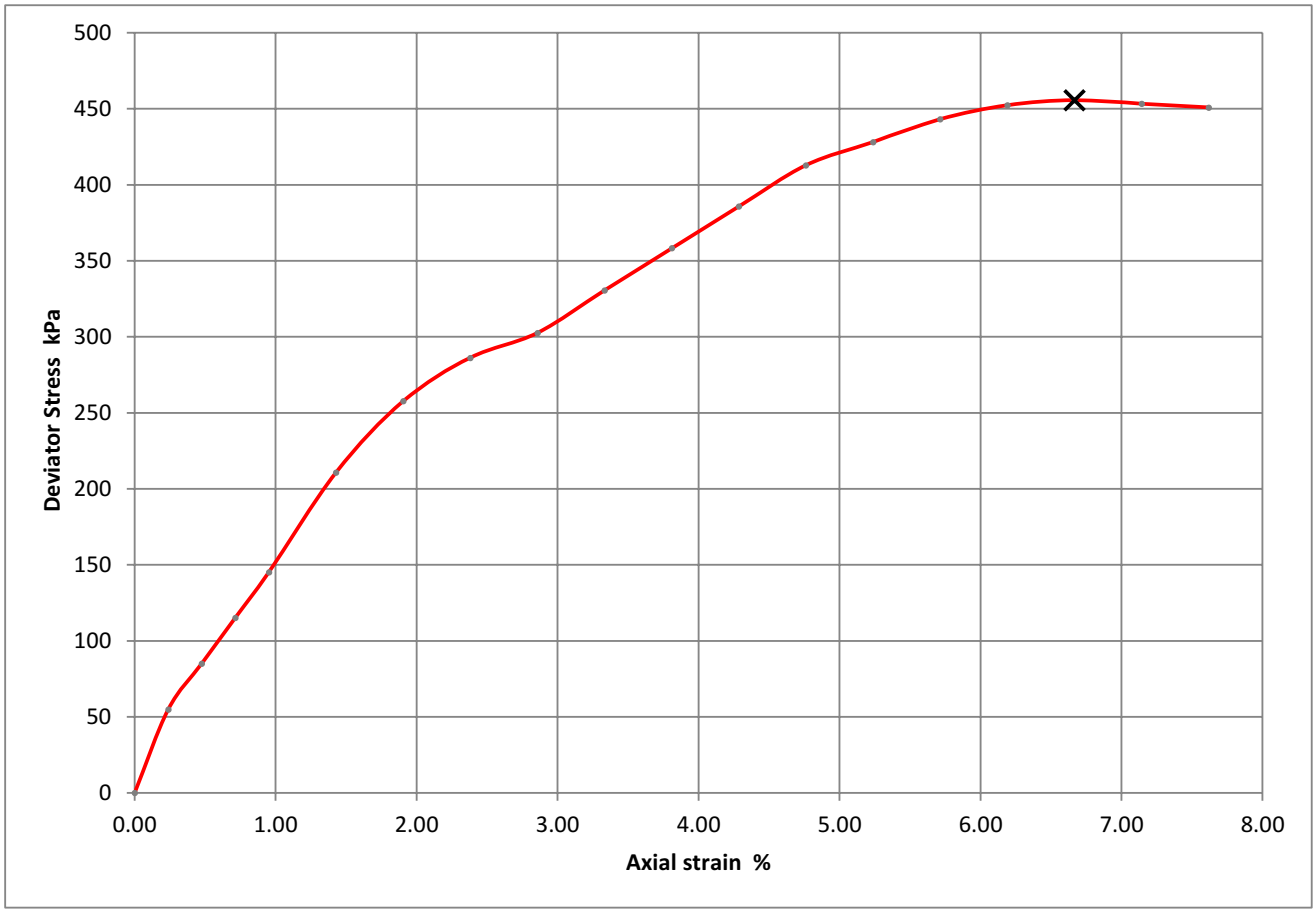


Moisture Content (%)	22
Bulk Density (Mg/m^3)	1.91
Dry Density (Mg/m^3)	1.56
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	510
Deviator Stress (kPa)	401
Undrained Shear Strength (kPa)	200
Failure Strain (%)	6
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	28.50
		Depth Base (m)	28.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

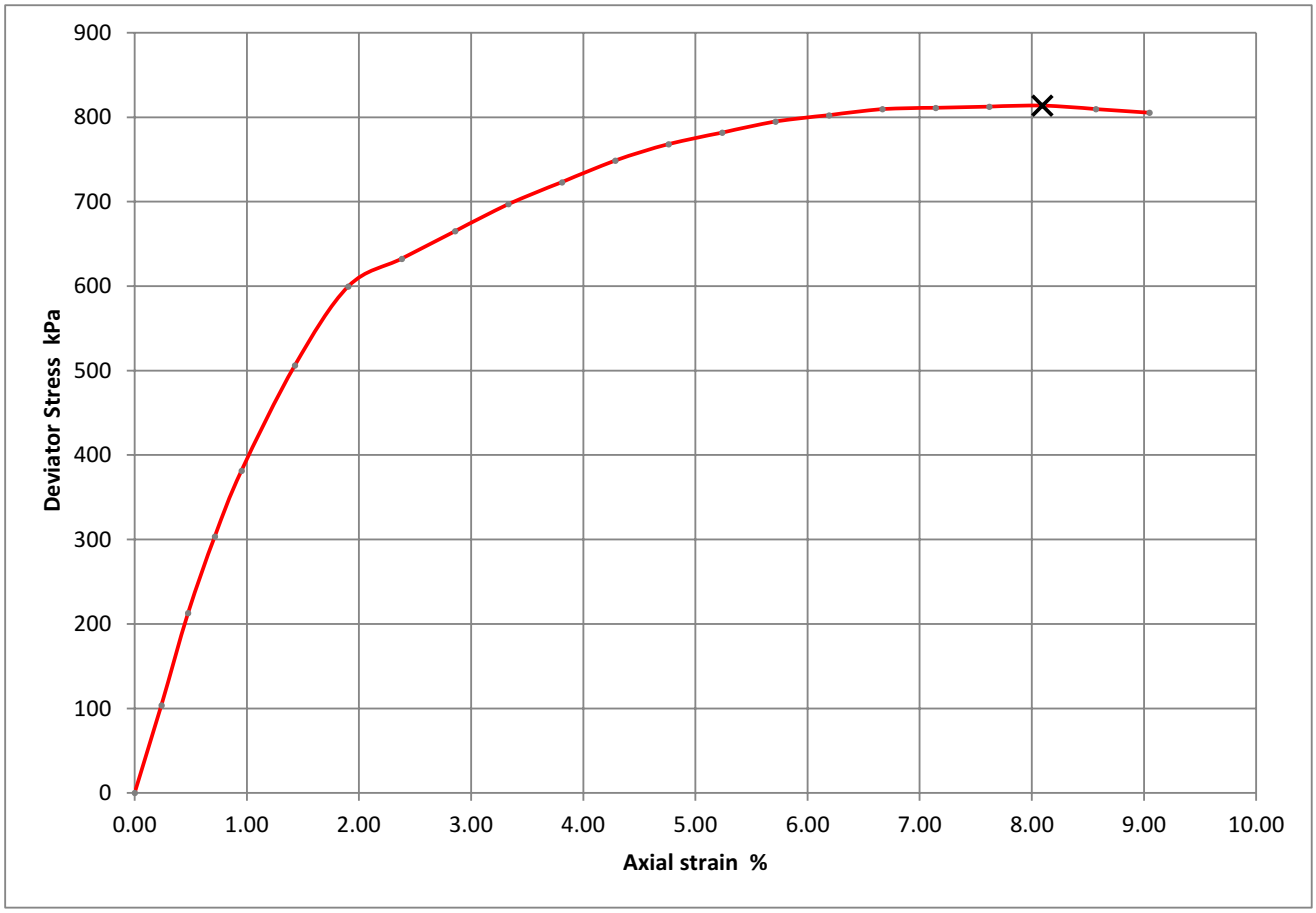


Moisture Content (%)	24
Bulk Density (Mg/m^3)	1.86
Dry Density (Mg/m^3)	1.50
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	570
Deviator Stress (kPa)	456
Undrained Shear Strength (kPa)	228
Failure Strain (%)	7
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	34.50
		Depth Base (m)	34.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B

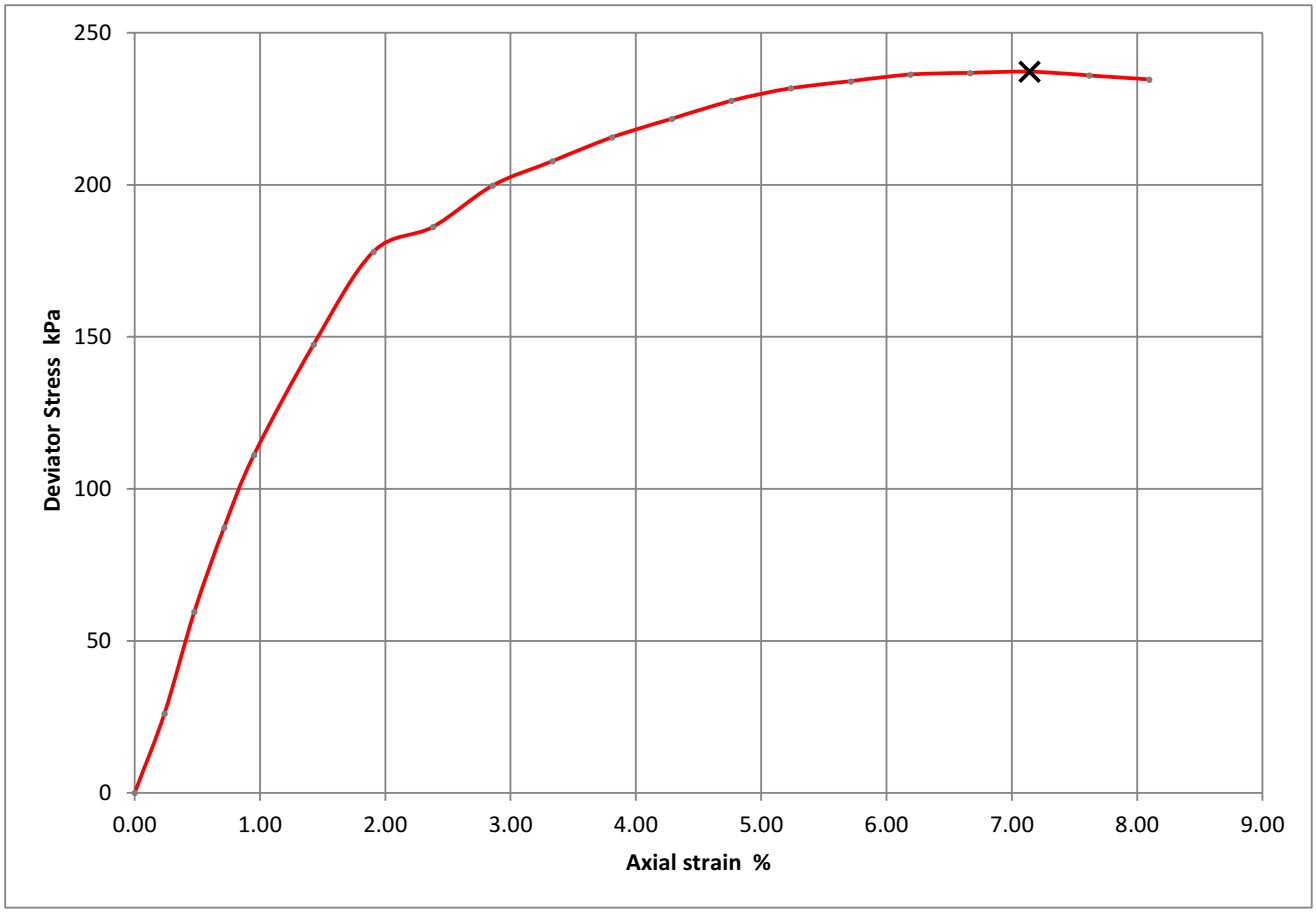


Moisture Content (%)	22
Bulk Density (Mg/m^3)	1.94
Dry Density (Mg/m^3)	1.59
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	750
Deviator Stress (kPa)	814
Undrained Shear Strength (kPa)	407
Failure Strain (%)	8
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL	Single Stage Unconsolidated-Undrained Triaxial Test BS 1377 : 1990 Part 7 : 8	Contract Number	56688
		Borehole/Pit No.	BH02
Site Name	15721 - 52 Avenue Road	Sample No.	
Soil Description	Brown silty CLAY	Depth Top (m)	37.50
		Depth Base (m)	37.95
Date Tested	02/12/2021	Sample Type	U
		Technician	Daniel B



Moisture Content (%)	23
Bulk Density (Mg/m^3)	1.90
Dry Density (Mg/m^3)	1.55
Specimen Length (mm)	210
Specimen Diamteter (mm)	105
Cell Pressure (kPa)	690
Deviator Stress (kPa)	237
Undrained Shear Strength (kPa)	119
Failure Strain (%)	7
Mode Of Failure	Brittle
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43

Checked	07/12/2021	Richard John	
Approved	08/12/2021	Paul Evans	

UKAS TESTING

GSTL

SUMMARY OF SHEAR STRENGTH TESTS (TOTAL STRESS)
(BS 1377 : PART 7 : 3 : 1990)

Contract Number	56688
Site Name	15721 - 52 Avenue Road
Date Tested	07.12.2021

BH/TP Number/ Window sample	Sample Number	Sample Type	Depth (m)			Moisture Content	Location of Test Horizon	Diameter of Tube (mm)	Vane Size (mm)	Disturbed / Undisturbed	Hand Vane	
											Peak	Residual
BH01		U	19.50	-	19.95	22			19	Undisturbed	149	60
BH01		U	19.50	-	19.95	22			19	Undisturbed	148	58
BH01		U	19.50	-	19.95	22			19	Undisturbed	149	60
BH01		U	25.50	-	25.95	22			19	Undisturbed	161	71
BH01		U	25.50	-	25.95	22			19	Undisturbed	161	73
BH01		U	25.50	-	25.95	22			19	Undisturbed	158	71
BH01		U	28.50	-	28.95	24			19	Undisturbed	164	76
BH01		U	28.50	-	28.95	24			19	Undisturbed	161	78
BH01		U	28.50	-	28.95	24			19	Undisturbed	161	78
BH02		U	31.50	-	31.95	23			19	Undisturbed	164	78
BH02		U	31.50	-	31.95	23			19	Undisturbed	166	76
BH02		U	31.50	-	31.95	23			19	Undisturbed	166	78
				-								
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Key	Reported As
Moisture Content	%
Hand Vane	kPa

Operators	Checked	07/12/2021	Richard John	
Conor	Approved	08/12/2021	Paul Evans	

Appendix E: Geo-environmental Laboratory Testing

Sample Summary

Report No.: 21-37075, issue number 2

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
257307	WS01 0.50	01/11/2021	11/11/2021		
257308	WS01 1.00	01/11/2021	11/11/2021		
257309	WS02 0.50	01/11/2021	11/11/2021		
257310	WS02 1.00	01/11/2021	11/11/2021		
257311	WS04 0.50	01/11/2021	11/11/2021		
257312	WS04 1.00	01/11/2021	11/11/2021		
257313	WS06 0.50	02/11/2021	11/11/2021	Sandy silty loam	g
257314	WS06 1.00	02/11/2021	11/11/2021		
257315	WS03 0.50	02/11/2021	11/11/2021	Sandy silty loam	g
257316	WS03 1.00	02/11/2021	11/11/2021		
257317	WS05 0.50	02/11/2021	11/11/2021	Sandy silty loam	g
257318	WS05 1.00	02/11/2021	11/11/2021		
257319	BH01 0.50	02/11/2021	11/11/2021	Sandy clayey loam	g
257320	BH01 1.00	02/11/2021	11/11/2021		
257321	BH01 3.00	02/11/2021	11/11/2021		
257322	BH01 6.00	02/11/2021	11/11/2021		
257323	BH01 9.00	02/11/2021	11/11/2021		
257324	BH01 12.00	02/11/2021	11/11/2021		
257325	BH01 15.00	02/11/2021	11/11/2021	Clay	
257326	BH01 18.00	02/11/2021	11/11/2021		
257327	BH01 21.00	03/11/2021	11/11/2021		
257328	BH01 24.00	03/11/2021	11/11/2021		
257329	BH01 27.00	03/11/2021	11/11/2021		
257330	BH01 30.00	03/11/2021	11/11/2021		
257331	BH01 33.00	03/11/2021	11/11/2021		
257332	BH01 36.00	03/11/2021	11/11/2021		
257333	BH01 39.00	03/11/2021	11/11/2021		
257334	BH02 0.50	03/11/2021	11/11/2021		
257335	BH02 1.50	03/11/2021	11/11/2021	Silty clayey loam	
257336	BH02 2.20	03/11/2021	11/11/2021		
257337	BH02 3.00	03/11/2021	11/11/2021	Silty clayey loam	
257338	BH02 6.00	03/11/2021	11/11/2021		
257339	BH02 9.00	03/11/2021	11/11/2021		
257340	BH02 12.00	04/11/2021	11/11/2021		
257341	BH02 15.00	04/11/2021	11/11/2021		
257342	BH02 18.00	04/11/2021	11/11/2021		
257343	BH02 21.00	04/11/2021	11/11/2021	Clay	
257344	BH02 24.00	04/11/2021	11/11/2021		
257345	BH02 27.00	04/11/2021	11/11/2021		
257346	BH02 30.00	04/11/2021	11/11/2021		
257347	BH02 33.00	04/11/2021	11/11/2021		
257348	BH02 36.00	04/11/2021	11/11/2021		
257349	BH02 39.00	04/11/2021	11/11/2021		
257350	TP01 0.30	02/11/2021	11/11/2021		
257351	TP02 0.40	02/11/2021	11/11/2021		
257352	TP03 0.40	02/11/2021	11/11/2021		
257353	TP04 0.40	02/11/2021	11/11/2021		
257354	TP04 0.80	02/11/2021	11/11/2021		

Results Summary

Report No.: 21-37075, issue number 2

ELAB Reference	257313	257315
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	WS06	WS03
Sample Depth (m)	0.50	0.50
Sampling Date	02/11/2021	02/11/2021

Determinand	Codes	Units	LOD		
Soil sample preparation parameters					
Moisture Content	N	%	0.1	10.3	13.0
Material removed	N	%	0.1	45.5	48.1
Description of Inert material removed	N		0	Stones	Stones,clinker
Metals					
Arsenic	M	mg/kg	1	21.3	29.1
Barium	U	mg/kg	10	124	322
Beryllium	U	mg/kg	1	1.1	< 1.0
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5
Chromium	M	mg/kg	5	37.3	25.4
Chromium (III)	N	mg/kg	5	37.3	25.4
Copper	M	mg/kg	5	33.3	159
Lead	M	mg/kg	5	624	1150
Manganese	U	mg/kg	30	763	381
Mercury	M	mg/kg	0.5	1.0	0.6
Molybdenum	N	mg/kg	0.5	1.6	1.6
Nickel	M	mg/kg	5	30.4	21.3
Selenium	M	mg/kg	1	< 1.0	< 1.0
Vanadium	M	mg/kg	5	52.9	46.1
Zinc	M	mg/kg	5	75.1	297
Anions					
Water Soluble Sulphate	M	g/l	0.02	n/t	n/t
Water Soluble Sulphate	M	mg/kg	40	< 40	< 40
Inorganics					
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8
Total Sulphur	N	%	0.01	n/t	n/t
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	n/t
Water Soluble Boron	N	mg/kg	0.5	< 0.5	< 0.5
Miscellaneous					
Fraction of Organic Carbon	N		0.0001	0.0251	0.0358
pH	M	pH units	0.1	8.6	7.9
Soil Organic Matter	U	%	0.1	0.8	2.0
Total Organic Carbon	N	%	0.01	2.5	3.6

Results Summary

Report No.: 21-37075, issue number 2

ELAB Reference	257313	257315
Customer Reference		
Sample ID		
Sample Type	SOIL	SOIL
Sample Location	WS06	WS03
Sample Depth (m)	0.50	0.50
Sampling Date	02/11/2021	02/11/2021

Determinand	Codes	Units	LOD		
Polyaromatic hydrocarbons					
Naphthalene	M	mg/kg	0.1	g < 0.1	g < 0.1
Acenaphthylene	M	mg/kg	0.1	g < 0.1	g < 0.1
Acenaphthene	M	mg/kg	0.1	g 0.1	g < 0.1
Fluorene	M	mg/kg	0.1	g < 0.1	g < 0.1
Phenanthrene	M	mg/kg	0.1	g 0.7	g 0.6
Anthracene	M	mg/kg	0.1	g 0.1	g 0.2
Fluoranthene	M	mg/kg	0.1	g 1.0	g 1.9
Pyrene	M	mg/kg	0.1	g 0.8	g 1.6
Benzo(a)anthracene	M	mg/kg	0.1	g 0.4	g 0.8
Chrysene	M	mg/kg	0.1	g 0.5	g 0.9
Benzo(b)fluoranthene	M	mg/kg	0.1	g 0.4	g 0.9
Benzo(k)fluoranthene	M	mg/kg	0.1	g 0.4	g 1.0
Benzo(a)pyrene	M	mg/kg	0.1	g 0.4	g 0.9
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	g 0.4	g 0.6
Dibenzo(a,h)anthracene	M	mg/kg	0.1	g < 0.1	g 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1	g 0.3	g 0.6
Total PAH(16)	M	mg/kg	0.4	g 5.8	g 10.1
BTEX					
Benzene	M	ug/kg	10	g < 10.0	g < 10.0
Toluene	M	ug/kg	10	g < 10.0	g < 10.0
Ethylbenzene	M	ug/kg	10	g < 10.0	g < 10.0
Xylenes	M	ug/kg	10	g < 10.0	g < 10.0
MTBE	N	ug/kg	10	g < 10.0	g < 10.0
TPH CWG					
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	1.8
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	1.4
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	3.1
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	2.4	< 1.0
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	9.8	< 1.0
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	16.5	9.1
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	3.2
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	30.0	13.4
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	30.0	16.5

Results Summary

Report No.: 21-37075, issue number 2

			ELAB Reference	257317	257319	257325
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	WS05	BH01	BH01
			Sample Depth (m)	0.50	0.50	15.00
			Sampling Date	02/11/2021	02/11/2021	02/11/2021
Determinand	**Codes**	**Units**	**LOD**			
Soil sample preparation parameters						
Moisture Content	N	%	0.1	16.1	20.7	19.9
Material removed	N	%	0.1	30.5	< 0.1	< 0.1
Description of Inert material removed	N		0	Stones,brick,clinker	None	None
Metals						
Arsenic	M	mg/kg	1	23.0	14.2	n/t
Barium	U	mg/kg	10	218	78.7	n/t
Beryllium	U	mg/kg	1	1.2	< 1.0	n/t
Cadmium	M	mg/kg	0.5	< 0.5	< 0.5	n/t
Chromium	M	mg/kg	5	38.5	33.7	n/t
Chromium (III)	N	mg/kg	5	38.5	33.7	n/t
Copper	M	mg/kg	5	64.8	18.2	n/t
Lead	M	mg/kg	5	806	129	n/t
Manganese	U	mg/kg	30	504	375	n/t
Mercury	M	mg/kg	0.5	1.7	< 0.5	n/t
Molybdenum	N	mg/kg	0.5	1.4	1.3	n/t
Nickel	M	mg/kg	5	29.4	22.0	n/t
Selenium	M	mg/kg	1	< 1.0	< 1.0	n/t
Vanadium	M	mg/kg	5	69.7	64.9	n/t
Zinc	M	mg/kg	5	569	77.4	n/t
Anions						
Water Soluble Sulphate	M	g/l	0.02	n/t	0.09	0.51
Water Soluble Sulphate	M	mg/kg	40	52	184	n/t
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	< 0.8	< 0.8	n/t
Total Sulphur	N	%	0.01	n/t	0.04	0.22
Acid Soluble Sulphate (SO4)	U	%	0.02	n/t	0.28	0.15
Water Soluble Boron	N	mg/kg	0.5	< 0.5	< 0.5	n/t
Miscellaneous						
Fraction of Organic Carbon	N		0.0001	0.0116	0.0116	n/t
pH	M	pH units	0.1	8.4	8.3	8.2
Soil Organic Matter	U	%	0.1	1.7	1.2	n/t
Total Organic Carbon	N	%	0.01	1.2	1.2	n/t

Results Summary

Report No.: 21-37075, issue number 2

			ELAB Reference	257317	257319	257325
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	WS05	BH01	BH01
			Sample Depth (m)	0.50	0.50	15.00
			Sampling Date	02/11/2021	02/11/2021	02/11/2021
Determinand	**Codes**	**Units**	**LOD**			
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Acenaphthylene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Acenaphthene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Fluorene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Phenanthrene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Anthracene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Fluoranthene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Pyrene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Benzo(a)anthracene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Chrysene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Benzo(a)pyrene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	g < 0.1	g < 0.1	n/t
Total PAH(16)	M	mg/kg	0.4	g < 0.4	g < 0.4	n/t
BTEX						
Benzene	M	ug/kg	10	g < 10.0	g < 10.0	n/t
Toluene	M	ug/kg	10	g < 10.0	g < 10.0	n/t
Ethylbenzene	M	ug/kg	10	g < 10.0	g < 10.0	n/t
Xylenes	M	ug/kg	10	g < 10.0	g < 10.0	n/t
MTBE	N	ug/kg	10	g < 10.0	g < 10.0	n/t
TPH CWG						
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01	n/t
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01	n/t
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	< 1.0	n/t
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	1.3	n/t
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	< 1.0	6.8	n/t
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	< 1.0	8.8	n/t
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01	n/t
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	g < 0.01	g < 0.01	n/t
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	< 1.0	n/t
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	n/t
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	1.5	n/t
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	< 1.0	< 1.0	n/t
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	< 1.0	2.7	n/t
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	< 1.0	11.5	n/t

Results Summary

Report No.: 21-37075, issue number 2

			ELAB Reference	257335	257337	257343
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	BH02	BH02	BH02
			Sample Depth (m)	1.50	3.00	21.00
			Sampling Date	03/11/2021	03/11/2021	04/11/2021
Determinand	**Codes**	**Units**	**LOD**			
Soil sample preparation parameters						
Moisture Content	N	%	0.1	17.0	18.6	19.1
Material removed	N	%	0.1	< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None	None
Metals						
Arsenic	M	mg/kg	1	n/t	n/t	n/t
Barium	U	mg/kg	10	n/t	n/t	n/t
Beryllium	U	mg/kg	1	n/t	n/t	n/t
Cadmium	M	mg/kg	0.5	n/t	n/t	n/t
Chromium	M	mg/kg	5	n/t	n/t	n/t
Chromium (III)	N	mg/kg	5	n/t	n/t	n/t
Copper	M	mg/kg	5	n/t	n/t	n/t
Lead	M	mg/kg	5	n/t	n/t	n/t
Manganese	U	mg/kg	30	n/t	n/t	n/t
Mercury	M	mg/kg	0.5	n/t	n/t	n/t
Molybdenum	N	mg/kg	0.5	n/t	n/t	n/t
Nickel	M	mg/kg	5	n/t	n/t	n/t
Selenium	M	mg/kg	1	n/t	n/t	n/t
Vanadium	M	mg/kg	5	n/t	n/t	n/t
Zinc	M	mg/kg	5	n/t	n/t	n/t
Anions						
Water Soluble Sulphate	M	g/l	0.02	0.08	3.58	0.77
Water Soluble Sulphate	M	mg/kg	40	n/t	n/t	n/t
Inorganics						
Hexavalent Chromium	N	mg/kg	0.8	n/t	n/t	n/t
Total Sulphur	N	%	0.01	0.04	2.0	0.45
Acid Soluble Sulphate (SO4)	U	%	0.02	0.07	5.72	0.27
Water Soluble Boron	N	mg/kg	0.5	n/t	n/t	n/t
Miscellaneous						
Fraction of Organic Carbon	N		0.0001	n/t	n/t	n/t
pH	M	pH units	0.1	8.2	7.7	8.1
Soil Organic Matter	U	%	0.1	n/t	n/t	n/t
Total Organic Carbon	N	%	0.01	n/t	n/t	n/t

Results Summary

Report No.: 21-37075, issue number 2

			ELAB Reference	257335	257337	257343
			Customer Reference			
			Sample ID			
			Sample Type	SOIL	SOIL	SOIL
			Sample Location	BH02	BH02	BH02
			Sample Depth (m)	1.50	3.00	21.00
			Sampling Date	03/11/2021	03/11/2021	04/11/2021
Determinand	**Codes**	**Units**	**LOD**			
Polyaromatic hydrocarbons						
Naphthalene	M	mg/kg	0.1	n/t	n/t	n/t
Acenaphthylene	M	mg/kg	0.1	n/t	n/t	n/t
Acenaphthene	M	mg/kg	0.1	n/t	n/t	n/t
Fluorene	M	mg/kg	0.1	n/t	n/t	n/t
Phenanthrene	M	mg/kg	0.1	n/t	n/t	n/t
Anthracene	M	mg/kg	0.1	n/t	n/t	n/t
Fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t
Pyrene	M	mg/kg	0.1	n/t	n/t	n/t
Benzo(a)anthracene	M	mg/kg	0.1	n/t	n/t	n/t
Chrysene	M	mg/kg	0.1	n/t	n/t	n/t
Benzo(b)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t
Benzo(k)fluoranthene	M	mg/kg	0.1	n/t	n/t	n/t
Benzo(a)pyrene	M	mg/kg	0.1	n/t	n/t	n/t
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1	n/t	n/t	n/t
Dibenzo(a,h)anthracene	M	mg/kg	0.1	n/t	n/t	n/t
Benzo[g,h,i]perylene	M	mg/kg	0.1	n/t	n/t	n/t
Total PAH(16)	M	mg/kg	0.4	n/t	n/t	n/t
BTEX						
Benzene	M	ug/kg	10	n/t	n/t	n/t
Toluene	M	ug/kg	10	n/t	n/t	n/t
Ethylbenzene	M	ug/kg	10	n/t	n/t	n/t
Xylenes	M	ug/kg	10	n/t	n/t	n/t
MTBE	N	ug/kg	10	n/t	n/t	n/t
TPH CWG						
>C5-C6 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	n/t	n/t	n/t
>C6-C8 Aliphatic (HS_1D_MS)	N	mg/kg	0.01	n/t	n/t	n/t
>C8-C10 Aliphatic (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	n/t	n/t	n/t
>C10-C12 Aliphatic (EH_2D_AL)	M	mg/kg	1	n/t	n/t	n/t
>C12-C16 Aliphatic (EH_2D_AL)	M	mg/kg	1	n/t	n/t	n/t
>C16-C21 Aliphatic (EH_2D_AL)	M	mg/kg	1	n/t	n/t	n/t
>C21-C35 Aliphatic (EH_2D_AL)	M	mg/kg	1	n/t	n/t	n/t
>C35-C40 Aliphatic (EH_2D_AL)	M	mg/kg	1	n/t	n/t	n/t
Total aliphatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AL)	N	mg/kg	1	n/t	n/t	n/t
>C5-C7 Aromatic (HS_1D_MS)	N	mg/kg	0.01	n/t	n/t	n/t
>C7-C8 Aromatic (HS_1D_MS)	N	mg/kg	0.01	n/t	n/t	n/t
>C8-C10 Aromatic (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	n/t	n/t	n/t
>C10-C12 Aromatic (EH_2D_AR)	M	mg/kg	1	n/t	n/t	n/t
>C12-C16 Aromatic (EH_2D_AR)	M	mg/kg	1	n/t	n/t	n/t
>C16-C21 Aromatic (EH_2D_AR)	M	mg/kg	1	n/t	n/t	n/t
>C21-C35 Aromatic (EH_2D_AR)	M	mg/kg	1	n/t	n/t	n/t
>C35-C40 Aromatic (EH_2D_AR)	M	mg/kg	1	n/t	n/t	n/t
Total aromatic hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_AR)	N	mg/kg	1	n/t	n/t	n/t
Total petroleum hydrocarbons (>C5 - C40) (HS_1D_MS+EH_2D_Total)	N	mg/kg	1	n/t	n/t	n/t

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Results Summary

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Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
257313	0.50	WS06	Brown sandy Soil,Stones,Brick,Concrete	No asbestos detected	n/t	n/t	n/t	n/t
257315	0.50	WS03	Brown sandy Soil,Stones,Brick,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
257317	0.50	WS05	Brown Sandy Soil,Stones,Wood,Clinker	No asbestos detected	n/t	n/t	n/t	n/t
257319	0.50	BH01	Brown Sandy Soil,Stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

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Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Hexavalent chromium	N	As submitted sample	15/11/2021	110	Colorimetry
pH	M	Air dried sample	17/11/2021	113	Electromeric
Acid Soluble Sulphate	U	Air dried sample	17/11/2021	115	Ion Chromatography
Aqua regia extractable metals	M	Air dried sample	15/11/2021	118	ICPMS
PAH (GC-FID)	M	As submitted sample	08/12/2021	133	GC-FID
Water soluble anions	M	Air dried sample	15/11/2021	172	Ion Chromatography
Low range Aliphatic hydrocarbons soil	N	As submitted sample	09/12/2021	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	09/12/2021	181	GC-MS
BTEX in solids	M	As submitted sample	09/12/2021	181A	GC-MS
Water soluble boron	N	Air dried sample	15/11/2021	202	Colorimetry
Total organic carbon/Total sulphur	N	Air dried sample	16/11/2021	210	IR
TPH CWG soil by gc-gc	M	As submitted sample	07/12/2021	271	
Asbestos identification	U	Air dried sample	08/12/2021	280	Microscopy
Soil organic matter	U	Air dried sample	09/12/2021	BS1377:P3	Titrimetry

Tests marked N are not UKAS accredited

Report Information

Report No.: 21-37075, issue number 2

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

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Appendix D: Human Health Screening Criteria

Human Health Generic Quantitative Assessment for Soil

Key:

Exceedance of the GAC

GAC - Generic Assessment Criteria

Laboratory Report Ref.				257313	257315	257317	257319	257325	257335	257337	257343
Exploratory Location Ref.		**Residential Without Home Grown Produce**		WS06	WS03	WS05	BH01	BH01	BH02	BH02	BH02
Sample Depth (m)	**Units**			0.50	0.50	0.50	0.50	15.00	1.50	3.00	21.00
Sample Date				2/11/21	2/11/21	2/11/21	2/11/21	2/11/21	3/11/21	3/11/21	3/11/21
Made Ground / Natural ?		**1% SOM**		MG	MG	MG	MG	LC	MG	LC	LC
		GAC	**GAC Ref.**								
Anions and Other											
Moisture Content	%	-		10.3	13	16.1	20.7	19.9	17	18.6	19.1
Materials Removed	%	-		Stones	stones, clinker	stones,brick and clinker	None	None	None	None	None
Description of inert materials removed	-	-									
Water Soluble Sulphate	g/l	-		-	-	-	0.09	0.51	0.08	3.58	0.77
Water Soluble Sulphate	mg/kg	-		<40	<40	52	184				
Hexavalent Chromium	mg/kg	21	DEFRA C4SLs	<0.8	<0.8	<0.8	<0.8	-	-	-	-
Total Sulphur	%	-		-	-	-	0.04	0.22	0.04	2	0.45
Acid Soluble Sulphate (SO4)	%	-		-	-	-	0.28	0.15	0.07	5.72	0.27
Water Soluble Boron	mg/kg	11,000	LQM S4ULs	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Fraction Organic Carbon		-		0.0251	0.0358	0.0116	0.0116				
Soil Organic Matter	%	-		0.8	2	1.7	1.2				
Total Organic Carbon	%	-		2.5	3.6	1.2	1.2				
pH	pH units	-		8.6	7.9	8.4	8.3	8.2	8.2	7.7	8.1
Heavy Metals and Metalloids											
Arsenic	mg/kg	40	DEFRA C4SLs	21.3	29.1	23	14.2	-	-	-	-
Barium	mg/kg	1300	CL:AIRE GAC	124	322	218	78.7	-	-	-	-
Beryllium	mg/kg	1.7	LQM S4ULs	1.1	<1	1.2	<1	-	-	-	-
Cadmium	mg/kg	150	DEFRA C4SLs	<0.5	<0.5	<0.5	<0.5	-	-	-	-
Chromium	mg/kg	910	LQM S4ULs	37.3	25.4	38.5	33.7	-	-	-	-
Chromium (III)	mg/kg	910	LQM S4ULs	37.3	25.4	38.5	33.7	-	-	-	-
Copper	mg/kg	7,100	LQM S4ULs	33.3	159	64.8	18.2	-	-	-	-
Lead	mg/kg	310	DEFRA C4SLs	624	1150	806	129	-	-	-	-
Manganese	mg/kg	-		763	381	504	375	-	-	-	-
Mercury	mg/kg	15	LQM S4ULs	1	0.6	1.7	<0.5	-	-	-	-
Molybdenum	mg/kg	670	CL:AIRE GAC	1.6	1.6	1.4	1.3	-	-	-	-
Nickel	mg/kg	180	LQM S4ULs	30.4	21.3	29.4	22	-	-	-	-
Selenium	mg/kg	430	LQM S4ULs	<1	<1	<1	<1	-	-	-	-
Vanadium	mg/kg	1,200	LQM S4ULs	52.9	46.1	69.7	64.9	-	-	-	-
Zinc	mg/kg	40,000	LQM S4ULs	75.1	297	569	77.4	-	-	-	-
Polyaromatic Hydrocarbons											
Naphthalene	mg/kg	2.3	LQM S4ULs	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Acenaphthylene	mg/kg	2,900	LQM S4ULs	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Acenaphthene	mg/kg	3,000	LQM S4ULs	0.1	<0.1	<0.1	<0.1	-	-	-	-
Fluorene	mg/kg	2,800	LQM S4ULs	<0.1	<0.1	<0.1	<0.1	-	-	-	-
Phenanthrene	mg/kg	1,300	LQM S4ULs	0.7	0.6	<0.1	<0.1	-	-	-	-
Anthracene	mg/kg	31,000	LQM S4ULs	0.1	0.2	<0.1	<0.1	-	-	-	-
Fluoranthene	mg/kg	1,500	LQM S4ULs	1	1.9	<0.1	<0.1	-	-	-	-

Human Health Generic Quantitative Assessment for Soil

Key:

Exceedance of the GAC

GAC - Generic Assessment Criteria

Laboratory Report Ref.	Units	Residential Without Home Grown Produce		257313	257315	257317	257319	257325	257335	257337	257343
Exploratory Location Ref.				WS06	WS03	WS05	BH01	BH01	BH02	BH02	BH02
Sample Depth (m)				0.50	0.50	0.50	0.50	15.00	1.50	3.00	21.00
Sample Date				2/11/21	2/11/21	2/11/21	2/11/21	2/11/21	3/11/21	3/11/21	3/11/21
Pyrene	mg/kg	3,700	LQM S4ULs	0.8	1.6	<0.1	<0.1	-	-	-	-
Benzo(a)anthracene	mg/kg	11	LQM S4ULs	0.4	0.8	<0.1	<0.1	-	-	-	-
Chrysene	mg/kg	30	LQM S4ULs	0.5	0.9	<0.1	<0.1	-	-	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM S4ULs	0.4	0.9	<0.1	<0.1	-	-	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM S4ULs	0.4	1	<0.1	<0.1	-	-	-	-
Benzo(a)pyrene	mg/kg	5.3	DEFRA C4SLs	0.4	0.9	<0.1	<0.1	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	45	LQM S4ULs	0.4	0.6	<0.1	<0.1	-	-	-	-
Dibenzo(a,h)anthracene	mg/kg	0.31	LQM S4ULs	<0.1	0.1	<0.1	<0.1	-	-	-	-
Benzo(ghi)perylene	mg/kg	360	LQM S4ULs	0.3	0.6	<0.1	<0.1	-	-	-	-
Total PAH(16)	mg/kg	-		5.8	10.1	<0.1	<0.1	-	-	-	-
TPH											
>C5-C6 Aliphatic	mg/kg	42	LQM S4ULs	<0.01	<0.01	<0.01	<0.01	-	-	-	-
>C6-C8 Aliphatic	mg/kg	100	LQM S4ULs	<0.01	<0.01	<0.01	<0.01	-	-	-	-
>C8-C10 Aliphatic	mg/kg	27	LQM S4ULs	<1	<1	<1	<1	-	-	-	-
>C10-C12 Aliphatic	mg/kg	130	LQM S4ULs	<1	<1	<1	<1	-	-	-	-
>C12-C16 Aliphatic	mg/kg	1100	LQM S4ULs	<1	<1	<1	<1	-	-	-	-
>C16-C21 Aliphatic	mg/kg	65,000	LQM S4ULs	<1	<1	<1	<1	-	-	-	-
>C21-C35 Aliphatic	mg/kg			<1	1.8	<1	1.3	-	-	-	-
>C35-C40 Aliphatic	mg/kg	65,000	LQM	<1	1.4	<1	6.8	-	-	-	-
Total aliphatic hydrocarbons (>C5 - C35)	mg/kg	-		<1	3.1	<1	8.8	-	-	-	-
>C5-C7 Aromatic	mg/kg	370	LQM S4ULs	<0.01	<0.01	<0.01	<0.01	-	-	-	-
>C7-C8 Aromatic	mg/kg	860	LQM S4ULs	<0.01	<0.01	<0.01	<0.01	-	-	-	-
>C8-C10 Aromatic	mg/kg	47	LQM S4ULs	<0.1	<0.1	<0.1	<0.1	-	-	-	-
>C10-C12 Aromatic	mg/kg	250	LQM S4ULs	<0.1	<0.1	<0.1	<0.1	-	-	-	-
>C12-C16 Aromatic	mg/kg	1,800	LQM S4ULs	2.4	<0.1	<0.1	<0.1	-	-	-	-
>C16-C21 Aromatic	mg/kg	1,900	LQM S4ULs	9.8	<0.1	<0.1	<0.1	-	-	-	-
>C21-C35 Aromatic	mg/kg	1,900	LQM S4ULs	16.5	9.1	<0.1	1.5	-	-	-	-
>C35-C40 Aromatic	mg/kg	1,900	LQM S4ULs	<1	3.2	<0.1	<0.1	-	-	-	-
Total aromatic hydrocarbons (>C5 - C35)	mg/kg	-		30	13.4	<0.1	2.7	-	-	-	-
Total petroleum hydrocarbons (>C5 - C40)	mg/kg	-		30	16.5	<0.1	11.5	-	-	-	-
BTEX and MTBE											
MTBE	mg/kg	73	CL:AIRE GAC	<10	<10	<10	<10	-	-	-	-
Benzene	mg/kg	0.89	DEFRA C4SLs	<10	<10	<10	<10	-	-	-	-
Toluene	mg/kg	880	LQM S4ULs	<10	<10	<10	<10	-	-	-	-
Ethylbenzene	mg/kg	83	LQM S4ULs	<10	<10	<10	<10	-	-	-	-
Xylene	mg/kg	79	LQM S4ULs	<10	<10	<10	<10	-	-	-	-

Appendix E: Phase I Desk Study Report

A-squared Studio

52 Avenue Road

Phase I Desk Study

May 2022

1942-A2S-XX-XX-RP-Y-0001-03

Project Name	52 Avenue Road
Project Number	1942
Client	Heyne Tillett Steel Ltd
Document Name	Phase I Desk Study

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Document Reference	Status	Revision	Issued by	Date
1942-A2S-XX-XX-RP-Y-0001-00	First Issue	00	AC	11.11.2021
1942-A2S-XX-XX-RP-Y-0001-01	Second Issue Including corrected address in Envirocheck report	01	AC	16.11.2021
1942-A2S-XX-XX-RP-Y-0001-02	Third Issue Updated for 12-unit scheme.	02	AC	06.05.2022
1942-A2S-XX-XX-RP-Y-0001-03	Fourth Issue Updated scheme drawings	03	AC	09.05.2022

Contents

Appendices

1. Introduction

A-squared Studio Engineers Ltd (A-squared) has been engaged by Heyne Tillett Steel Ltd (HTS) to prepare a Phase I desk study report for the proposed development at 52 Avenue Road, NW8 6HS (herein called the 'site').

1.1. Study Aims and Objectives

The desk study develops an initial Conceptual Site Model (CSM) and provides a qualitative Preliminary Risk Assessment (PRA) for the proposed development in accordance with the principals set out in *Land Contamination Risk Management (LCRM)* guidance, published by the Environment Agency on the UK Government website. The desk study has also been prepared in the context of the *National Planning Policy Framework* (NPPF) and *The Building Regulations 2010, Approved Document C - Site preparation and resistance to contaminants and moisture (2004 Edition incorporating 2010 and 2013 amendments)*. The desk study includes an assessment of whether there are any unacceptable risks (ref. *LCRM* guidance) which require further geo-environmental investigation.

Potential historical and current sources of contamination have been identified based on information available in the public domain (including information sources referenced in Section 1.2).

The proposed development is described in Section 6 and comprises the demolition of a two-storey building and construction of 12 two-storey housing units over three separate blocks.

The outcomes of this desk study are of a preliminary nature and have been developed based on information current at the time of writing. The information provided herein has been compiled in order to support design development and is not suitable for detailed design or scheme costing purposes.

1.2. Information Sources

- *Envirocheck Report* for 52 Avenue Road, prepared by Landmark Information Group, dated October 2021 (ref. 286852753_1_1), included in Appendix B.
- *Preliminary Unexploded Ordnance (UXO) Risk Assessment* for 52 Avenue Road, prepared by 6 Alpha Associates, dated October 2021 (ref. 286852753_2), included in Appendix C.
- *52 Avenue Road, HTS Initial Site Considerations and Basement Study,* prepared by Heyne Tillett Steel Ltd.
- British Geological Survey, GeoIndex Onshore GIS database (accessed 28th October 2021); https://mapapps2.bgs.ac.uk/geoindex/.
- Department for Environment, Food & Rural Affairs (DEFRA), Magic Map Application (accessed 28th October 2021); http://magic.defra.gov.uk/MagicMap.aspx.
- Health Protection Agency and British Geological Survey Document Indicative Atlas of Radon in England and Wales, 2007 (accessed 28th October 2021); http://www.ukradon.org/information/ukmaps.
- *The Lost Rivers of London* by Nicholas Barton, 1962.
- Google Earth (accessed 28th October 2021); http://earth.google.com/web/.
- Flood Maps for Planning (ref. https://flood-map-for-planning.service.gov.uk/), accessed 28th October 2021.
- Camden Council planning application search (ref. https://planningrecords.camden.gov.uk/Northgate/PlanningExplorer/GeneralSearch.aspx/), accessed 7th November 2021.

2. Site Setting

2.1. Development Location and Current Site Use

The development site is located at 52 Avenue Road, NW8 6HS, as shown in Figure 2.1. The approximate National Grid reference for the site is 527010, 183850 and the site footprint covers approximately 0.28 hectares. The approximate ground surface elevation at the site is 46m above Ordnance Datum (mOD) and ground surface levels in the surrounding area fall toward the south east by approximately 6m over 275m. The development site falls within the administrative boundaries of the London Borough of Camden and currently houses a two-storey L-shaped residential building with a large garden.

The existing superstructure is anticipated to comprise of masonry or timber walls, with timber floors and roofing frame with a load-bearing masonry façade.

The foundations are expected to be shallow strip footings below the walls and pads underneath any internal columns and core.

The current land uses within a 250m radius surrounding the site are summarised in Table 2.1.

Figure 2.1 Location of the proposed development (red-line marks the site boundary for this report)

Table 2.1 Surrounding land uses summary

Bearing from Site	Features directly adjacent to the site boundary	Other identified land uses and key structures
North	57 Elsworthy Road – a three-storey residential property with a garden.	Swiss Cottage School Development & Research Centre – 110m north east. The UCL Academy – 210m north east. Marriott Hotel – 250m north.

Bearing from Site	Features directly adjacent to the site boundary	Other identified land uses and key structures
South	Avenue Road – a single carriageway road of approximately 10m in width.	Residential properties with gardens – 15m south. Electric car charging stations – 110m south closest.
East	50 Avenue Road – a three-storey residential property with a garden.	Primrose Hill public park – 100m east. Wembrook school – 70m south east.
West	Elsworthy Road – a single carriageway road of approximately 10m in width.	81 Avenue Road: a residential property with an outdoor swimming pool – 100m west.

2.2. Regulatory Consultation

The London Borough of Camden and the Environment Agency (EA) have both been contacted to perform environmental searches for the site. Reponses are pending.

Requests for information have been made to the following bodies:

- Environment Agency (EA), contacted via email on 07/11/2021 (see Appendix D). Awaiting response.
- Camden Council, contacted via email on 29/10/2021 (see Appendix E). Awaiting response.

2.3. Planning Records

A planning application search has taken place on the Camden Council planning portal in order to identify any relevant documents for the site and surrounding area.

The search indicated that the surrounding areas has undergone a moderate level of redevelopment, however no relevant geo-environmental documents have been identified.

2.4. Unexploded Ordnance

A preliminary unexploded ordnance (UXO) risk assessment has been carried out by 6 Alpha Associates, included in Appendix C. The assessment indicates that Hampstead Metropolitan Borough, the borough that the site was located in during World War II, recorded “moderate” level of bombing.

Air Raid Precaution (ARP) records did not identify any HE bomb strikes on-site. However, five HE bomb strikes were recorded within 130m of the site, the closest being 60m west-north west.

London County Council (LCC) bomb damage mapping documented ‘Blast Damage; Minor in Nature’ to structures on-site and immediately south of the site boundary.

The potential for unexploded WWI and WWII ordnance to exist at the site is addressed as being *Likely.* Given the findings of the preliminary UXO report, it is recommended that future intrusive works are informed by a Detailed UXO Assessment or appropriate precautionary on-site mitigation measures are implemented. Recommended risk mitigation measures included within the assessment include a UXO risk management plan detailing actions to undertake in the event of encountering UXO and a UXO awareness briefing delivered to all personnel conducting intrusive works. For borehole, piles and trenches, intrusive magnetometer surveys at all positions to the maximum bomb penetration depth (up to 15m) is recommended.

Details of risk management strategies are outlined in CIRIA C681.

3. Geological Setting

3.1. Regional Geological Overview

The development site is located within the London Basin, which refers to an approximately triangular synclinal structure in which the sedimentary units underlying London and much of southeast England were deposited. The London Basin is comprised of the following formations, in order of decreasing depth:

- A deep (~200m thick) layer of Chalk, deposited throughout the Upper Cretaceous period, forms the base of the basin and is the principle aquifer of the region.
- The Thanet Beds, which comprise fine, silty glauconitic sands originating in shallow seas.
- The Lambeth Group, a depositionally and geographically complex unit which comprises layers of sands and gravels, shelly and mottled clays, minor limestones and lignites, and occasional sandstone and conglomerate.
- The London Clay Formation, a fine-grained silty clay which is the dominant Thames Group Deposit.
- River Terrace Gravels, deposited by the River Thames and its tributaries on top of the London Clay.

3.2. Site Geology and Anticipated Ground Conditions

Figure 3.1 illustrates the location of the development within the context of a regional geological map. The map illustrates the spatial distribution of superficial (drift) deposits and bedrock outcrops at the ground surface. Made Ground is generally not shown but is assumed to be present on site due to historical demolition and construction works.

The geology map indicates that the site is situated in an area where the London Clay Formation is the uppermost bedrock stratum and there are no natural superficial deposits. The London Clay Formation is underlain by the Lambeth Group over Thanet Sands overlaying Chalk.

Head propensity is present approximately 200m east of the site. Head is poorly sorted and poorly stratified, angular rock and/or clayey hillwash and soil creep, mantling a hillslope and deposited by the slow viscous downflow of waterlogged soil and other unsorted and unsaturated superficial deposits.

Site marked by red circle

Figure 3.1 Geological context of the site

The British Geological Survey (BGS) Geology of Britain web map services provide access to the geographic locations and logs of historical borehole investigations and well installations. Historical boreholes surrounding the site are shown in Figure 3.2. The following historical records have been reviewed as part of this assessment; TQ28SE409, TQ28SE353, TQ28SE733, TQ28SE255, TQ28SE1231 and TQ28SE2056. Table 3.1 summarises the preliminary ground model adopted in this Phase I assessment based on the information reviewed.

Site marked with red circle

Figure 3.2 Locations of BGS boreholes in close proximity to the site boundary

Table 3.1 Preliminary ground model adopted for the Phase I assessmnet

Unit	Elevation[1] (mOD)	Depth[1] (mbgl)	Thickness (m)	Description
Made Ground	46	0.0	0.3 – 2.5	Variable anthropogenic deposits
London Clay	45.7 – 43.5	0.2 – 2.5	>60.0	Stiff grey/brown fissured clay with occasional crystals of selenite.

1. Elevation and depth refer to top of stratum.

3.3. Groundwater and Hydrogeology

The preliminary evaluation of the groundwater regime has been based on data arising from the site setting, general geomorphology and relevant project experience in the area.

The groundwater model is likely to comprise localized perched water within Made Ground overlying the low permeability London Clay Formation. A continuous groundwater table within the London Clay Formation is unlikely to be present. It is considered that the pore water pressure distribution within the London Clay and upper Lambeth Group clays is hydrostatic. It is likely that the lower portion of the Lambeth Group, Thanet Sands and Chalk Formation are underdrained. Due to historical dewatering from the Chalk aquifer at depth, underdrainage effects are frequently observed within the strata at depth within the London Basin.

The Groundwater Vulnerability Map of England and the Environment Agency website have been reviewed to determine the aquifer designations for the underlying geology at the site.

The Head Propensity is classified as an Undifferentiated Secondary Aquifer. Undifferentiated Secondary Aquifers are Secondary Aquifers that cannot be classified into A or B categories due to their variable characteristics. Undifferentiated Secondary Aquifers are of low value.

The London Clay Formation is listed as Unproductive Strata. Unproductive Strata are low permeability strata which are not considered to retain significant quantities of groundwater. If groundwater is present within Unproductive Strata, for example within more permeable lenses or small fissures, it is typically discontinuous, of low value and very low sensitivity.

Water was encountered in one of the local historical BGS boreholes at a depth of 35.98mOD, which is likely a localised perched water table.

Groundwater flow within the London Clay Formation is likely to be limited and does not represent a viable pathway for contamination to migrate onto and away from the site.

The site is located within groundwater Source Protection Zone II (Outer Protection Zone). A Source Protection Zone I (Inner Protection Zone) is located 319m east of the site. The associated abstraction well lies approximately 609m east of the site boundary. A map depicting the source protection zone is given in Figure 3.3. The Source Protection Zone is not associated with the London Clay Formation but the deeper aquifers beneath.

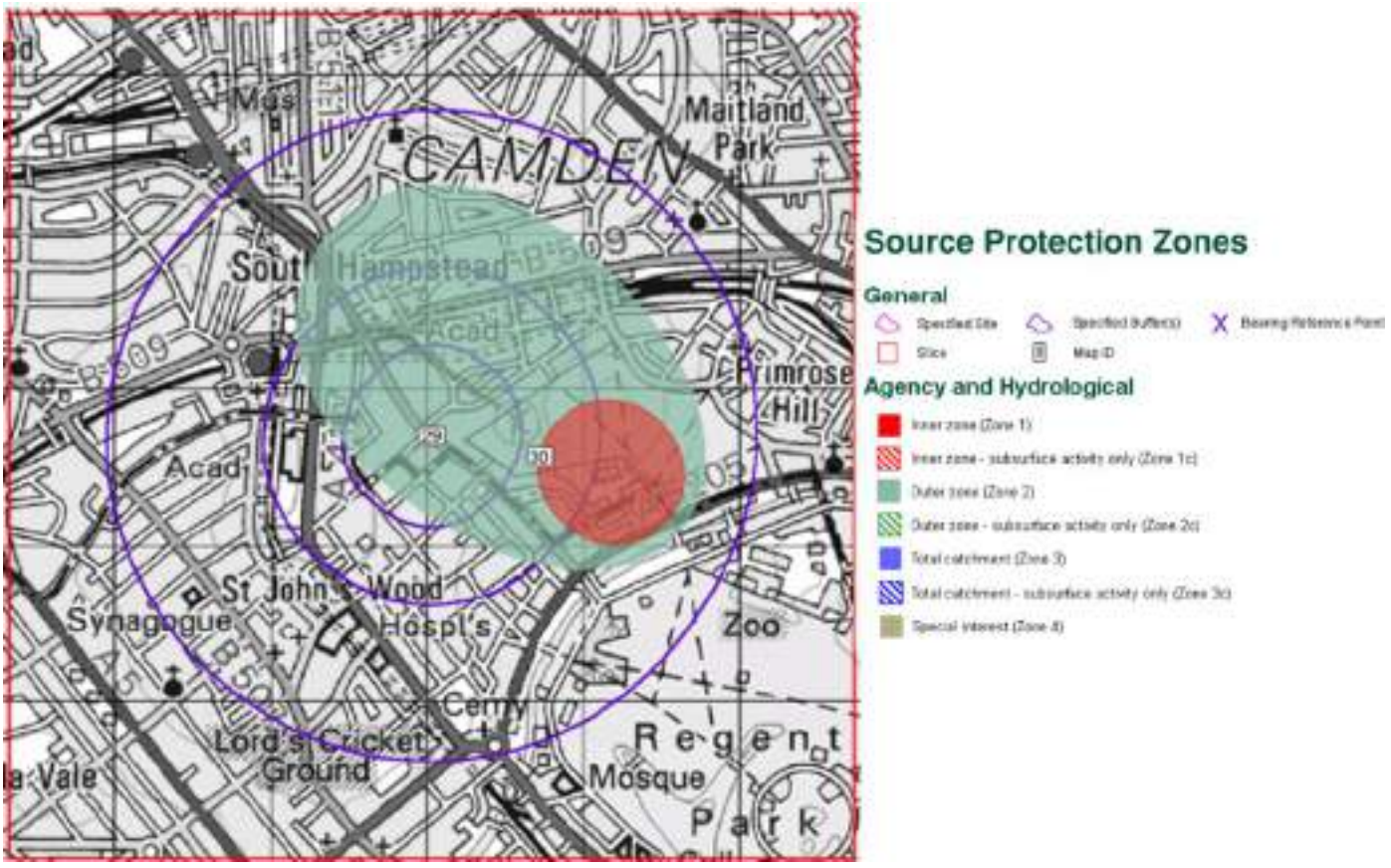

Figure 3.3 Groundwater source protection zone map

There are four groundwater abstractions within 500m of the site. They are all operated by the London Borough of Camden and range from 450 – 462m north west of the site. The abstractions are as follows:

- Municipal Grounds: Spray Irrigation – Direct – 450m NW
- Municipal Grounds: Spray Irrigation – Direct – 462m NW
- Municipal Grounds: General Washing/Process Washing – 462m NW

- Municipal Grounds: Lake and Pond Throughflow – 462m NW

The thickness of the London Clay beneath the site will act as an aquiclude between shallow deposits beneath the site and deeper aquifers at the base of the London Clay Formation.

3.4. Hydrology

The closest surface water feature lies 468m north west of the site boundary. The Lost River Tyburn is located approximately 70m east of the site and the River Thames is located approximately 4.79km south east of the site. Given the site geology, none are considered in hydraulic continuity with groundwater beneath the site.

No recorded surface water abstractions have been identified in the vicinity of the site.

3.5. Geological Hazards

The British Geological Survey and Environment Agency (EA) hazard mapping have identified the following potential geotechnical hazards at the site:

- *Very Low* for collapsible ground stability hazards.
- *No Hazard* for compressible ground stability hazards.
- *No Hazards* for ground dissolution stability hazards.
- *Very Low* for landslide ground stability hazards.
- *Very Low* for running sand ground stability hazards.
- *Moderate* for shrinking or swelling clay ground stability hazards.

3.6. Mining and Mineral Extraction

The site is not listed within the Envirocheck Report as within an area affected by coal mining.

There are no BGS Mineral Site entries listed within the Envirocheck Report within 500m of the site.

No record of mining instability or man-made mining cavities are recorded within 500m.

3.7. Radon

The Envirocheck Report indicates that the site is within a Lower Probability Radon Area (with less than 1% of homes estimated to be at or above the Action Level). *BRE 211: Radon – Guidance on Protective Measures for New Buildings (2015)* indicates that without a site-specific Radon Risk Report the maximum requirement for radon protection is 'None'. On this basis, no further radon assessment is required and it can be considered that no radon protection is required for incorporation into the proposed building fabric.

4. Site History

Detailed historical maps, fire insurance plans and aerial photographs of the site and surrounding area dated between 1871 and 2021 (at scales of 1:500, 1:2,500 and 1:10,000), provided as part of the Envirocheck Report (Appendix B) for the site, have been reviewed as part of the study. This process has been undertaken to identify any former land uses at the site and within the surrounding area that may have geo-environmental implications for the proposed redevelopment.

The findings are summarised in Table 4.1. Only features considered to have a potential geo-environmental impact on the site and usually within a notional 250m radius of the site boundaries are presented and discussed, with the exception of any potentially infilled land which is identified within 500m of the site. Any distances quoted for features remote from the site have been scaled from the maps and are approximate. Other information sources available in the public domain have also been reviewed to support this assessment.

Table 4.1 History of the site and surounding areas

Historical Feature	Distance and Bearing from Site	Date of First Appearance	Date of Last Appearance	Potential to Impact the Site
	On-Site			
Site is split into two properties with gardens and two buildings towards the south.	Entire site footprint	1871	1958	Yes
Extension to westernmost building.	North western area of site	1894	1896	Yes
Small structure appears at the north eastern corner of the site.	North eastern corner	1915	1954	Yes
Further extension of westernmost building.	North western area of site	1915	1960	Yes
Demolition of both buildings and construction of a large building to the north side, with its extent to the north west boundary corner.	Northern side of site	1960	1976	Yes
Demolition of the north western extent of the structure, with an L shaped building remaining.	Northern side of site	1991	2021	Yes
	Off-Site			
Western neighbouring property is demolished for Elsworthy Road.	Western boundary	1915	2021	Yes
Construction of residential properties north of the site.	Northern boundary	1915	2021	Yes
Primrose Hill	75m E	1915	2021	No (unlikely source of contamination)
Potentially infilled land	110m E	1896	1896	No (no hydrogeological pathway or ground gas

Historical Feature	Distance and Bearing from Site	Date of First Appearance	Date of Last Appearance	Potential to Impact the Site
				pathway through the London Clay Formation)
Air shaft	235m NE	1986	1991	No (no hydrogeological pathway)
Electrical sub station	180m NE	1991	1991	No (no hydrogeological pathway)
School	160m NW	1968	1968	No (unlikely source of contamination)

5. Environmental Setting

5.1. Regulatory Data

Regulatory data from the Envirocheck Report in close proximity to the development site (generally within 250m of the site boundary, with the exception of landfill and infilled ground which is identified within 500m of the site) has been summarised in Table 5.1. The information provided for each item in Table 5.1 has been summarized from the Envirocheck Report for risk assessment purposes. For a full breakdown of the regulatory data refer to the Envirocheck Report in Appendix B.

Table 5.1 Summary of regulatory data

Item	Distance and Bearing from Site	Information	Potential to Impact the Site
Agency & Hydrogeological			
No relevant records			
Waste and Landfill			
No relevant records			
Facilities Registered as using Hazardous Substances			
No relevant records			
Industrial Land Uses and Points of Interest *(potential sources of soil vapour are identified within 50 m of the site, and more distant potential sources of contamination are not identified due to the likely absence of significant groundwater flow within the London Clay Formation precluding a pathway to site)*			
Points of Interest *Records on site*: 0 *Records within 0-250m*: 1	245m NE	**Name:** Air Shaft **Type:** Manufacturing and Production **Category:** Extractive Industries	No (no pathway to site given the geology)

5.2. Flood Risk

The site is classified as having a low risk of groundwater flooding at surface level (1000-year return).

Flood Maps for Planning (ref. https://flood-map-for-planning.service.gov.uk/, accessed 29th October 2021) indicates that the site is located within flood zone 1.

No further consideration of flood risk is given in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

5.3. Ecology, Flora and Fauna

No records of potentially sensitive ecological receptors as defined by the *Environmental Protection Act (1990) Part 2a (as amended)* have been identified.

An assessment of potential invasive species is not included in this report.

6. Proposed Development

The site currently houses a two-storey L-shaped residential building with a large, open garden and a swimming pool to the south of the house. The scheme comprises the demolition of the current structure on-site, excavation of a 9.175m single level basement and lower ground floor and construction of 12 housing units over three separate blocks. Each unit will have a private garden to the rear and a communal garden space to the front. A section view is presented in Figure 6.1 and the proposed ground floor plan is shown in Figure 6.2.

The basement will be used as a health and wellness centre with plant space above. The scheme also comprises 62 boreholes over the extent of the site including the basement to power ground source heat pumps for heating and cooling of the whole complex.

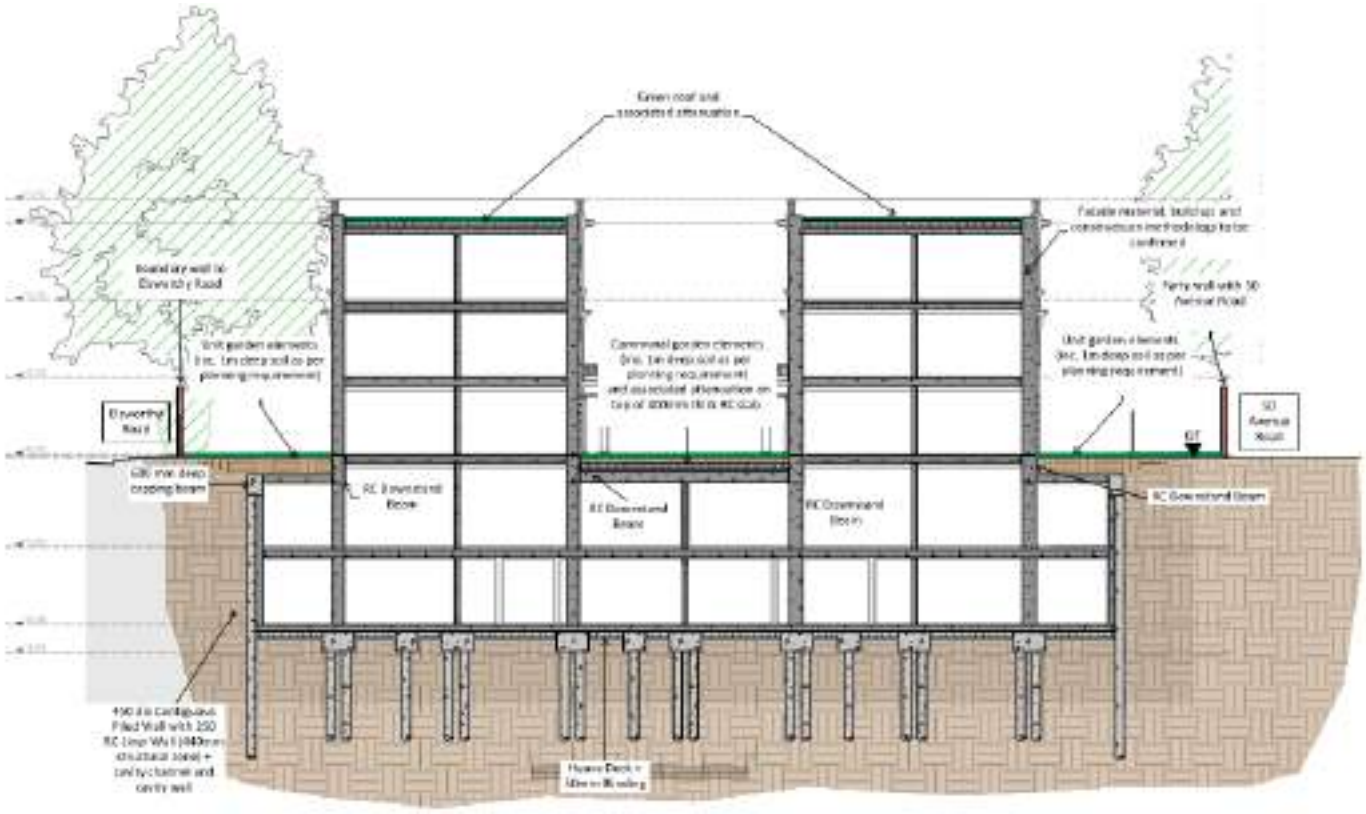

Figure 6.1 Proposed site elevations

Figure 6.2 Proposed ground floor plan

At present, there are two basement foundation options being considered: a piled raft which will maximise the basement space, and a standalone raft which will minimise the construction programme. These two options are shown in Figure 6.3 and Figure 6.4.

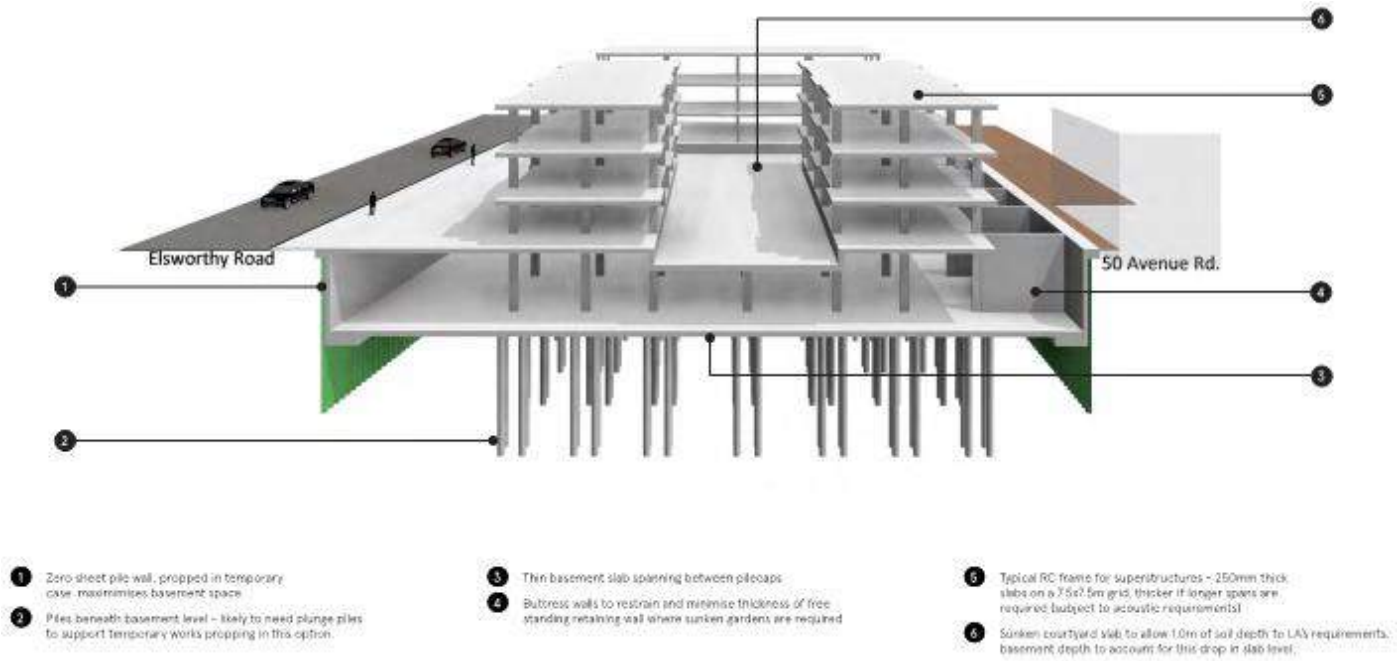

Figure 6.3 Option 1: piled raft to maximise basement space

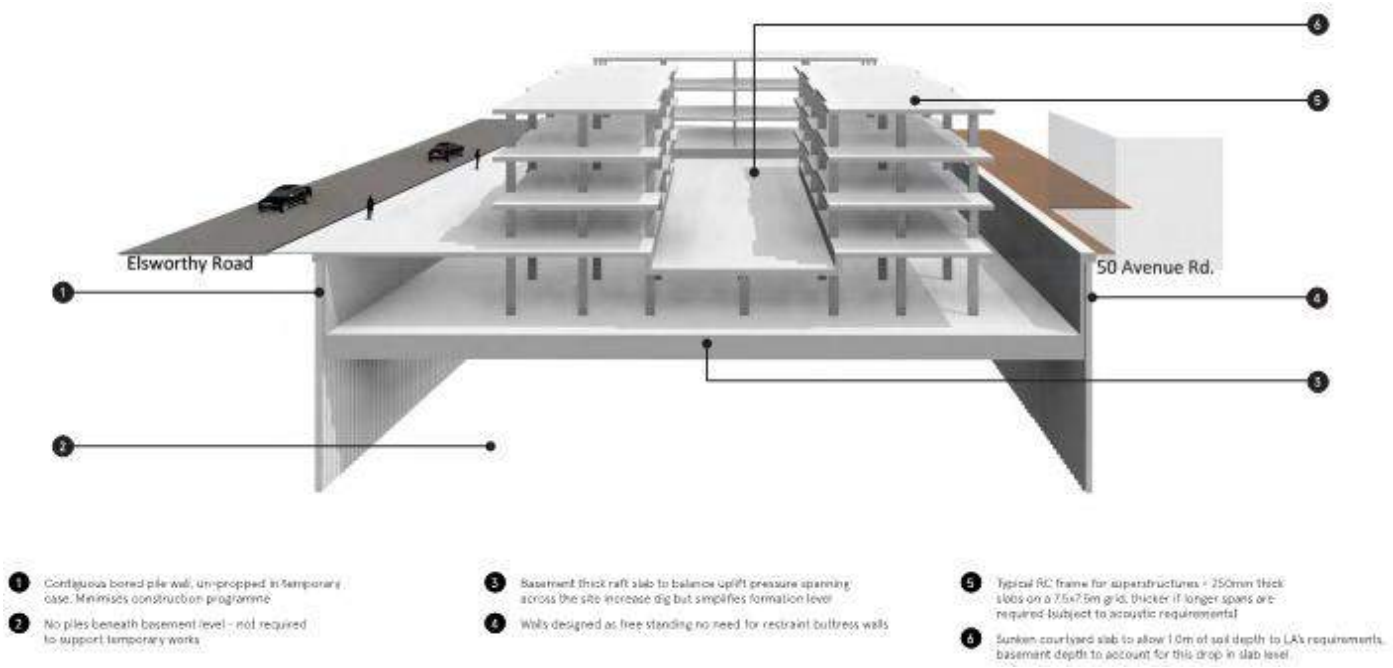

Figure 6.4 Option 2: raft to minimuse construction programme

7. Conceptual Site Model (CSM) and Preliminary Risk Assessment (PRA)

A means to qualitatively assess the risk posed by potential land contamination to a proposed development is to prepare an initial CSM and carry out a PRA. An initial CSM represents the characteristics of the site which influence the possible relationships between identified potential contaminant sources, pathways and receptors. A PRA is undertaken for each potentially complete source-pathway-receptor linkage (potential contaminant linkage). The PRA assessment matrix used in this report is included as Appendix A. The risk assessment approach is in accordance with the principals set-out in the *Land Contamination Risk Management (LCRM)* guidance, published by the Environment Agency on the UK Government website.

An initial CSM and PRA for the proposed development is set-out below in consideration of all the information detailed in the earlier sections of this report. Should changes be made to the proposed development then the assessments presented herein must be updated.

7.1. Potential Contaminants of Concern

The potential contamination sources identified as part of this assessment are summarised in this section. Off-site potential sources of contamination are identified and considered further where a potential source of soil vapour is located within 50m of the site, a potential source of contamination is located within 250m of the site and the anticipated groundwater flow direction towards the south-east indicates a pathway to the site may be present, or where there is a potential ground gas source within 500m of the site.

Current and former residential land-uses, retail units, offices and other general commercial uses (non-industrial) are not considered potential sources of contamination unless stated otherwise.

Naturally occurring radon risks are discussed in Section 3.

Please be aware that the nature of historical records mean that every potential source of contamination may not be detailed in the available documents. Therefore, there is potential for additional sources of contamination be present.

7.1.1. On-Site Sources

- Made Ground due to former demolition and construction (anticipated to be localised and include fills and subbases associated with the current building rather than substantial reconstituted ground) – heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate and ground gases.
- Current and former residential use – heavy metals and metalloids, acids / alkalis, PAHs, TPH (inc. BTEX) and asbestos.

Asbestos containing materials (ACMs) in the current building fabric is considered below separate to Table 7.1.

7.1.2. Off-Site Sources

- Demolition of former neighbouring property to the west - heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate and ground gases.
- Construction of residential properties immediately north - heavy metals and metalloids, acids / alkalis, PAHs, asbestos, elevated sulphate and ground gases.

Exclusion of other identified potential off-site sources of contamination has been justified in earlier sections of this Desk Study, and principally due to the ground conditions including that the London Clay Formation (with no natural superficial cover) will not enable notable transmission of groundwater, ground gas or soil vapour.

Notes:

TPH – total petroleum hydrocarbons.

PAH – polycyclic aromatic hydrocarbons.

BTEX – benzene, toluene, ethylbenzene, xylenes.

Asbestos – potential free fibres, debris and / or fragments of asbestos containing material (ACM).
Ground gas – methane and carbon dioxide (excludes soil vapour).

7.2. Potential Pathways

The potential pathways identified as part of this assessment include:

7.2.1. On-Site Human Health

- Dermal contact or ingestion of soils at the site.
- Inhalation of ground gas, soil vapour or soils at the site.
- Consumption of water from impacted water supply pipes installed as part of the proposed redevelopment.

7.2.2. Off-Site Human Health

- Inhalation of wind-blown soil derived from the site.
- Migration off-site at shallow depth via preferential pathways and / or shallow perched groundwater followed by direct contact / inhalation / ingestion of contaminated soils.
- Off-site migration of ground gas or soil vapour followed by accumulation and inhalation within neighbouring properties.
- Migration off-site at shallow depth via preferential pathways and / or shallow perched groundwater followed by impact to water supply pipes and ingestion.

7.2.3. On-Site Buildings and Below Ground Structures

- Direct contact of 'aggressive' ground and / or grossly impacted soils with building structures / foundations.
- Accumulation of ground gas or soil vapour within buildings followed by ignition.

7.2.4. Off-Site Buildings and Below Ground Structures

- Migration off-site via preferential pathways, shallow groundwater and / or shallow perched groundwater followed by direct contact with building structures / foundations.
- Off-site migration of ground gas or soil vapour followed by accumulation within buildings and ignition.

7.2.5. Controlled Waters

- Leaching from the unsaturated zone.
- Perched water percolation and / or lateral migration.
- Migration via advection and diffusion in the saturated zone.
- Vertical and lateral migration of free-phase product in the unsaturated and saturated zones.
- Preferential pathways created by borehole construction or piling.

7.2.6. Sensitive Ecology, Flora and Fauna

No sensitive ecology, flora or fauna have been identified in the context of the Environmental Protection Act (1990) Part 2a (as amended).

7.3. Potential Receptors

The potential receptors identified as part of this assessment include:

- Human health of proposed site end users (residential including garden use).
- Human health of off-site residential end users (closest adjacent east – 50 Avenue Road) including open garden space immediately east and north of the site.

- Property including on-site (proposed) and off-site buildings and below ground structures (buried concrete and underground services).
- Controlled waters (groundwater) - Secondary A Aquifer associated with the Lambeth Group and Thanet Sand at the base of the London Clay Formation.

The London Clay Formation beneath the site does not represent a viable pathway to the identified surface waters. Therefore, surface waters are not considered a potential receptor.

The London Clay Formation is classified as Unproductive Strata so is not considered a relevant groundwater receptor. However, the proposed development may include piles and boreholes as part of a heating and cooling system. The termination depth for the boreholes and piles is not yet confirmed and they may penetrate the base of the London Clay Formation with the potential for preferential pathways to the created to deeper aquifers. Without these potential penetrative activities, the London Clay is considered to act as an aquiclude between shallow soils and deeper aquifers at the base of the London Clay Formation.

Risks to site workers and the environment during the construction phase of the proposed redevelopment can be appropriately managed by successful implementation of construction phase risk assessments and method statements (RAMS). The associated construction phase risks from potential contamination are not considered further in this document but should be appropriately considered and mitigated by the Principal Contractor in their preparation and implementation of construction phase RAMS and Construction Phase Plan (CPP).

7.4. Summary of Potential Contaminant Linkages

The information presented in this assessment has been compiled to produce a summary of the identified potential contaminant linkages, based on the initial CSM presented herein. Table 7.1 presents a PRA for the proposed redevelopment based on the identified potential contaminant linkages. This assessment has been performed considering the details of the proposed development presented in this report. Qualitative risk classifications are provided in accordance with *CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001)* (see summary in Appendix A). Where no potentially complete contaminant linkage is identified then no risk classification is provided.

Table 7.1 Preliminary Risk Assessment (PRA)

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
On-site See Section 7.1.1	Direct contact with soil	Human health of proposed site end users (see Section 7.3)	Yes (residential site history but areas of open ground are proposed in garden areas)	Low
	Inhalation of windblown soil			Low
	Ingestion of soil			Low
	Impact to water supply pipes followed by ingestion of contaminated water supply		Yes (pipes may be laid in soils impacted by potential contamination, although it is unlikely that notable contamination is present on-site) (standard construction water supply pipe likely suitable)	Very low

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
	Ground gas / soil vapour generation and inhalation		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground	Very low
	Inhalation of windblown soil from the site	Off-site human health (see Section 7.3)	Yes (the proposed development includes garden, although the potential for liberation of notable wind-blown dust is low)	Very low
	Off-site migration and direct contact with impacted soil		Yes (residential site history indicates that it is unlikely contamination is present with the potential to migrate off-site)	Very low
	Off-site migration and ingestion of impacted soil			Very low
	Impact to water supply pipes followed by ingestion of contaminated water supply			Very low
	Ground gas / soil vapour generation, off-site migration and inhalation		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground	Very low
	Direct contact	On-site below ground structures (proposed)	Yes (structures may be constructed soil impacted by sulphates associated with the London Clay and potential Made Ground)	Low to moderate
	Migration followed by ignition of ground gas / soil vapour		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground	Very low

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
	Off-site migration followed by direct contact	Off-site below ground structures	Yes (it is unlikely that significant contamination with the potential to migrate off-site and damage nearby buildings is present)	Very low
	Off-site migration followed by migration followed by ignition of ground gas / soil vapour		Yes (Made Ground anticipated to be localised and include fills and subbases rather (an unlikely ground gas source) rather than substantial reconstituted ground	Very low
	Leaching and migration to groundwater via the unsaturated zone; Perched water percolation or lateral migration; Migration via advection and diffusion in the saturated zone; Vertical and lateral migration of free-phase product in the unsaturated and saturated zones; and Preferential pathways created via piling or borehole construction.	Controlled waters (groundwater)	Yes (it is unlikely that on-site contamination is present with the potential to impact aquifers beneath the London Clay Formation, even in consideration of potential piling and borehole construction) (this PRA indicates that the risk is sufficiently low such that further risk assessment of piling and borehole activities – e.g. Foundation Works Risk Assessment – is not required)	Very low
Off-site See Section 7.1.2	On-site migration followed by direct contact or ingestion of soil	Human health of proposed site end users (see Section 7.3)	Yes (the identified sources indicate that on-site migration is unlikely)	Very low
	Inhalation of windblown soil from off-site		Yes (the surrounding area is predominantly open gardens so there is a potential for windblown soil, however contamination is unlikely)	Very low
	On-site migration followed by impact to water supply pipes and ingestion of the water supply		Yes (pipes may be laid in soils impacted by potential off-site sources, although the	Very low

Potential Contaminant Source	Potential Pathway	Potential Receptor	Potential Contaminant Linkage	Risk Level Classification
			identified sources indicate contamination is unlikely)	
	Ground gas / soil vapour generation, on-site migration and inhalation	On-site below ground structures (proposed)	Yes (it is unlikely that the identified off-site sources will generate notable ground gas/soil vapour and the London Clay Formation will limit migration potential)	Very low
	On-site migration followed by direct contact		Yes (it is unlikely that contamination is migrating on-site with the potential to damage the proposed structures)	Very low
	On-site migration followed by ignition of ground gas / soil vapour		Yes (it is unlikely that the identified off-site sources will generate notable ground gas/soil vapour and the London Clay Formation will limit migration potential)	Very low

The PRA has identified potential contaminant linkages with generally a 'very low' risk classification. This is principally due to the residential history of the site with no current or former commercial / industrial activities identified at the site or in the near vicinity. However, a 'low to moderate' risk classification has been identified for potential sulphate attack of below-ground concrete structures to be incorporated into the proposed development, and 'low' risk has been identified for proposed site residents due to potential direct contact, ingestion and / or inhalation of soil in areas of open ground / garden which are potentially impacted by on-site sources of contamination.

Based on the results of the PRA, it is considered that in accordance with *LCRM* guidance there are no unacceptable risks to off-site human health, controlled waters, off-site property or sensitive ecology.

Unacceptable risks (ref. *LCRM* guidance) have been identified with respect to on-site property i.e. specifically new below-ground concrete structures / foundations to be installed. Therefore, it is recommended that further assessments are made regarding the potential for sulphate attack of below-ground concrete to be incorporated into the proposed development. A sulphate design class should be specified based on appropriate geotechnical ground investigation and assessment.

Unacceptable risks (ref. *LCRM* guidance) have been identified with respect to on-site human health due to the potential for direct contact, ingestion and / or inhalation of soil in proposed open ground and garden areas. No unacceptable risks have been identified with respect to ground gas / soil vapour. Therefore, it is recommended that further appropriately targeted ground investigation is undertaken for geo-environmental purposes to enable a refinement of the CSM and geo-environmental assessments specifically for the unacceptable risks to on-site human health. The next stage of geo-environmental assessment should include a generic quantitative risk assessment (GQRA) for human health purposes, informed by shallow ground investigation including geo-environmental sampling (and appropriate laboratory testing) of Made Ground if encountered at the site. The recommended ground investigation and

assessments should be undertaken and presented in a 'Phase II' type geo-environmental interpretive report in accordance with *BS10175:2011 Investigation of Potentially Contaminated Sites – Code of Practice* and *LCRM* guidance.

The PRA indicates that the risk to controlled waters (groundwater) is sufficiently low such that further risk assessment of piling and borehole activities – e.g. Foundation Works Risk Assessment – is not required.

The risk represented by potential ACMs in the building fabric can be addressed by commissioning an asbestos Demolition and Refurbishment Survey for the relevant areas of the current building to be demolished and / or renovated as part of the proposed works. If ACMs are identified then their onward management should be informed by an asbestos specialist, but it is considered that appropriate ACM removal will be required prior to any phases of demolition.

8. Closing Remarks

A-squared Studio Engineers Ltd was appointed by Heyne Tillett Steel Ltd to prepare a Phase I desk study for the proposed development at 52 Avenue Road, London. The desk study provides an initial Conceptual Site Model (CSM) and qualitative Preliminary Risk Assessment (PRA) for the proposed development in accordance with the principals set out in *Land Contamination Risk Management* (LCRM) guidance, published by the Environment Agency on the UK Government website. The desk study has also been prepared in the context of the *National Planning Policy Framework* (NPPF) and *The Building Regulations 2010, Approved Document C - Site preparation and resistance to contaminants and moisture (2004 Edition incorporating 2010 and 2013 amendments)*.

The site currently includes a two-storey, L-shaped residential building with a large, open garden and a swimming pool to the south of the house. The scheme comprises the demolition of the current structure on-site, excavation of a 9.175m-deep basement and lower ground floor and construction of 12 housing units over three separate blocks. Each unit will have a private garden to the rear and a communal garden space to the front.

The ground conditions at the site indicate the presence of Made Ground/topsoil which overlies the London Clay Formation.

A *Likely* UXO hazard rating was identified for the project site from a preliminary UXO desk study included within the Envirocheck report. It is recommended that a detailed UXO threat and risk assessment be performed to assess the risk in more detail. If the detailed risk assessment identifies that mitigation measures are required during future site works, a UXO specialist should be engaged to assess the site and provide recommendations on appropriate mitigation measures and strategies.

Unacceptable risks (ref. *LCRM* guidance) have been identified with respect to on-site property i.e. specifically new below-ground concrete structures / foundations to be installed. Therefore, it is recommended that further assessments are made regarding the potential for sulphate attack of below-ground concrete to be incorporated into the proposed development. A sulphate design class should be specified based on appropriate geotechnical ground investigation and assessment.

Unacceptable risks (ref. *LCRM* guidance) have been identified with respect to on-site human health due to the potential for direct contact, ingestion and / or inhalation of soil in proposed open ground and garden areas. No unacceptable risks have been identified with respect to ground gas / soil vapour. Therefore, it is recommended that further appropriately targeted ground investigation is undertaken for geo-environmental purposes to enable a refinement of the CSM and geo-environmental assessments specifically for the unacceptable risks to on-site human health. The next stage of geo-environmental assessment should include a generic quantitative risk assessment (GQRA) for human health purposes, informed by shallow ground investigation including geo-environmental sampling (and appropriate laboratory testing) of Made Ground if encountered at the site. The recommended ground investigation and assessments should be undertaken and presented in a 'Phase II' type geo-environmental interpretive report in accordance with *BS10175:2011 Investigation of Potentially Contaminated Sites – Code of Practice* and *LCRM* guidance.

The risk represented by potential ACMs in the building fabric can be addressed by commissioning an asbestos Demolition and Refurbishment Survey for the relevant areas of the current building to be demolished and / or renovated as part of the proposed works. If ACMs are identified then their onward management should be informed by an asbestos specialist, but it is considered that appropriate ACM removal will be required prior to any phases of demolition.

Risks to site workers and the environment during the construction phase of the proposed redevelopment can be appropriately managed by successful implementation of construction phase risk assessments and method statements (RAMS). The associated construction phase risks from potential contamination should be appropriately considered and mitigated by the Principal Contractor in their preparation and implementation of construction phase RAMS and Construction Phase Plan (CPP).

The risks to maintenance workers during the operational phase of the proposed development can be managed by preparing a site operational Health & Safety File. This desk study should be made available to those preparing the Health & Safety File.

The final specification for newly installed water supply pipes should be based on the risk assessments and recommendations presented herein and also agreed with the utility provider.

The PRA indicates that the risk to controlled waters (groundwater) is sufficiently low such that further risk assessment of piling and borehole activities – e.g. Foundation Works Risk Assessment – is not required.

Should any changes be made to the proposed development compared to the details presented herein, or should any new information become available, then the assessments included in this desk study must be updated.

Appendix A: Qualitative Risk Assessment Matrix

A-squared qualitative risk assessment for geo-environmental purposes is undertaken in accordance with *CIRIA C552: Contaminated Land Risk Assessment, A Guide to Good Practice (Rudland et al., 2001)*. The CIRIA C552 risk categories and the assessment methodology are summarised below in Table B.1, Table B.2 and Table B.3. Potential magnitude and potential likelihood are both classified to enable a risk rating to be assessed.

Potential magnitude takes into account the potential consequences should a complete source–pathway–receptor linkage be present. Potential magnitude is classified as per Table B.1.

Table B.1 Definition of potential magnitude of consequence

Category	Definition
Severe	Acute risks to human health, catastrophic damage to buildings / property, major pollution to controlled waters.
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species, significant damage to buildings or structures.
Mild	Pollution of non-sensitive waters, minor damage to buildings or structures.
Minor	Damage to non-sensitive ecosystems or species.

Potential likelihood takes into account the presence of the hazard and receptor as well as the integrity of the pathway for exposure, i.e., whether a source-pathway-receptor linkage is present or not. Potential likelihood is classified as per Table B.2.

Table B.2 Definition of potential likelihood of exposure

Category	Definition
High Likelihood	Pollutant linkage may be present and is almost certain to occur in the long-term. Or there is evidence of harm to the receptor.
Likely	Pollutant linkage may be present, and it is probable that it will occur over the long-term.
Low Likelihood	Pollutant linkage may be present, and there is a possibility that it will occur, although there is no certainty that it will do so.
Unlikely	Pollutant linkage may be present, but it is improbable that it will occur.

The potential magnitude of consequence and the potential likelihood of exposure are assessed in accordance with the risk matrix presented in Table B.3.

Table B.3 Geo-environmental risk assessment matrix

		Potential Magnitude of Consequence			
		Severe	Medium	Mild	Minor
Potential Likelihood of Exposure	High Likelihood	Very High	High	Moderate	Low to Moderate
	Likely	High	Moderate	Low to Moderate	Low
	Low Likelihood	Moderate	Low to Moderate	Low	Very Low
	Unlikely	Low to Moderate	Low	Very Low	Very Low

Appendix B: Envirocheck Report

Envirocheck®
LANDMARK INFORMATION GROUP®

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
286852753_1_1

Customer Reference:
1942

National Grid Reference:
527010, 183850

Slice:
A

Site Area (Ha):
0.28

Search Buffer (m):
1000

Site Details:

52, Avenue Road
LONDON
NW8 6HP

Client Details:

Mr A Fasano
A-squared Studio
66 Church Road
Richmond
TW10 6LN

Envirocheck®
LANDMARK INFORMATION GROUP®

Contents

Introduction

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

Report Version v53.0

Envirocheck®
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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility					n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				2
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1			3	16
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4			Yes	
Pollution Incidents to Controlled Waters	pg 4				3
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances	pg 4				7
River Quality	pg 5				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register					
Water Abstractions	pg 6			4	6 (*22)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 14	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 14	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones	pg 14	1		1	
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 14		1		1

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 16				1
Local Authority Landfill Coverage		1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 16				1
Potentially Infilled Land (Water)					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 17	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry					
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 17		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 20	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 20	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 20	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 21			20	161
Fuel Station Entries	pg 36				4
Points of Interest - Commercial Services	pg 36			4	40
Points of Interest - Education and Health	pg 40				8
Points of Interest - Manufacturing and Production	pg 40		1		12
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Gas Pipelines					
Underground Electrical Cables	pg 46		6	6	34

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
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Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves	pg 52				2
Marine Nature Reserves					
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National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: Thames Water Utilities Ltd Property Type: WTW/WATER COLLECTION/TREATMENT/SUPPLY Location: Barrow Hill Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Temp.0018 Permit Version: 1 Effective Date: 15th September 1989 Issued Date: 15th September 1989 Revocation Date: 5th October 2000 Discharge Type: Trade Effluent Discharge Environment: Freshwater Stream/River Receiving Water: River Thames **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	610	2	527600 183600
2	**Discharge Consents** Operator: Marylebone Cricket Club Property Type: SPORT, AMUSEMENT+RECREATION/GOLF CLUB/GYM/THEME PK/SPA Location: Marylebone Cricket Club Lord'S Cricket Ground Marylebone Cricket Club St John'S Wood London Nw8 8qn Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprkb3091es Permit Version: 2 Effective Date: 26th March 2021 Issued Date: 26th March 2021 Revocation Date: Not Supplied Discharge Type: Trade Discharge - Process Water Discharge Environment: Land/Soakaway Receiving Water: Groundwater **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A3NW (S)	991	2	526996 182820
3	**Local Authority Pollution Prevention and Controls** Name: Ivy Dry Cleaner Location: 4 Queens Terrace, London, Nw8 6dx Authority: Westminster City Council, Environmental Health Department Permit Reference: 06/40583/EE1EP Dated: 14th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A12SE (SW)	426	3	526672 183539
4	**Local Authority Pollution Prevention and Controls** Name: Kings Dry Cleaners Location: 25 Winchester Road, London, E4 Authority: London Borough of Waltham Forest, Environmental Health Department Permit Reference: DC05 Dated: 6th July 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A18SW (NW)	471	4	526812 184310
5	**Local Authority Pollution Prevention and Controls** Name: St John'S Wood Dry Cleaners Location: 47 Charlbert Street, London, NW8 6JN Authority: Westminster City Council, Environmental Health Department Permit Reference: 09/53345/EE1EP Dated: 10th November 2009 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	495	3	527114 183327
6	**Local Authority Pollution Prevention and Controls** Name: Swiss Cottage Dry Cleaners Location: 121 Finchley Road, London, Nw3 6hy Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC10 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A17SE (NW)	551	5	526626 184270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Local Authority Pollution Prevention and Controls** Name: Johnsons Cleaners Location: 69 St Johns Wood High Street, London, Nw8 7nl Authority: Westminster City Council, Environmental Health Department Permit Reference: 06/40583/EE1EP Dated: 7th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Site Closed** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	586	3	526938 183230
7	**Local Authority Pollution Prevention and Controls** Name: Madame George Location: 9 Circus Road, London, Nw8 6nx Authority: Westminster City Council, Environmental Health Department Permit Reference: 06/39117/EE1EP Dated: 7th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	594	3	526902 183227
8	**Local Authority Pollution Prevention and Controls** Name: Tempo Dry Cleaners Location: 98 St Johns Wood High Street, London, Nw8 7sh Authority: Westminster City Council, Environmental Health Department Permit Reference: 06/38279/EE1EP Dated: 7th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Site Closed** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	627	3	527019 183184
9	**Local Authority Pollution Prevention and Controls** Name: Masterclean Dry Cleaners Location: 6 Langtry Walk, London, Nw8 0du Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC38 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12NE (W)	647	5	526352 184004
10	**Local Authority Pollution Prevention and Controls** Name: Elias Dry Cleaners Location: 68 St Johns Wood High Street, London, Nw8 7sh Authority: Westminster City Council, Environmental Health Department Permit Reference: 08/15232/EE1EP Dated: 6th March 2008 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	704	3	527077 183110
11	**Local Authority Pollution Prevention and Controls** Name: Bp Filling Station Location: 21-41 Wellington Road, St John's Wood, LONDON, NW8 9SP Authority: Westminster City Council, Environmental Health Department Permit Reference: VR 8 Dated: 7th May 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	746	3	526864 183080
12	**Local Authority Pollution Prevention and Controls** Name: Connoisseur Dry Cleaners Location: 3-5 Fairhazel Gardens, London, Nw6 3qe Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC11 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12NW (W)	769	5	526262 184119

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**Local Authority Pollution Prevention and Controls** Name: Sqweaky Clean Professional Dry Cleaners Location: 13 Fairhazel Gardens, London, Nw6 3qe Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC37 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12NW (W)	797	5	526237 184134
13	**Local Authority Pollution Prevention and Controls** Name: Abbey Dry Cleaners Location: 11 Blenheim Terrace, London, Nw8 0eh Authority: Westminster City Council, Environmental Health Department Permit Reference: 07/71922/EE1EP Dated: 25th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Site Closed** Positional Accuracy: Manually positioned to the address or location	A7NW (SW)	828	3	526303 183355
14	**Local Authority Pollution Prevention and Controls** Name: Chequers Textile Care Ltd Location: 48 Englands Lane, London, Nw3 4ue Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC47 Dated: 5th December 2006 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	838	5	527498 184580
15	**Local Authority Pollution Prevention and Controls** Name: B P Harmony Location: 104a Finchley Road, London, NW3 5EY Authority: London Borough of Camden, Pollution Projects Team Permit Reference: Not Given Dated: 1st July 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	865	5	526471 184554
15	**Local Authority Pollution Prevention and Controls** Name: Bp Harmony Location: 104a Finchley Road, LONDON, NW3 5EY Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC18 Dated: 1st July 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	865	5	526471 184554
16	**Local Authority Pollution Prevention and Controls** Name: Siciliana Location: 6 Blenheim Terrace, London, Nw8 0eb Authority: Westminster City Council, Environmental Health Department Permit Reference: 06/48997/EE1EP Dated: 25th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A7NW (SW)	895	3	526198 183395
17	**Local Authority Pollution Prevention and Controls** Name: Primrose Valet Location: 91 Regent'S Park Road, London, Nw1 8ur Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC53 Dated: 28th January 2009 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A14NE (E)	914	5	527917 184155

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Local Authority Pollution Prevention and Controls** Name: Perfect Dry Cleaners Location: 55 Abbey Road, London, NW8 0AD Authority: Westminster City Council, Environmental Health Department Permit Reference: 09/74394/EE1EP Dated: 23rd March 2010 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A12SW (W)	943	3	526069 183582
	Nearest Surface Water Feature	A18SW (NW)	468	-	526776 184286
19	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: LONDON, NW8 Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 2nd February 1996 Incident Reference: SE960054 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	647	2	526800 183200
20	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: LONDON, NW8 Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Natural Note: Not Supplied Incident Date: 10th September 1996 Incident Reference: SE960481 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (SE)	676	2	527300 183200
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Hampstead Road Lock, CAMDEN TOWN Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 17th December 1998 Incident Reference: THNE1998041401 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14NE (E)	959	2	528000 184000
22	**Registered Radioactive Substances** Name: Wellington Hospital Location: 8a Wellington Place, LONDON, NW8 9LE Authority: Environment Agency, Thames Region Permit Reference: Bw7716 Dated: 1st December 2003 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA **Status:** **Application has been authorised and any conditions apply to the operator** Positional Accuracy: Automatically positioned to the address	A8SW (S)	712	2	526814 183127
22	**Registered Radioactive Substances** Name: Wellington Hospital Location: 8a Wellington Place, LONDON, NW8 9LE Authority: Environment Agency, Thames Region Permit Reference: Br5558 Dated: 28th March 2002 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status:** **Application has been authorised and any conditions apply to the operator** Positional Accuracy: Automatically positioned to the address	A8SW (S)	712	2	526814 183127

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Registered Radioactive Substances** Name: Wellington Hospital Location: 8a Wellington Place, LONDON, NW8 9LE Authority: Environment Agency, Thames Region Permit Reference: Br5531 Dated: 28th March 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variation** Positional Accuracy: Automatically positioned to the address	A8SW (S)	712	2	526814 183127
22	**Registered Radioactive Substances** Name: Humana Hospital Wellington Location: 27 Circus Road, LONDON, Greater London, NW8 9JG Authority: Environment Agency, Thames Region Permit Reference: AB8520 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA in respect of a registration under S7 when Technetium 99M is used being =< 10 gigabecquerels **Status: Authorisation either revoked or cancelled** Positional Accuracy: Unknown	A8SW (S)	712	2	526794 183133
23	**Registered Radioactive Substances** Name: Wynn Institute For Metabolic Research Location: Flat 21, Cavendish House, 21 Wellington Road, LONDON, Greater London, NW8 9SQ Authority: Environment Agency, Thames Region Permit Reference: AC0591 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelled** Positional Accuracy: Automatically positioned to the address	A8SW (S)	794	2	526898 183025
24	**Registered Radioactive Substances** Name: Hca International Limited Location: The Wellington Hospital, Wellington Place, St Johns Wood, Nw8 9le Authority: Environment Agency, Thames Region Permit Reference: ZB3233DA Dated: Not Supplied Process Type: Not Supplied Description: Not Supplied **Status: Application has been determined by the EA** Positional Accuracy: Automatically positioned to the address	A8SW (S)	826	2	526931 182989
24	**Registered Radioactive Substances** Name: Humana Hospital Wellington Location: 8A Wellington Place, LONDON, Greater London, NW8 9LE Authority: Environment Agency, Thames Region Permit Reference: AB8511 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelled** Positional Accuracy: Unknown	A8SW (S)	855	2	526918 182961
	River Quality Name: Guc (Paddington Arm) GQA Grade: River Quality E Reach: Canal Feeder - Camden Road Estimated Distance (km): 10.5 Flow Rate: Flow greater than 80 cumecs Flow Type: Canal Year: 2000	A9NW (SE)	674	2	527384 183248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**Water Abstractions** Operator: London Borough Of Camden Licence Number: 28/39/39/0219 Permit Version: 1 Location: Swiss Cottage Open Space- Borehole Authority: Environment Agency, Thames Region Abstraction: Municipal Grounds: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Swiss Cottage Open Space, Winchester Road, London. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	450	2	526800 184280
26	**Water Abstractions** Operator: London Borough Of Camden Licence Number: Th/039/0039/087 Permit Version: 1 Location: Swiss Cottage Open Space- Borehole Authority: Environment Agency, Thames Region Abstraction: Municipal Grounds: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Swiss Cottage Open Space, Winchester Road, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 5th December 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	462	2	526750 184261
26	**Water Abstractions** Operator: London Borough Of Camden Licence Number: Th/039/0039/087 Permit Version: 1 Location: Swiss Cottage Open Space- Borehole Authority: Environment Agency, Thames Region Abstraction: Municipal Grounds: General Washing/Process Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Swiss Cottage Open Space, Winchester Road, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 5th December 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	462	2	526750 184261
26	**Water Abstractions** Operator: London Borough Of Camden Licence Number: Th/039/0039/087 Permit Version: 1 Location: Swiss Cottage Open Space- Borehole Authority: Environment Agency, Thames Region Abstraction: Municipal Grounds: Lake And Pond Throughflow Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Swiss Cottage Open Space, Winchester Road, London Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 5th December 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	462	2	526750 184261

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**Water Abstractions** Operator: Thames Water Utilities Ltd Licence Number: Th/039/0039/058 Permit Version: 1 Location: Borehole At Barrow Hill Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SW (E)	609	2	527636 183697
27	**Water Abstractions** Operator: Thames Water Utilities Ltd Licence Number: 28/39/39/0231 Permit Version: 1 Location: Barrow Hill Pumping Station - Borehole Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Barrow Hill Pumping Station Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st April 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SW (E)	615	2	527640 183690
27	**Water Abstractions** Operator: Thames Water Utilities Ltd Licence Number: 28/39/39/0202 Permit Version: 1 Location: Barrow Hill Pumping Station - Borehole Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Barrow Hill Pumping Station Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th September 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SW (E)	615	2	527640 183690
28	**Water Abstractions** Operator: Marylebone Cricket Club Licence Number: Th/039/0039/116 Permit Version: 3 Location: Lords Cricket Ground, London. Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 26th March 2021 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	945	2	526902 182872

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
28	**Water Abstractions** Operator: Marylebone Cricket Club Licence Number: Th/039/0039/116 Permit Version: 2 Location: Lords Cricket Ground, London. Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 28th May 2020 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	945	2	526902 182872
28	**Water Abstractions** Operator: Marylebone Cricket Club Licence Number: Th/039/0039/116 Permit Version: 1 Location: Lords Cricket Ground, London. Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Heat Pump Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 17th May 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8SW (S)	945	2	526902 182872
	Water Abstractions Operator: Zoological Society Of London Licence Number: 28/39/39/0035 Permit Version: 100 Location: Borehole At Regent'S Park, London Nw1 Authority: Environment Agency, Thames Region Abstraction: Zoos/Kennels/Stables: Animal Watering & General Use (Non Agricultural) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 59 Yearly Rate (m3): 681 Details: Regent'S Park, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th April 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	1057	2	528000 183400
	Water Abstractions Operator: Abbey Lodge Rtm Company Limited Licence Number: 28/39/39/0115 Permit Version: 101 Location: Abbey Lodge, Park Road, London Nw8-Two Boreholes Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Abbey Lodge, Park Road, London Nw8 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st June 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A4NW (S)	1259	2	527420 182620

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Wood Management Trustees Ltd Licence Number: 28/39/39/0115 Permit Version: 100 Location: Two Boreholes At Abbey Lodge, Park Road, London Nw8 Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 100 Yearly Rate (m3): 28640 Details: Abbey Lodge, Park Road, London Nw8 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 28th November 1991 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4NW (S)	1259	2	527420 182620
	Water Abstractions Operator: Canal And River Trust Licence Number: 28/39/39/0164 Permit Version: 101 Location: St John'S Wood, London - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3SE (S)	1352	2	527050 182460
	Water Abstractions Operator: British Waterways Board Licence Number: 28/39/39/0164 Permit Version: 100 Location: St John'S Wood, London - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 3840 Yearly Rate (m3): 1 Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th April 1983 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A3SE (S)	1352	2	527050 182460
	Water Abstractions Operator: British Waterways Licence Number: 28/39/39/0164A Permit Version: Not Supplied Location: St Johns Wood, LONDON, Nw1 Authority: Environment Agency, Thames Region Abstraction: Industrial Cooling (Cegb) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 1920 Yearly Rate (m3): 1 Details: Annual Abstraction Total Aggregated To Another Licence For Quantity Purposes. Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A3SW (S)	1411	2	527000 182400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: British Waterways Board Licence Number: 28/39/39/0173 Permit Version: 100 Location: Oval Road, Camden - Grand Union Regents Canal Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 20 Yearly Rate (m3): 7000 Details: Land At Oval Road, Camden, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NE (E)	1448	2	528490 184020
	Water Abstractions Operator: British Waterways Licence Number: 28/39/39/0164B Permit Version: Not Supplied Location: Southampton Bridge, LONDON, Nw8 Authority: Environment Agency, Thames Region Abstraction: Industrial Cooling (Cegb) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 3840 Yearly Rate (m3): 1 Details: Annual Abstraction Total Aggregated To Another Licence For Quantity Purposes. Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A15NE (E)	1456	2	528500 184000
	Water Abstractions Operator: Canal And River Trust Licence Number: 28/39/39/0164 Permit Version: 101 Location: Southampton Bridge, London, Nw8 - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NE (E)	1458	2	528500 184020
	Water Abstractions Operator: British Waterways Board Licence Number: 28/39/39/0164 Permit Version: 100 Location: Southampton Bridge, London, Nw8 - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 3840 Yearly Rate (m3): 1 Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th April 1983 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A15NE (E)	1458	2	528500 184020

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Abbey National Plc Licence Number: 28/39/39/0070 Permit Version: 101 Location: Borehole At Abbey House, Baker Street, London Nw1 Authority: Environment Agency, Thames Region Abstraction: Commercial/Industrial/Public Services: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 91 Yearly Rate (m3): 2273 Details: Abbey House, Baker Street, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd May 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1884	2	527800 182100
	Water Abstractions Operator: Baskerville Estates (Gp) Limited Licence Number: 28/39/39/0070 Permit Version: 102 Location: Abbey House, Baker Street- Borehole Authority: Environment Agency, Thames Region Abstraction: Commercial/Industrial/Public Services: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Abbey House, Baker Street, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 19th December 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(SE)	1905	2	527850 182100
	Water Abstractions Operator: Greenwich Leisure Limited Licence Number: 28/39/39/0091 Permit Version: 101 Location: Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Commercial/Industrial/Public Services: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Kentish Town Sports Centre, Prince Of Wales Road, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th May 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1939	2	528800 184700
	Water Abstractions Operator: Greenwich Leisure Limited Licence Number: 28/39/39/0091 Permit Version: 101 Location: Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: St. Pancras Public Baths, Prince Of Wales Road, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th May 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1939	2	528800 184700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Greenwich Leisure Ltd Licence Number: 28/39/39/0091 Permit Version: 101 Location: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: St. Pancras Public Baths, Prince Of Wales Road, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 5th April 2012 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1939	2	528800 184700
	Water Abstractions Operator: London Borough Of Camden Licence Number: 28/39/39/0091 Permit Version: 100 Location: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Commercial/Industrial/Public Services: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 605 Yearly Rate (m3): 76509 Details: Kentish Town Sports Centre, Prince Of Wales Road, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 13th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NE)	1939	2	528800 184700
	Water Abstractions Operator: London Borough Of Camden Licence Number: 28/39/39/0091 Permit Version: 100 Location: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Industrial; Commercial And Public Services: Laundry Use Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: St. Pancras Public Baths, Prince Of Wales Road, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 13th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NE)	1939	2	528800 184700
	Water Abstractions Operator: London Borough Of Camden Licence Number: 28/39/39/0091 Permit Version: 100 Location: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: St. Pancras Public Baths, Prince Of Wales Road, London Nw1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 13th June 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NE)	1939	2	528800 184700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Dorset House Residential Limited Licence Number: 28/39/39/0021 Permit Version: 104 Location: Dorset House, London- 2 Boreholes Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Dorset House, Gloucester Place, London W1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th November 2020 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1975	2	527800 182000
	Water Abstractions Operator: Dorset House Residential Limited Licence Number: 28/39/39/0021 Permit Version: 103 Location: Dorset House, London- 2 Boreholes Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Dorset House, Gloucester Place, London W1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 20th November 2014 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1975	2	527800 182000
	Water Abstractions Operator: Bellnorth Limited Licence Number: 28/39/39/0021 Permit Version: 102 Location: Dorset House, London- 2 Boreholes Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Dorset House, Gloucester Place, London W1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th August 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1975	2	527800 182000
	Water Abstractions Operator: Bellnorth Limited Licence Number: 28/39/39/0021 Permit Version: 101 Location: Two Boreholes At Dorset House, Gloucester Place, London. W1 Authority: Environment Agency, Thames Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 318 Yearly Rate (m3): 56370 Details: Dorset House, Gloucester Place, London W1 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th January 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1975	2	527800 182000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Map Combined Classification: Unproductive Aquifer (may have productive aquifer beneath) Combined Vulnerability: Unproductive Combined Aquifer: Unproductive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Mixed Dilution: 300-550 mm/year Baseflow Index: 40-70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13SW (W)	0	6	527000 183850
	Groundwater Vulnerability Map Combined Classification: Unproductive Aquifer (may have productive aquifer beneath) Combined Vulnerability: Unproductive Combined Aquifer: Unproductive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Mixed Dilution: 300-550 mm/year Baseflow Index: 40-70% Superficial Patchiness: <90% Superficial Thickness: <3m Superficial Recharge: No Data	A13SE (SE)	0	6	527015 183850
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A13SE (SE)	0	6	527015 183850
	Superficial Aquifer Designations No Data Available				
29	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A13SE (SE)	0	2	527015 183850
30	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone I (Inner Protection Zone): Travel time of 50 days or less to the groundwater source.	A14SW (E)	319	2	527359 183784
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5204.1 Watercourse Level: Underground Permanent: True Watercourse Name: The Fountains Catchment Name: Thames Primacy: 1	A13SE (E)	113	7	527163 183845

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	**OS Water Network Lines** Watercourse Form: Canal Watercourse Length: 2236.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Grand Union Canal Catchment Name: Thames Primacy: 1	A9NW (SE)	670	7	527470 183322

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Licensed Waste Management Facilities (Locations)** Licence Number: 401853 Location: Regents Park Office, The Store Yard, Inner Circle, Regents Park, London, NW1 4NR Operator Name: The Royal Parks Operator Location: Not Supplied Authority: Environment Agency - Thames Region, North East Area Site Category: Composting **Licence Status: Issued** Issued: 24th February 2015 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SW (SE)	865	2	527538 183124
	Local Authority Landfill Coverage Name: London Borough of Camden - Has no landfill data to supply		0	8	527015 183850
	Local Authority Landfill Coverage Name: Westminster City Council - Has supplied landfill data		52	3	527050 183776
34	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1991	A12SE (W)	568	10	526436 183663

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Thames Group	A13SE (SE)	0	1	527015 183850
	BGS Estimated Soil Chemistry No data available				
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526761, 183848 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 23.60 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 78.40 mg/kg Lead Measured Concentration: 572.40 mg/kg Nickel Measured Concentration: 37.60 mg/kg	A13SW (W)	216	1	526761 183848
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527263, 183792 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.40 mg/kg Cadmium Measured Concentration: 0.50 mg/kg Chromium Measured Concentration: 110.30 mg/kg Lead Measured Concentration: 2419.20 mg/kg Nickel Measured Concentration: 40.00 mg/kg	A13SE (E)	225	1	527263 183792
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526761, 184231 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 7.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 20.70 mg/kg Lead Measured Concentration: 38.00 mg/kg Nickel Measured Concentration: 6.70 mg/kg	A18SW (NW)	431	1	526761 184231
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527207, 184291 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 13.10 mg/kg Cadmium Measured Concentration: 0.70 mg/kg Chromium Measured Concentration: 81.00 mg/kg Lead Measured Concentration: 714.00 mg/kg Nickel Measured Concentration: 26.50 mg/kg	A18SE (NE)	441	1	527207 184291

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527278, 183302 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 31.70 mg/kg Cadmium Measured Concentration: 0.90 mg/kg Chromium Measured Concentration: 91.20 mg/kg Lead Measured Concentration: 2587.50 mg/kg Nickel Measured Concentration: 46.40 mg/kg	A8NE (SE)	574	1	527278 183302
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526820, 183228 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 12.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 57.90 mg/kg Lead Measured Concentration: 221.30 mg/kg Nickel Measured Concentration: 19.00 mg/kg	A8NW (S)	614	1	526820 183228
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527766, 183762 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 17.80 mg/kg Cadmium Measured Concentration: 0.50 mg/kg Chromium Measured Concentration: 86.20 mg/kg Lead Measured Concentration: 432.00 mg/kg Nickel Measured Concentration: 27.40 mg/kg	A14SE (E)	723	1	527766 183762
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526218, 183841 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 18.90 mg/kg Cadmium Measured Concentration: 0.70 mg/kg Chromium Measured Concentration: 90.90 mg/kg Lead Measured Concentration: 937.50 mg/kg Nickel Measured Concentration: 30.50 mg/kg	A12SW (W)	759	1	526218 183841
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527717, 184227 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 21.20 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 77.40 mg/kg Lead Measured Concentration: 2046.50 mg/kg Nickel Measured Concentration: 33.50 mg/kg	A19SE (NE)	759	1	527717 184227

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526268, 184340 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 30.40 mg/kg Cadmium Measured Concentration: 0.80 mg/kg Chromium Measured Concentration: 95.50 mg/kg Lead Measured Concentration: 688.90 mg/kg Nickel Measured Concentration: 45.30 mg/kg	A17SW (NW)	870	1	526268 184340
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 526703, 184701 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 32.80 mg/kg Cadmium Measured Concentration: 0.70 mg/kg Chromium Measured Concentration: 79.00 mg/kg Lead Measured Concentration: 770.10 mg/kg Nickel Measured Concentration: 44.30 mg/kg	A18NW (N)	873	1	526703 184701
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527169, 184808 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 20.70 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 83.40 mg/kg Lead Measured Concentration: 2153.80 mg/kg Nickel Measured Concentration: 34.90 mg/kg	A18NE (N)	930	1	527169 184808
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 527775, 183248 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 15.60 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 86.10 mg/kg Lead Measured Concentration: 203.10 mg/kg Nickel Measured Concentration: 34.40 mg/kg	A9NE (SE)	948	1	527775 183248

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: London Count Id: 7209 Arsenic Minimum Concentration: 1.00 mg/kg Arsenic Average Concentration: 17.00 mg/kg Arsenic Maximum Concentration: 161.00 mg/kg Cadmium Minimum Concentration: 0.10 mg/kg Cadmium Average Concentration: 0.90 mg/kg Cadmium Maximum Concentration: 165.20 mg/kg Chromium Minimum Concentration: 13.00 mg/kg Chromium Average Concentration: 79.00 mg/kg Chromium Maximum Concentration: 2094.00 mg/kg Lead Minimum Concentration: 11.00 mg/kg Lead Average Concentration: 280.00 mg/kg Lead Maximum Concentration: 10000.00 mg/kg Nickel Minimum Concentration: 2.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 506.00 mg/kg	A13SE (SE)	0	1	527015 183850
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	0	1	527015 183850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	**Contemporary Trade Directory Entries** Name: Soap Opera The Location: 8, Winchester Road, London, NW3 3NT Classification: Laundries & Launderettes **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	397	-	526882 184260
36	**Contemporary Trade Directory Entries** Name: Arrow Enterprises (Uk) Ltd Location: 13, Lower Merton Rise, London, NW3 3RA Classification: Chemicals & Allied Products **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	402	-	527235 184231
36	**Contemporary Trade Directory Entries** Name: Swan Dry Cleaners Location: 19, Lower Merton Rise, London, NW3 3RA Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	421	-	527226 184259
37	**Contemporary Trade Directory Entries** Name: 24 Hr Waste Disposal Location: St. Johns Wood Ter, London, NW8 6LP Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	414	-	527122 183412
38	**Contemporary Trade Directory Entries** Name: Kar-Dok.Com Location: 97, Avenue Road, London, NW3 5EJ Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	417	-	526723 184178
38	**Contemporary Trade Directory Entries** Name: Tyre Tigers Location: 97, AVENUE ROAD, LONDON, NW3 5EJ Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	417	-	526723 184178
38	**Contemporary Trade Directory Entries** Name: Fairfax Engineering Location: 1, Regency Parade, Finchley Road, London, NW3 5EQ Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	430	-	526694 184166
38	**Contemporary Trade Directory Entries** Name: Balco Ltd Location: 8, Regency Parade, Finchley Road, London, NW3 5EG Classification: Ventilators & Ventilation Systems **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	430	-	526694 184166
38	**Contemporary Trade Directory Entries** Name: Oxyvita Ltd Location: 11, Regency Parade, Finchley Road, London, NW3 5EG Classification: Medical Instruments - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	430	-	526694 184166
38	**Contemporary Trade Directory Entries** Name: My 1st Call Locksmith Location: 4, Regency Parade, Finchley Road, London, NW3 5EG Classification: Lock Suppliers and Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	430	-	526694 184166
38	**Contemporary Trade Directory Entries** Name: Medoroux Medical Ltd Location: 11, Regency Parade, Finchley Road, London, NW3 5EG Classification: Medical Equipment Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	431	-	526694 184166
38	**Contemporary Trade Directory Entries** Name: Golf Doktor Location: Former 8, Regency Parade, Finchley Road, London, NW3 5EG Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	431	-	526694 184166

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	**Contemporary Trade Directory Entries** Name: Cleaning Services St Johns Wood Ltd Location: 61, Queens Grove, London, NW8 6ER Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	422	-	526641 183581
40	**Contemporary Trade Directory Entries** Name: Ivy Dry Cleaners Location: 4, Queens Terrace, London, NW8 6DX Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (SW)	426	-	526673 183539
41	**Contemporary Trade Directory Entries** Name: Clean With Us Ltd Location: Flat 8, Leitch House, Alexandra Road, London, NW8 0SE Classification: Boat Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (NW)	475	-	526567 184075
42	**Contemporary Trade Directory Entries** Name: Top Tier Blinds & Shutters Location: 11, Aquila Street, London, NW8 6PN Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	477	-	526928 183341
43	**Contemporary Trade Directory Entries** Name: Majestic Hardware Location: 49, Charlbert Street, London, NW8 6JN Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	487	-	527107 183334
43	**Contemporary Trade Directory Entries** Name: Johns Wood Location: 47 Charlbert St, London, NW8 6JN Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	494	-	527116 183328
43	**Contemporary Trade Directory Entries** Name: Parks Location: 76-78, Allitsen Road, London, NW8 7BG Classification: Candle Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	522	-	527121 183301
44	**Contemporary Trade Directory Entries** Name: Danico Location: 31-35, Winchester Road, London, NW3 3NR Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	489	-	526803 184325
45	**Contemporary Trade Directory Entries** Name: Scotts Location: Flat 15, Bray, Fellows Road, London, NW3 3JX Classification: Cabinet Makers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	500	-	527247 184337
46	**Contemporary Trade Directory Entries** Name: Fantastic Services St Johns Wood Location: 14, Finchley Road, London, NW8 6EB Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	502	-	526639 183465
46	**Contemporary Trade Directory Entries** Name: Buzy Cleaning Location: 18-22, Finchley Road, London, NW8 6EB Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	505	-	526615 183484
47	**Contemporary Trade Directory Entries** Name: Swiss Cottage Dry Cleaners Location: 121, Finchley Road, London, NW3 6HY Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	553	-	526623 184270

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**Contemporary Trade Directory Entries** Name: London Overground Rail Operations Ltd Location: 125, Finchley Road, London, NW3 6HY Classification: Railways **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	569	-	526612 184282
47	**Contemporary Trade Directory Entries** Name: Fuji Photo Film (Uk) Ltd Location: 125, Finchley Road, London, NW3 6HY Classification: Photographic Equipment & Supplies - Wholesale **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	569	-	526612 184282
48	**Contemporary Trade Directory Entries** Name: Sunny Clean Location: Flat 7, Hilltop Court 14-16, Alexandra Road, London, NW8 0DR Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	557	-	526453 184025
48	**Contemporary Trade Directory Entries** Name: Sunny Clean Location: Flat 7, Hilltop Court 14-16, Alexandra Road, London, NW8 0DR Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	557	-	526453 184025
49	**Contemporary Trade Directory Entries** Name: Snappy Snaps Location: 140, ST. JOHNS WOOD HIGH STREET, LONDON, NW8 7SE Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	560	-	526958 183254
49	**Contemporary Trade Directory Entries** Name: Johnson Cleaners (Uk) Ltd Location: 69-71, St. Johns Wood High Street, London, NW8 7NL Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	590	-	526935 183226
49	**Contemporary Trade Directory Entries** Name: Supasnaps Location: 69-71, St. Johns Wood High Street, London, NW8 7NL Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	590	-	526935 183226
49	**Contemporary Trade Directory Entries** Name: Madame George Dry Cleaners Location: 9, CIRCUS ROAD, LONDON, NW8 6NX Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	597	-	526908 183223
49	**Contemporary Trade Directory Entries** Name: Shirt Makers England Ltd Location: Cochrane Mews, London, NW8 6NY Classification: Shirt Makers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8NW (S)	599	-	526925 183218
50	**Contemporary Trade Directory Entries** Name: Groom 'N' Zoom Location: 106, Allitsen Road, London, NW8 7AY Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	564	-	527048 183248
51	**Contemporary Trade Directory Entries** Name: H R Brook Location: Flat 7, 7-8, St. Edmunds Terrace, London, NW8 7QP Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (SE)	613	-	527594 183582
52	**Contemporary Trade Directory Entries** Name: Wellington Hospital Location: St Johns Wood,Circus Road, London, NW8 6PD Classification: Hospitals **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8NW (S)	613	-	526845 183221

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
53	**Contemporary Trade Directory Entries** Name: Cedo Ltd Location: 32, Eton Avenue, London, NW3 3HL Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	618	-	527135 184498
54	**Contemporary Trade Directory Entries** Name: Tempo Dry Cleaners Ltd Location: 98, St. Johns Wood High Street, London, NW8 7SH Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	627	-	527020 183184
55	**Contemporary Trade Directory Entries** Name: Formwork Architects Ltd Location: 47, St. Johns Wood High Street, London, NW8 7NJ Classification: Laundry & Dry Cleaning Supplies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	633	-	526964 183180
56	**Contemporary Trade Directory Entries** Name: Technology Pools Location: 67 Loudoun Road, London, NW8 0DQ Classification: Swimming Pool Contractors, Repairers & Service **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	649	-	526351 184007
56	**Contemporary Trade Directory Entries** Name: Drown & Co Ltd Location: 73, Loudoun Road, London, NW8 0DQ Classification: Art Restoration & Picture Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	651	-	526346 183997
56	**Contemporary Trade Directory Entries** Name: Francis Butlin Location: 73, Loudoun Road, London, NW8 0DQ Classification: Art Restoration & Picture Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	651	-	526346 183997
56	**Contemporary Trade Directory Entries** Name: Susan M Moore Fbapcr Location: 73, Loudoun Road, London, NW8 0DQ Classification: Art Restoration & Picture Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	651	-	526346 183997
56	**Contemporary Trade Directory Entries** Name: Master Clean Dry Cleaners Location: 2, LANGTRY WALK, LONDON, NW8 0DU Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (W)	658	-	526341 184006
56	**Contemporary Trade Directory Entries** Name: Master Clean Dry Cleaners Location: 2, Langtry Walk, London, NW8 0DU Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (W)	658	-	526341 184006
56	**Contemporary Trade Directory Entries** Name: Swiss Cottage Launderette Location: 7, Langtry Walk, London, NW8 0DU Classification: Laundries & Launderettes **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	658	-	526341 184007
56	**Contemporary Trade Directory Entries** Name: Artworks Euro Ltd Location: 69, Loudoun Road, London, NW8 0DB Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	658	-	526341 184007
56	**Contemporary Trade Directory Entries** Name: Swiss Cottage Launderette Location: 7, Langtry Walk, London, NW8 0DU Classification: Laundries & Launderettes **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NE (W)	658	-	526341 184007

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	**Contemporary Trade Directory Entries** Name: Komodo Location: 77c, King Henrys Road, London, NW3 3QU Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	668	-	527629 184199
57	**Contemporary Trade Directory Entries** Name: Komodo Location: 77, King Henrys Road, London, NW3 3QU Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	668	-	527629 184199
58	**Contemporary Trade Directory Entries** Name: Gootc Ltd Location: 26, Northways Parade, London, NW3 5DN Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	668	-	526630 184429
58	**Contemporary Trade Directory Entries** Name: Red Spot Location: 26 Northways Parade, London, NW3 5EN Classification: Dry Cleaners **Status: Active** Positional Accuracy: Manually positioned to the address or location	A17SE (NW)	668	-	526630 184429
58	**Contemporary Trade Directory Entries** Name: Trans-World Trading Ltd Location: 24, Northways Parade, London, NW3 5DN Classification: Photographic Equipment & Supplies - Wholesale **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	668	-	526630 184429
58	**Contemporary Trade Directory Entries** Name: Smart Choice Dry Cleaners Location: 23, Northways Parade, LONDON, NW3 5DN Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	668	-	526630 184429
58	**Contemporary Trade Directory Entries** Name: Sevenoaks Sound & Vision Ltd Location: 15, Northways Parade, London, NW3 5EN Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	668	-	526630 184429
59	**Contemporary Trade Directory Entries** Name: Ibstock Building Products Ltd Location: 28 Wellington Rd, London, NW8 9SP Classification: Brick Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	670	-	526900 183150
60	**Contemporary Trade Directory Entries** Name: Oslo Court Garage Location: Prince Albert Road, London, NW8 7EN Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	675	-	527245 183177
60	**Contemporary Trade Directory Entries** Name: Oslo Court Garage Location: Prince Albert Road, London, NW8 7EN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	675	-	527245 183177
60	**Contemporary Trade Directory Entries** Name: Oslo Court Garage Ltd Location: Prince Albert Road, London, NW8 7EN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	675	-	527245 183177
60	**Contemporary Trade Directory Entries** Name: C D Carriage Location: Flat 2, Oslo Court, Prince Albert Road, London, NW8 7EN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	675	-	527245 183177

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	**Contemporary Trade Directory Entries** Name: Printing.Com Location: 3, Harben Parade, Finchley Road, London, NW3 6JP Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	676	-	526586 184404
61	**Contemporary Trade Directory Entries** Name: Kall Kwik Location: 3, Harben Parade, Finchley Road, London, NW3 6JP Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	676	-	526586 184404
61	**Contemporary Trade Directory Entries** Name: A K Design & Print Location: 3 Harben Parade,Finchley Road, Camden, London, NW3 6JP Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	676	-	526587 184405
62	**Contemporary Trade Directory Entries** Name: Lilliman & Cox Location: 29, St. Johns Wood High Street, London, NW8 7NH Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	678	-	527013 183133
63	**Contemporary Trade Directory Entries** Name: Kara Services Location: 38, Fellows Road, London, NW3 3LH Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	692	-	527417 184459
64	**Contemporary Trade Directory Entries** Name: Wellington Hospital Location: 27, Circus Road, London, NW8 6PG Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	695	-	526816 183144
65	**Contemporary Trade Directory Entries** Name: Harringtons Construction Ltd Location: 57, Belsize Road, London, NW6 4BE Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	701	-	526318 184076
65	**Contemporary Trade Directory Entries** Name: Cresta Motors Location: 59-65, Belsize Road, London, NW6 4BE Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	715	-	526300 184067
66	**Contemporary Trade Directory Entries** Name: Elias Cleaners Ltd Location: 68, ST. JOHNS WOOD HIGH STREET, LONDON, NW8 7SH Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	704	-	527077 183110
66	**Contemporary Trade Directory Entries** Name: Elias Dry Cleaners Location: 68, St. Johns Wood High Street, London, NW8 7SH Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	704	-	527077 183110
66	**Contemporary Trade Directory Entries** Name: Elias Cleaners Ltd Location: 68 St Johns Wood High Street, London, NW8 7SH Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	704	-	527077 183110
66	**Contemporary Trade Directory Entries** Name: Anna'S Laundrette Location: 62, St. Johns Wood High Street, London, NW8 7SH Classification: Laundries & Launderettes **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	719	-	527087 183096

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	**Contemporary Trade Directory Entries** Name: Wellington Gallery Location: 1, St. Johns Wood High Street, London, NW8 7NG Classification: Furniture - Repairing & Restoring **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	747	-	527070 183066
67	**Contemporary Trade Directory Entries** Name: Cleaners South Hampstead Location: 48a, Boundary Road, London, NW8 0HJ Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	712	-	526266 183880
68	**Contemporary Trade Directory Entries** Name: Hospital Of St John & St Elizabeth Location: 60, Grove End Road, London, NW8 9NH Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	714	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: Ghosh Breast Clinic Location: 60 Grove End Road, Westminster, London, NW8 9NH Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	714	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: St John & St Elizabeth Hospital Location: 60, GROVE END ROAD, LONDON, NW8 9NH Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	714	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: Mr Nilesh Agarwal - Well Women'S Clinic Location: 60 Grove End Road, Westminster, London, NW8 9NH Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	714	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: Pathlabnw8 Location: 60, Grove End Road, London, NW8 9NH Classification: Medical & Dental Laboratories **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	715	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: Path Lab Location: 60, Grove End Road, London, NW8 9NH Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	715	-	526649 183196
68	**Contemporary Trade Directory Entries** Name: The London Spine Unit Location: 60, Grove End Road, London, NW8 9NH Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	715	-	526649 183196
69	**Contemporary Trade Directory Entries** Name: Anthony Rau Location: 38, FAIRFAX ROAD, LONDON, NW6 4HA Classification: Cabinet Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	721	-	526391 184257
69	**Contemporary Trade Directory Entries** Name: Paper Moon Location: 53, Fairfax Road, London, NW6 4EL Classification: Wallpapers & Wall Coverings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	753	-	526350 184254
69	**Contemporary Trade Directory Entries** Name: Pro Carpet Cleaners London Location: Flat 1, Gladstone Court, 49, Fairfax Road, London, NW6 4EP Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	760	-	526355 184273

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	**Contemporary Trade Directory Entries** Name: Cleansville Location: 39, Fairfax Road, London, NW6 4EL Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	767	-	526362 184295
70	**Contemporary Trade Directory Entries** Name: Butterworth Centre Location: 36 Circus Road, London, NW8 9SE Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	722	-	526752 183137
71	**Contemporary Trade Directory Entries** Name: Volvo Cars Location: 1, Northways Parade, London, NW3 5EN Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	731	-	526596 184482
71	**Contemporary Trade Directory Entries** Name: Kwik-Fit Location: 1, Northways Parade, London, NW3 5EN Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	731	-	526596 184482
71	**Contemporary Trade Directory Entries** Name: Volvo Cars London Location: 1, Northways Parade, London, NW3 5EN Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	731	-	526596 184482
71	**Contemporary Trade Directory Entries** Name: Speedway Location: 1, Northways Parade, London, NW3 5EN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	731	-	526596 184482
72	**Contemporary Trade Directory Entries** Name: Blue Tunnel Ltd Location: C, 119, Rowley Way, London, NW8 0SP Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	735	-	526258 183993
73	**Contemporary Trade Directory Entries** Name: Bonsai Breakdown Location: Flat 7, Noel House, Harben Road, London, NW6 4RL Classification: Car Breakdown & Recovery Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	741	-	526510 184423
74	**Contemporary Trade Directory Entries** Name: Wellington Road Filling Station Location: 21, Wellington Road, London, NW8 9SQ Classification: Petrol Filling Stations - 24 Hour **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	746	-	526864 183080
74	**Contemporary Trade Directory Entries** Name: M R H Service Station Location: Wellington Road, London, NW8 9SQ Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	758	-	526876 183065
75	**Contemporary Trade Directory Entries** Name: Modern Motors Ltd Location: 95, Adelaide Road, London, NW3 3XX Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	747	-	527628 184339
75	**Contemporary Trade Directory Entries** Name: Modern Motors Ltd Location: 95 Adelaide Rd, London, NW3 3QB Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	747	-	527628 184339

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
76	**Contemporary Trade Directory Entries** Name: Mark One Motors Location: 5-6, Eton Garages, Lambolle Place, London, NW3 4PE Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	750	-	527339 184570
76	**Contemporary Trade Directory Entries** Name: Hampstead Motor Services Uk Ltd Location: 4, Lambolle Place, London, NW3 4PD Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	752	-	527295 184591
76	**Contemporary Trade Directory Entries** Name: Belsize Motors Location: 3, Lambolle Place, London, NW3 4PD Classification: Car Engine Tuning & Diagnostic Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	762	-	527299 184600
76	**Contemporary Trade Directory Entries** Name: Autotech Hamstead Location: 3, Lambolle Place, London, NW3 4PD Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	762	-	527299 184600
76	**Contemporary Trade Directory Entries** Name: Hmc Fleet Maintenance Centre Location: 3, Eton Garages, Lambolle Place, London, NW3 4PE Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	766	-	527346 184585
76	**Contemporary Trade Directory Entries** Name: Little & Pace Location: 3, Eton Garages, Lambolle Place, London, NW3 4PE Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	766	-	527346 184585
76	**Contemporary Trade Directory Entries** Name: Rayden Location: 17, Eton Garages, Lambolle Place, London, NW3 4PE Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	768	-	527326 184596
76	**Contemporary Trade Directory Entries** Name: Belsize Automotive Repairs Location: 3, ETON GARAGES, LAMBOLLE PLACE, LONDON, NW3 4PE Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	768	-	527344 184588
76	**Contemporary Trade Directory Entries** Name: Porsheworx Engineering Ltd Location: 2, LAMBOLLE PLACE, LONDON, NW3 4PD Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	770	-	527303 184607
76	**Contemporary Trade Directory Entries** Name: Little & Pace Motors Location: 2-3 Eton Garages,Lambolle Pl, London, NW3 4PE Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A18NE (NE)	776	-	527346 184596
76	**Contemporary Trade Directory Entries** Name: Beta Lighting Ltd Location: 19, Eton Garages, Lambolle Place, London, NW3 4PE Classification: Lighting Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (NE)	784	-	527332 184610
77	**Contemporary Trade Directory Entries** Name: Drennan & Co Location: 64, Belsize Park, London, NW3 4EH Classification: Door & Gate Operating Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (N)	757	-	526723 184584

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**Contemporary Trade Directory Entries** Name: Layal Location: 10, St. Georges Terrace, London, NW1 8XH Classification: Lingerie & Hosiery Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	764	-	527800 184012
79	**Contemporary Trade Directory Entries** Name: Cleansville Location: 3-5, Fairhazel Gardens, London, NW6 3QE Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	772	-	526259 184121
79	**Contemporary Trade Directory Entries** Name: Connoisseur Dry Cleaners Location: 3-5, FAIRHAZEL GARDENS, LONDON, NW6 3QE Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	772	-	526259 184121
79	**Contemporary Trade Directory Entries** Name: Jean Patou Ltd Location: 3, Coleridge Gardens, London, NW6 3QH Classification: Perfume Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A12NW (W)	783	-	526244 184114
79	**Contemporary Trade Directory Entries** Name: Maurice Douek Ltd Location: 3, Coleridge Gardens, London, NW6 3QH Classification: Perfume Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A12NW (W)	783	-	526244 184114
79	**Contemporary Trade Directory Entries** Name: Jacques Bouvier Ltd Location: 4-5, Coleridge Gardens, London, NW6 3QH Classification: Leather Merchants & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A12NW (W)	784	-	526244 184115
79	**Contemporary Trade Directory Entries** Name: Eurotrade International Location: Coleridge Gdns, London, NW6 3QH Classification: Telecommunications Equipment & Systems **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A12NW (W)	785	-	526242 184114
79	**Contemporary Trade Directory Entries** Name: Swiss Dry Cleaners Location: 13, Fairhazel Gardens, London, NW6 3QE Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12NW (W)	798	-	526237 184135
80	**Contemporary Trade Directory Entries** Name: Clean 4 You Location: 55, Belsize Park, London, NW3 4EE Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	778	-	526650 184571
81	**Contemporary Trade Directory Entries** Name: N W Creative Location: New College Parade, Finchley Road, London, NW3 5EP Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	782	-	526536 184500
82	**Contemporary Trade Directory Entries** Name: B P Service Station Location: Lords Service Station,21-41 Wellington Road, Westminster, London, NW8 9SQ Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	789	-	526898 183030

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	**Contemporary Trade Directory Entries** Name: Cork & Bottle Wines Ltd Location: 47, Ainger Road, London, NW3 3AH Classification: Bottle Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	796	-	527797 184141
83	**Contemporary Trade Directory Entries** Name: Fabric Lab Location: 54, Ainger Road, London, NW3 3AH Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	831	-	527822 184175
84	**Contemporary Trade Directory Entries** Name: Chase Dry Cleaners Location: 74 Whittom,Primrose Hill Rd, London, NW3 4AB Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A19NW (NE)	797	-	527493 184534
84	**Contemporary Trade Directory Entries** Name: R K P Hardware D I Y Location: 51, Englands Lane, LONDON, NW3 4YD Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	830	-	527517 184557
84	**Contemporary Trade Directory Entries** Name: Chequers Dry Cleaners Location: 48, Englands Lane, London, NW3 4UE Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	838	-	527502 184579
85	**Contemporary Trade Directory Entries** Name: Schmitt Automobile Services Ltd Location: 109, Goldhurst Terrace, London, NW6 3HA Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	800	-	526282 184233
86	**Contemporary Trade Directory Entries** Name: Spring Fresh Cleaning Services Location: A, 19, Ainsworth Way, London, NW8 0SR Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	807	-	526170 183869
87	**Contemporary Trade Directory Entries** Name: St Johns Wood Autos Location: Langford Place, Basement 0f 22 Abbey Road, London, NW8 9DN Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	812	-	526419 183246
87	**Contemporary Trade Directory Entries** Name: Langford Motors Location: Langford Ct,22 Abbey Rd, London, NW8 9DN Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	813	-	526418 183246
88	**Contemporary Trade Directory Entries** Name: Nta Cleaning Services Location: 13, New College Parade, London, NW3 5EP Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	824	-	526502 184527
88	**Contemporary Trade Directory Entries** Name: Bp (Hampstead) Service Station Location: A, 104, Finchley Road, London, NW3 5EY Classification: Petrol Filling Stations - 24 Hour **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	865	-	526471 184554
88	**Contemporary Trade Directory Entries** Name: B P Service Station Location: 104A, FINCHLEY ROAD, LONDON, NW3 5EY Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	865	-	526471 184554

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
89	**Contemporary Trade Directory Entries** Name: P & P Print Ltd Location: 4-5, Coleridge Gardens, London, NW6 3QH Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	825	-	526191 184088
89	**Contemporary Trade Directory Entries** Name: Haidemenos Location: 4-5, Coleridge Gardens, London, NW6 3QH Classification: Food Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	825	-	526191 184088
89	**Contemporary Trade Directory Entries** Name: Dot Talent Location: Suite 1, 4-5, Coleridge Gardens, London, NW6 3QH Classification: Digital Printing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	825	-	526191 184088
90	**Contemporary Trade Directory Entries** Name: The Wellington Hospital Location: 8A, WELLINGTON PLACE, LONDON, NW8 9LE Classification: Hospitals **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	826	-	526931 182989
91	**Contemporary Trade Directory Entries** Name: New Brooms Location: 11, Chamberlain Street, London, NW1 8XB Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	828	-	527846 184095
91	**Contemporary Trade Directory Entries** Name: R Danzig & Sons Ltd Location: 65, Regents Park Road, London, NW1 8XD Classification: Furriers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	836	-	527862 184066
91	**Contemporary Trade Directory Entries** Name: Gale Furs Location: 65, Regents Park Road, London, NW1 8XD Classification: Furriers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	836	-	527862 184066
91	**Contemporary Trade Directory Entries** Name: Andrew Moor Associates Location: 14, CHAMBERLAIN STREET, LONDON, NW1 8XB Classification: Stained Glass Designers & Producers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	843	-	527862 184093
91	**Contemporary Trade Directory Entries** Name: Bearoak Ltd Location: 73, Regents Park Road, London, NW1 8UY Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	853	-	527872 184093
91	**Contemporary Trade Directory Entries** Name: T M K Aesthetics Lab Ltd Location: 128, REGENTS PARK ROAD, LONDON, NW1 8XL Classification: Laboratories **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	855	-	527890 184026
92	**Contemporary Trade Directory Entries** Name: Haywood Motors Location: A, 23, Lambolle Place, London, NW3 4PG Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	843	-	527361 184663
92	**Contemporary Trade Directory Entries** Name: Belsize Motors Location: A, 23, Lambolle Place, London, NW3 4PG Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	843	-	527361 184663

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	**Contemporary Trade Directory Entries** Name: J A Harnett Location: 4, Lancaster Stables, Lambolle Place, London, NW3 4PH Classification: Antiques - Repairing & Restoring **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	849	-	527379 184661
93	**Contemporary Trade Directory Entries** Name: Northern Extremes Ltd Location: 4, Erskine Road, London, NW3 3AJ Classification: Footwear Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	863	-	527860 184166
93	**Contemporary Trade Directory Entries** Name: Fara Kids Charity Shop Location: 83 Park Road,Primrose Hill, London, NW1 8UY Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14NE (E)	867	-	527881 184114
93	**Contemporary Trade Directory Entries** Name: D & Mc Automobiles Location: A, 89, Regents Park Road, London, NW1 8UY Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	884	-	527890 184144
93	**Contemporary Trade Directory Entries** Name: Clothing Co Location: 6, Erskine Road, London, NW3 3AJ Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14NE (E)	891	-	527883 184184
93	**Contemporary Trade Directory Entries** Name: R J Welsh Location: 156, Regents Park Road, London, NW1 8XN Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	906	-	527922 184111
93	**Contemporary Trade Directory Entries** Name: Mel-Art Graphics Location: 158, Regents Park Road, London, NW1 8XN Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	909	-	527925 184115
93	**Contemporary Trade Directory Entries** Name: Blossom & Browne Sycamore Location: 160, Regents Park Road, London, NW1 8XN Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	914	-	527928 184120
94	**Contemporary Trade Directory Entries** Name: Chalcot House Services Location: Flat 1, 51, Belsize Park Gardens, London, NW3 4JL Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NE (N)	866	-	527202 184737
95	**Contemporary Trade Directory Entries** Name: Polymer Fusion Coatings Location: Ground Floor 102 Regents Park Road, Camden, London, NW1 8UG Classification: Coating Specialists **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	870	-	527918 183932
96	**Contemporary Trade Directory Entries** Name: Agfa-Digital Photosnap Ltd Location: 171, Finchley Road, London, NW3 6LB Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SE (NW)	876	-	526419 184522
97	**Contemporary Trade Directory Entries** Name: Red Grey Ltd Location: 32, Englands Lane, London, NW3 4UE Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	888	-	527522 184625

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
97	**Contemporary Trade Directory Entries** Name: Allchin Pharmacy Location: 28, Englands Lane, London, NW3 4UE Classification: Pharmaceutical Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	898	-	527536 184627
98	**Contemporary Trade Directory Entries** Name: Spellbound Entertainment Ltd Location: 6, Primrose Mews, Sharpleshall Street, London, NW1 8YW Classification: Television & Video Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	889	-	527925 184028
99	**Contemporary Trade Directory Entries** Name: Siciliana Dry Cleaners Location: 6, BLENHEIM TERRACE, LONDON, NW8 0EB Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	895	-	526199 183394
99	**Contemporary Trade Directory Entries** Name: Abbey Dry Cleaners Location: 7, BLENHEIM TERRACE, LONDON, NW8 0EH Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	901	-	526212 183360
99	**Contemporary Trade Directory Entries** Name: Lab 120 Location: 16, Blenheim Terrace, London, NW8 0EB Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	922	-	526177 183378
99	**Contemporary Trade Directory Entries** Name: Cleaning Carpet Cleaners Location: 15-19, Blenheim Terrace, London, NW8 0EH Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NW (SW)	929	-	526193 183337
100	**Contemporary Trade Directory Entries** Name: The Tavistock & Portman N H S Foundation Trust Location: 120 Belsize Lane, Camden, London, NW3 5BA Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	899	-	526612 184688
101	**Contemporary Trade Directory Entries** Name: Gayle Mcvay Location: 52, Belsize Park Gardens, London, NW3 4ND Classification: Hats & Caps - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	910	-	527379 184728
102	**Contemporary Trade Directory Entries** Name: Fontana Guisti Architects Location: 185, Goldhurst Terrace, London, NW6 3ER Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	928	-	526075 184057
103	**Contemporary Trade Directory Entries** Name: S L M Consultants Location: 38, Fairhazel Gardens, London, NW6 3SJ Classification: Testing, Inspection & Calibration Equipment Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	929	-	526176 184308
104	**Contemporary Trade Directory Entries** Name: The Studio Location: 170, Regents Park Road, London, NW1 8XN Classification: Perfume Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	937	-	527946 184141
104	**Contemporary Trade Directory Entries** Name: P H Factor Location: 172, Regents Park Road, London, NW1 8XN Classification: Toiletries **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	941	-	527949 184145

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
105	**Contemporary Trade Directory Entries** Name: Robert Dyas Ltd Location: 183, Finchley Road, London, NW3 6LB Classification: Hardware **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	944	-	526368 184568
105	**Contemporary Trade Directory Entries** Name: H Khan Location: 17, Goldhurst Terrace, London, NW6 3HX Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	954	-	526333 184546
105	**Contemporary Trade Directory Entries** Name: Silk Dry Cleaner Location: 17, Goldhurst Terrace, London, NW6 3HX Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	954	-	526333 184546
105	**Contemporary Trade Directory Entries** Name: Silk Dry Cleaning Location: 17, Goldhurst Terrace, London, NW6 3HX Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NW (NW)	954	-	526333 184546
105	**Contemporary Trade Directory Entries** Name: Snappy Snaps Location: 189, Finchley Road, London, NW3 6LB Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	956	-	526365 184581
106	**Contemporary Trade Directory Entries** Name: Perfect Dry Cleaners Location: 55, Abbey Road, London, NW8 0AD Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A12SW (W)	945	-	526067 183581
107	**Contemporary Trade Directory Entries** Name: Nice & Clean London Ltd Location: 110 Finchley Road, London, NW3 5JJ Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	962	-	526395 184617
107	**Contemporary Trade Directory Entries** Name: Raniar Ltd Location: Charles House 108-110, Finchley Road, London, NW3 5JJ Classification: Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	963	-	526394 184617
107	**Contemporary Trade Directory Entries** Name: Custom Made Furniture Location: Barkat House, 116-118, Finchley Road, London, NW3 5HT Classification: Furniture Manufacturers - Home & Office **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	997	-	526376 184647
107	**Contemporary Trade Directory Entries** Name: Cross Weir Ltd Location: Barkat House, 116-118, Finchley Road, London, NW3 5HT Classification: Valve Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	997	-	526376 184647
108	**Contemporary Trade Directory Entries** Name: Carlina Carr Location: 29a, Greencroft Gardens, London, NW6 3LN Classification: Telecommunications Equipment & Systems **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	968	-	526188 184398
109	**Contemporary Trade Directory Entries** Name: Gus Davies Location: 67, Abbey Road, London, NW8 0AE Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	974	-	526028 183617

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	**Contemporary Trade Directory Entries** Name: Browns Fireplaces Location: 81, Abbey Road, LONDON, NW8 0AE Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (W)	996	-	525999 183649
110	**Contemporary Trade Directory Entries** Name: Cleaners Of Camden Location: 34, Primrose Gardens, London, NW3 4TN Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	979	-	527485 184753
111	**Fuel Station Entries** Name: Boundary Road Service Station Location: 150, Loudon Road , St Johns Wood , London, Inner London, NW8 0DH Brand: Total Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Automatically positioned to the address	A12NE (W)	568	-	526423 183961
112	**Fuel Station Entries** Name: Loudon Road Service Station Location: 21a, Loudon Road , St Johns Wood , London, Inner London, NW8 0NB Brand: Unbranded Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A12SE (W)	627	-	526375 183661
113	**Fuel Station Entries** Name: Mfg Lords Location: 21-41, Wellington Road , St Johns Wood , London, Inner London, NW8 9SQ Brand: BP Premises Type: Petrol Station **Status: Open** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	746	-	526864 183080
114	**Fuel Station Entries** Name: Hampstead Service Station Location: 104a, Finchley Road , Hampstead , London, Inner London, NW3 5EY Brand: BP Premises Type: Petrol Station **Status: Open** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	865	-	526471 184554
115	**Points of Interest - Commercial Services** Name: kar-dok.com Location: 97 Avenue Road, London, NW3 5EJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	417	9	526723 184178
115	**Points of Interest - Commercial Services** Name: Golf Doktor Location: 96 Regency Pde, Finchley Rd, London, NW3 5EG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13NW (NW)	431	9	526693 184165
115	**Points of Interest - Commercial Services** Name: Kar Dok Location: Regency Service Station 96, Finchley Road, London, NW3 5EL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SW (NW)	454	9	526690 184196
116	**Points of Interest - Commercial Services** Name: Lions Gate Location: 58 Acacia Road, London, NW8 6AG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NW (SW)	460	9	526819 183393
117	**Points of Interest - Commercial Services** Name: Yemen Gulf Line Location: Prince Albert House 2, Kingsmill Terrace, London, NW8 6BN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NW (S)	565	9	526893 183259

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
118	**Points of Interest - Commercial Services** Name: Atton Fleet Care Ltd Location: 45 Quickswood, London, NW3 3SA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SW (NE)	586	9	527433 184308
119	**Points of Interest - Commercial Services** Name: Thorne Henderson Location: 79 Loudoun Road, London, NW8 0DQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12NE (W)	651	9	526346 183997
120	**Points of Interest - Commercial Services** Name: C D Location: Prince Albert Road, London, NW8 7EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	675	9	527245 183177
120	**Points of Interest - Commercial Services** Name: Oslo Court Garage Location: Prince Albert Road, London, NW8 7EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	675	9	527245 183177
120	**Points of Interest - Commercial Services** Name: C D Carriage Co Location: Prince Albert Road, London, NW8 7EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	675	9	527245 183177
120	**Points of Interest - Commercial Services** Name: Oslo Court Garage Location: Prince Albert Road, London, NW8 7EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	675	9	527245 183177
121	**Points of Interest - Commercial Services** Name: Speedway Autocare Location: 1 Northways Parade, London, NW3 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	731	9	526596 184482
121	**Points of Interest - Commercial Services** Name: Speedway Autocare Ltd Location: 1 Northways Parade, London, NW3 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	731	9	526596 184482
121	**Points of Interest - Commercial Services** Name: Speedway Location: 1 Northways Parade, London, NW3 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	731	9	526596 184482
121	**Points of Interest - Commercial Services** Name: Volvo Cars London Location: 1a Northways Parade, London, NW3 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SE (NW)	746	9	526584 184491
122	**Points of Interest - Commercial Services** Name: Blue Team Location: 5-6 Eton Garages, Lambolle Place, London, NW3 4PE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A18NE (NE)	741	9	527336 184562
122	**Points of Interest - Commercial Services** Name: Hampstead Motor Services UK Ltd Location: 4 Lambolle Place, London, NW3 4PD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NE (N)	752	9	527295 184591

Map ID	Details		Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Hampstead Motor Services Ltd 4 Lambolle Place, London, NW3 4PD Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (N)	753	9	527295 184591
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Autotech London Ltd 3 Lambolle Place, London, NW3 4PD Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (N)	762	9	527299 184600
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Autotech Hamstead 3 Lambolle Place, London, NW3 4PD Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (N)	762	9	527299 184600
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Camden M O T Garage 3 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	766	9	527346 184585
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Hmc Fleet Maintenance Centre 3 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	766	9	527346 184585
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Little & Pace Motors 3 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	766	9	527346 184585
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Rayden Car Repairs 17 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	768	9	527326 184596
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Rayden Car Repairs 17 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	768	9	527326 184596
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Rayden Car Repairs 17 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	768	9	527326 184596
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Belsize Automotive Repairs 3 Eton Garages, Lambolle Place, London, NW3 4PE Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (NE)	768	9	527344 184588
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Porsheworx 2 Lambolle Place, London, NW3 4PD Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (N)	769	9	527303 184607
	Points of Interest - Commercial Services					
122	Name: Location: Category: Class Code: Positional Accuracy:	Porsheworx Engineering Ltd 2 Lambolle Place, London, NW3 4PD Repair and Servicing Vehicle Repair, Testing and Servicing Positioned to address or location	A18NE (N)	770	9	527303 184607

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
122	**Points of Interest - Commercial Services** Name: Kassbet Ltd Location: 2-3 Eton Garages, Lambolle Pl, London, NW3 4PE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NE (NE)	774	9	527349 184592
122	**Points of Interest - Commercial Services** Name: Little & Pace Motors Location: 2-3 Eton Garages, Lambolle Pl, London, NW3 4PE Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18NE (NE)	776	9	527346 184596
123	**Points of Interest - Commercial Services** Name: Modern Motors Ltd Location: 95 Adelaide Rd, London, NW3 3QB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SW (NE)	747	9	527628 184339
123	**Points of Interest - Commercial Services** Name: Modern Motors Ltd Location: 95 Adelaide Road, London, NW3 3XX Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19SW (NE)	747	9	527628 184339
124	**Points of Interest - Commercial Services** Name: St Johns Wood Autos Location: Abbey Road, London, NW8 9DN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	798	9	526443 183244
124	**Points of Interest - Commercial Services** Name: St Johns Wood Autos Location: Langford Place, Basement 0f 22 Abbey Road, Westminster, London, NW8 9DN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A7NE (SW)	812	9	526419 183246
125	**Points of Interest - Commercial Services** Name: Schmitt Automobile Services Ltd Location: 109 Goldhurst Terrace, London, NW6 3HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	800	9	526282 184233
125	**Points of Interest - Commercial Services** Name: Schmitt Automobile Services Ltd Location: 109 Goldhurst Terrace, London, NW6 3HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17SW (NW)	800	9	526282 184233
126	**Points of Interest - Commercial Services** Name: Haywood Motors (Fleetmead) Location: 23A Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184663
126	**Points of Interest - Commercial Services** Name: Belsize Motors Location: 23 Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184662
126	**Points of Interest - Commercial Services** Name: Haywood Motors Location: A 23 Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184663
126	**Points of Interest - Commercial Services** Name: Belsize Motors Location: A 23 Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184663

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
126	**Points of Interest - Commercial Services** Name: Haywood Motors Location: 23A Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184662
126	**Points of Interest - Commercial Services** Name: Belsize Motors Location: 23a Lambolle Place, London, NW3 4PG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (NE)	843	9	527361 184663
127	**Points of Interest - Commercial Services** Name: Shakti Veda Spa Location: 75 Abbey Road, London, NW8 0AE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12SW (W)	988	9	526010 183634
128	**Points of Interest - Education and Health** Name: The Wellington Hospital North Building Location: 27 Circus Road, London, NW8 6PG Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A8SW (S)	695	9	526816 183144
128	**Points of Interest - Education and Health** Name: Wellington Hospital Location: 8a Wellington Place, London, NW8 9LE Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A8SW (S)	712	9	526814 183127
128	**Points of Interest - Education and Health** Name: The Wellington Hospital Location: 8a Wellington Place, London, NW8 9LE Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A8SW (S)	712	9	526814 183127
129	**Points of Interest - Education and Health** Name: Hospital of St John & St Elizabeth Location: 60 Grove End Road, London, NW8 9NH Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A7NE (SW)	714	9	526649 183196
129	**Points of Interest - Education and Health** Name: Hospital of St John & St Elizabeth Location: 60 Grove End Road, London, NW8 9NH Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A7NE (SW)	715	9	526649 183196
129	**Points of Interest - Education and Health** Name: Hospital of St John & St Elizabeth Location: 60 Grove End Road, London, NW8 9NH Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A7NE (SW)	715	9	526649 183196
130	**Points of Interest - Education and Health** Name: The Wellington Hospital Location: 8a Wellington Place, London, NW8 9LE Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A8SW (S)	826	9	526931 182989
131	**Points of Interest - Education and Health** Name: Daleham House Location: 5 Daleham Gardens, London, NW3 5BY Category: Health Practitioners and Establishments Class Code: Hospitals Positional Accuracy: Positioned to address or location	A18NW (N)	904	9	526684 184727
132	**Points of Interest - Manufacturing and Production** Name: Air Shaft Location: NW3 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	245	9	527172 184085

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
133	**Points of Interest - Manufacturing and Production** Name: Air Shaft Location: NW8 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A12SE (W)	517	9	526460 183836
134	**Points of Interest - Manufacturing and Production** Name: Shaft Location: NW6 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A17SE (NW)	621	9	526507 184242
135	**Points of Interest - Manufacturing and Production** Name: Castle Trading Wellington Building Location: 28-32 Wellington Road, London, NW8 9SP Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A8SW (S)	670	9	526904 183150
135	**Points of Interest - Manufacturing and Production** Name: Castle Trading Ltd Location: 28-32 Wellington Road, London, NW8 9SP Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A8SW (S)	670	9	526904 183150
135	**Points of Interest - Manufacturing and Production** Name: Castle M Location: 28-32 Wellington Road, London, NW8 9SP Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A8SW (S)	670	9	526904 183150
136	**Points of Interest - Manufacturing and Production** Name: Air Shaft Location: NW3 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	681	9	527585 184286
136	**Points of Interest - Manufacturing and Production** Name: Air Shaft Location: NW3 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	706	9	527623 184278
137	**Points of Interest - Manufacturing and Production** Name: Shaft Location: NW6 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A17SE (NW)	764	9	526479 184425
138	**Points of Interest - Manufacturing and Production** Name: Shaft Location: NW8 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	784	9	526920 183032
139	**Points of Interest - Manufacturing and Production** Name: Charles House Location: 108-110 Finchley Road, Camden, London, NW3 5JJ Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to address or location	A17NE (NW)	962	9	526395 184617
140	**Points of Interest - Manufacturing and Production** Name: Works Location: NW1 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SE (E)	966	9	527948 184223
140	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SE (E)	970	9	527951 184224

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
141	**Points of Interest - Public Infrastructure** Name: South Hampstead Rail Station Location: Loudoun Road, NW8 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12NE (W)	642	9	526379 184070
141	**Points of Interest - Public Infrastructure** Name: South Hampstead Station Location: Loudoun Road, NW8 Category: Public Transport, Stations and Infrastructure Class Code: Railway Stations, Junctions and Halts Positional Accuracy: Positioned to address or location	A12NE (W)	642	9	526379 184070
142	**Points of Interest - Public Infrastructure** Name: Belsize Fire Station Location: Belsize Fire Station 36, Lancaster Grove, London, NW3 4PB Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A18NE (N)	685	9	527241 184539
143	**Points of Interest - Public Infrastructure** Name: St John's Wood Police Station Location: St. Johns Wood Police Station 20 & A Half, Newcourt Street, London, NW8 7AA Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	9	527170 183087
143	**Points of Interest - Public Infrastructure** Name: St Johns Wood Police Station Location: St. Johns Wood Police Station 20 & A Hal, Newcourt Street, London, NW8 7AA Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	9	527170 183087
143	**Points of Interest - Public Infrastructure** Name: Metroploitan Police Service St Johns Wood Location: St. Johns Wood Police Station & A Half 20, Newcourt Street, London, NW8 7AA Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	9	527170 183087
144	**Points of Interest - Public Infrastructure** Name: M R H Service Station Location: 21-41 Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	745	9	526868 183080
144	**Points of Interest - Public Infrastructure** Name: BP Service Station Location: Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	745	9	526869 183080
144	**Points of Interest - Public Infrastructure** Name: Wellington Service Station Location: Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	746	9	526864 183080
144	**Points of Interest - Public Infrastructure** Name: BP Service Station Location: Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	746	9	526864 183080
144	**Points of Interest - Public Infrastructure** Name: BP Connect Location: Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	746	9	526864 183080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	**Points of Interest - Public Infrastructure** Name: Wellington Service Station Location: Cavendishhouse, 21, Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	746	9	526864 183080
144	**Points of Interest - Public Infrastructure** Name: Mfg Lords Location: Wellington Road, London, NW8 9SQ Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SW (S)	746	9	526864 183080
145	**Points of Interest - Public Infrastructure** Name: BP Harmony Hampstead Service Centre Location: 104a Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
145	**Points of Interest - Public Infrastructure** Name: BP Connect Location: 104a Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
145	**Points of Interest - Public Infrastructure** Name: BP Service Station Location: 104a Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
145	**Points of Interest - Public Infrastructure** Name: BP Service Station Location: 104a Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
145	**Points of Interest - Public Infrastructure** Name: Hampstead Service Centre Location: A 104 Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
145	**Points of Interest - Public Infrastructure** Name: Hampstead Service Station Location: 104a Finchley Road, London, NW3 5EY Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A17NE (NW)	865	9	526471 184554
146	**Points of Interest - Recreational and Environmental** Name: Play Area Location: NW3 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	379	9	527029 184268
147	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	419	9	527177 183426
147	**Points of Interest - Recreational and Environmental** Name: Playground Location: St John'S Wood Terrace, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	419	9	527177 183426
147	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	455	9	527195 183394

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
147	**Points of Interest - Recreational and Environmental** Name: Playground Location: Allitsen Road, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	457	9	527204 183396
148	**Points of Interest - Recreational and Environmental** Name: Playground Location: Avenue Road, NW3 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A18SW (NW)	432	9	526777 184244
148	**Points of Interest - Recreational and Environmental** Name: Adventure Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SW (NW)	449	9	526804 184281
149	**Points of Interest - Recreational and Environmental** Name: Playground Location: Fellows Road, NW3 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	518	9	527238 184361
149	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	519	9	527238 184362
150	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	524	9	526558 184152
150	**Points of Interest - Recreational and Environmental** Name: Playground Location: Hilgrove Road, NW6 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	524	9	526558 184152
150	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	541	9	526535 184149
150	**Points of Interest - Recreational and Environmental** Name: Playground Location: Hilgrove Road, NW6 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NE (NW)	541	9	526535 184149
151	**Points of Interest - Recreational and Environmental** Name: Play Area Location: NW3 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	576	9	527366 184353
152	**Points of Interest - Recreational and Environmental** Name: Play Area Location: NW3 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	655	9	527528 184313
153	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A17SE (NW)	745	9	526477 184395

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
153	**Points of Interest - Recreational and Environmental** Name: Playground Location: Harben Road, NW6 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A17SE (NW)	748	9	526479 184402
154	**Points of Interest - Recreational and Environmental** Name: Play Area Location: NW1 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	761	9	527409 183162
155	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NE (NE)	768	9	527756 184168
156	**Points of Interest - Recreational and Environmental** Name: Play Area Location: Loudoun Road, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A7NE (SW)	768	9	526536 183207
156	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A7NE (SW)	770	9	526536 183205
157	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	806	9	526174 183909
157	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Rowley Way, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	806	9	526174 183909
157	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	826	9	526153 183897
157	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Rowley Way, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12NW (W)	826	9	526153 183896
158	**Points of Interest - Recreational and Environmental** Name: Playground Location: Wellington Road, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A8SE (S)	864	9	527048 182948
158	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	873	9	527050 182939
159	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	883	9	527902 183631

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
159	**Points of Interest - Recreational and Environmental** Name: Playground Location: Prince Albert Road, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	883	9	527902 183631
160	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	943	9	526034 183829
160	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Rowley Way, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A12SW (W)	944	9	526033 183830
160	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	945	9	526032 183848
160	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Rowley Way, NW8 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A12SW (W)	945	9	526032 183848
161	**Points of Interest - Recreational and Environmental** Name: Play Area Location: NW1 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A14NE (E)	983	9	528013 184066
162	**Underground Electrical Cables** Unique Feature Identifier: 10005742 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13NW (NW)	6	10	526996 183869
163	**Underground Electrical Cables** Unique Feature Identifier: 10005962 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13NW (NW)	6	10	526996 183870
164	**Underground Electrical Cables** Unique Feature Identifier: 10005967 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13SW (W)	10	10	526972 183847
165	**Underground Electrical Cables** Unique Feature Identifier: 10007952 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13SW (W)	10	10	526973 183847
166	**Underground Electrical Cables** Unique Feature Identifier: 10005960 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13NW (N)	220	10	526965 184102

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
167	**Underground Electrical Cables** Unique Feature Identifier: 10006130 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13NW (N)	220	10	526965 184102
168	**Underground Electrical Cables** Unique Feature Identifier: 10006069 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13SW (SW)	276	10	526826 183604
169	**Underground Electrical Cables** Unique Feature Identifier: 10005937 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A13SW (SW)	277	10	526825 183604
170	**Underground Electrical Cables** Unique Feature Identifier: 10006209 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A14NW (E)	385	10	527433 183910
171	**Underground Electrical Cables** Unique Feature Identifier: 10008209 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A14NW (E)	394	10	527443 183898
172	**Underground Electrical Cables** Unique Feature Identifier: 10007679 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A14NW (E)	395	10	527444 183903
173	**Underground Electrical Cables** Unique Feature Identifier: 10008201 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A14NW (E)	419	10	527469 183875
174	**Underground Electrical Cables** Unique Feature Identifier: 10006068 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A8NW (S)	501	10	526811 183352
175	**Underground Electrical Cables** Unique Feature Identifier: 10007707 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A8NW (S)	501	10	526811 183352
176	**Underground Electrical Cables** Unique Feature Identifier: 10005416 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18SW (N)	527	10	526801 184367

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
177	**Underground Electrical Cables** Unique Feature Identifier: 10005934 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18SW (N)	527	10	526801 184366
178	**Underground Electrical Cables** Unique Feature Identifier: 10008256 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A14NW (NE)	530	10	527524 184103
179	**Underground Electrical Cables** Unique Feature Identifier: 10005732 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A14NW (NE)	531	10	527528 184098
180	**Underground Electrical Cables** Unique Feature Identifier: 10007708 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18SW (NW)	576	10	526777 184410
181	**Underground Electrical Cables** Unique Feature Identifier: 10005918 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18SW (NW)	576	10	526777 184409
182	**Underground Electrical Cables** Unique Feature Identifier: 10006210 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A14SW (E)	579	10	527618 183750
183	**Underground Electrical Cables** Unique Feature Identifier: 10005733 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A14SW (E)	585	10	527625 183759
184	**Underground Electrical Cables** Unique Feature Identifier: 10008141 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A14SW (SE)	629	10	527616 183589
185	**Underground Electrical Cables** Unique Feature Identifier: 10006260 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A19SW (NE)	646	10	527518 184310
186	**Underground Electrical Cables** Unique Feature Identifier: 10008222 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	657	10	527460 183330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
187	**Underground Electrical Cables** Unique Feature Identifier: 10007875 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	658	10	527460 183330
188	**Underground Electrical Cables** Unique Feature Identifier: 10007835 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	660	10	527460 183326
189	**Underground Electrical Cables** Unique Feature Identifier: 10005731 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A19SW (NE)	660	10	527518 184330
190	**Underground Electrical Cables** Unique Feature Identifier: 10008290 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A9NW (SE)	662	10	527461 183325
191	**Underground Electrical Cables** Unique Feature Identifier: 10006662 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	693	10	527575 183407
192	**Underground Electrical Cables** Unique Feature Identifier: 10006618 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	713	10	527374 183197
193	**Underground Electrical Cables** Unique Feature Identifier: 10008027 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A14SE (E)	725	10	527723 183594
194	**Underground Electrical Cables** Unique Feature Identifier: 10006670 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A9NW (SE)	728	10	527645 183445
195	**Underground Electrical Cables** Unique Feature Identifier: 10005832 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A8SE (SE)	761	10	527339 183124
196	**Underground Electrical Cables** Unique Feature Identifier: 10005919 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18NW (N)	796	10	526834 184662

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
197	**Underground Electrical Cables** Unique Feature Identifier: 10006131 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A18NW (N)	796	10	526834 184663
198	**Underground Electrical Cables** Unique Feature Identifier: 10007705 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A7SE (SW)	831	10	526582 183099
199	**Underground Electrical Cables** Unique Feature Identifier: 10005936 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 27th October 2017	A7SE (SW)	832	10	526582 183099
200	**Underground Electrical Cables** Unique Feature Identifier: 10005946 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 3rd May 2018	A19SE (NE)	848	10	527720 184385
201	**Underground Electrical Cables** Unique Feature Identifier: 10006259 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 23rd March 2018	A19SE (NE)	859	10	527719 184405
202	**Underground Electrical Cables** Unique Feature Identifier: 10005421 Cable Status: Electrically Decommissioned Cable Type: Alternating Current Record Last Updated: 23rd March 2018	A19SE (NE)	860	10	527719 184405
203	**Underground Electrical Cables** Unique Feature Identifier: 10005730 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A19SE (NE)	878	10	527732 184418
204	**Underground Electrical Cables** Unique Feature Identifier: 10005930 Cable Status: Electrically Decommissioned Cable Type: Not Supplied Record Last Updated: 27th February 2021	A8SE (S)	896	10	527296 182962
205	**Underground Electrical Cables** Unique Feature Identifier: 10005834 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A14SE (E)	930	10	527931 183564
206	**Underground Electrical Cables** Unique Feature Identifier: 10006211 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A8SE (S)	966	10	527293 182887

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
207	**Underground Electrical Cables** Unique Feature Identifier: 10006988 Cable Status: Commissioned Cable Type: Alternating Current Record Last Updated: 26th October 2017	A14SE (E)	995	10	528009 183598

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
208	**Local Nature Reserves** Name: Adelaide Multiple Area: N Area (m2): 2767.76 Source: Natural England Designation Date: Not Supplied	A19SW (NE)	680	11	527576 184295
209	**Local Nature Reserves** Name: St Johns Wood Church Grounds Multiple Area: N Area (m2): 19876.67 Source: Natural England Designation Date: 1st January 1998	A8SE (S)	758	11	527088 183057

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Environment Agency - Head Office	June 2020	Annually
London Borough of Camden - Pollution Projects Team	March 2013	Annual Rolling Update
London Borough of Lambeth - Environmental Health Department	November 2014	Annual Rolling Update
London Borough of Hackney - Environmental Health Department	October 2017	Annual Rolling Update
Royal Borough of Kensington And Chelsea - Environmental Services	October 2017	Annual Rolling Update
City of London - Environmental Health Department	September 2017	Annual Rolling Update
London Borough of Barnet - Environmental Health Department	September 2017	Annual Rolling Update
London Borough of Brent - Environmental Health Department	September 2017	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	September 2017	Annual Rolling Update
London Borough of Hammersmith And Fulham - Environmental Health Department	September 2017	Annual Rolling Update
London Borough of Haringey - Planning and Environmental Health	September 2017	Annual Rolling Update
London Borough of Islington - Public Protection	September 2017	Annual Rolling Update
London Borough of Tower Hamlets - Environmental Health Department	September 2017	Annual Rolling Update
London Borough of Wandsworth - Environmental Health Department	September 2017	Annual Rolling Update
Westminster City Council - Environmental Health Department	September 2017	Annual Rolling Update
Discharge Consents		
Environment Agency - Thames Region	July 2021	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Thames Region	March 2013	
Integrated Pollution Controls		
Environment Agency - Thames Region	January 2009	
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - Kent & South London Area	July 2021	Quarterly
Environment Agency - South East Region - North East Thames Area	July 2021	Quarterly
Environment Agency - Thames Region	July 2021	Quarterly
Local Authority Integrated Pollution Prevention And Control		
City of London - Environmental Health Department	August 2014	Variable
London Borough of Wandsworth - Environmental Health Department	August 2014	Variable
London Borough of Barnet - Environmental Health Department	December 2014	Variable
London Borough of Islington - Environmental Health Department	January 2015	Variable
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Variable
London Borough of Hackney - Environmental Health Department	July 2015	Variable
London Borough of Haringey - Planning and Environmental Health	June 2014	Variable
London Borough of Hammersmith And Fulham - Environmental Health Department	March 2014	Variable
London Borough of Brent - Environmental Health Department	March 2016	Variable
London Borough of Lambeth - Environmental Health Department	May 2016	Variable
Westminster City Council - Environmental Health Department	November 2015	Variable
London Borough of Camden - Pollution Projects Team	October 2014	Variable
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Variable
London Port Health Authority - Environmental Services	October 2014	Variable
Royal Borough of Kensington And Chelsea - Environmental Health Department	September 2014	Variable

Agency & Hydrological	Version	Update Cycle
Local Authority Pollution Prevention and Controls		
London Borough of Wandsworth - Environmental Health Department	August 2014	Annual Rolling Update
City of London - Environmental Health Department	August 2014	Not Applicable
London Borough of Barnet - Environmental Health Department	December 2014	Annual Rolling Update
London Borough of Islington - Environmental Health Department	January 2015	Annual Rolling Update
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Annual Rolling Update
London Borough of Hackney - Environmental Health Department	July 2015	Annual Rolling Update
London Borough of Haringey - Planning and Environmental Health	June 2014	Annual Rolling Update
London Borough of Hammersmith And Fulham - Environmental Health Department	March 2014	Annual Rolling Update
London Borough of Brent - Environmental Health Department	March 2016	Annual Rolling Update
London Borough of Lambeth - Environmental Health Department	May 2016	Annual Rolling Update
Westminster City Council - Environmental Health Department	November 2015	Not Applicable
London Borough of Camden - Pollution Projects Team	October 2014	Annual Rolling Update
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Annual Rolling Update
London Port Health Authority - Environmental Services	October 2014	Annual Rolling Update
London Borough of Waltham Forest - Environmental Health Department	September 2014	Annual Rolling Update
Royal Borough of Kensington And Chelsea - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
City of London - Environmental Health Department	August 2014	Variable
London Borough of Wandsworth - Environmental Health Department	August 2014	Variable
London Borough of Barnet - Environmental Health Department	December 2014	Variable
London Borough of Islington - Environmental Health Department	January 2015	Variable
London Borough of Ealing - Environmental Health and Trading Standards Division	July 2015	Variable
London Borough of Hackney - Environmental Health Department	July 2015	Variable
London Borough of Haringey - Planning and Environmental Health	June 2014	Variable
London Borough of Hammersmith And Fulham - Environmental Health Department	March 2014	Variable
London Borough of Brent - Environmental Health Department	March 2016	Variable
London Borough of Lambeth - Environmental Health Department	May 2016	Variable
Westminster City Council - Environmental Health Department	November 2015	Variable
London Borough of Camden - Pollution Projects Team	October 2014	Variable
London Borough of Tower Hamlets - Environmental Health Department	October 2014	Variable
London Port Health Authority - Environmental Services	October 2014	Variable
Royal Borough of Kensington And Chelsea - Environmental Health Department	September 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	August 2021	
Pollution Incidents to Controlled Waters		
Environment Agency - Thames Region	September 1999	
Prosecutions Relating to Authorised Processes		
Environment Agency - Thames Region	July 2015	
Prosecutions Relating to Controlled Waters		
Environment Agency - Thames Region	March 2013	
Registered Radioactive Substances		
Environment Agency - Thames Region	June 2016	Annually
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	April 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	April 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - South East Region - Kent & South London Area	July 2021	Quarterly
Environment Agency - South East Region - North East Thames Area	July 2021	Quarterly
Environment Agency - Thames Region - North East Area	July 2021	Quarterly
Environment Agency - Thames Region - South East Area	July 2021	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Abstractions Environment Agency - Thames Region	July 2021	Quarterly
Water Industry Act Referrals Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	May 2021	Bi-Annually
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	September 2021	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	September 2021	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	September 2021	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	September 2021	Quarterly
Flood Defences Environment Agency - Head Office	September 2021	Quarterly
OS Water Network Lines Ordnance Survey	July 2021	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	May 2018	Annually
Surface Water Suitability Environment Agency - Head Office	February 2016	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	November 2002	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	May 2021	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Thames Region	January 2009	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - Kent & South London Area	July 2021	Quarterly
Environment Agency - South East Region - North East Thames Area	July 2021	Quarterly
Environment Agency - Thames Region - North East Area	July 2021	Quarterly
Environment Agency - Thames Region - South East Area	July 2021	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - Kent & South London Area	July 2021	Quarterly
Environment Agency - South East Region - North East Thames Area	July 2021	Quarterly
Environment Agency - Thames Region - North East Area	July 2021	Quarterly
Environment Agency - Thames Region - South East Area	July 2021	Quarterly
Local Authority Landfill Coverage		
City of London - Environmental Health Department	February 2003	Not Applicable
London Borough of Barnet	February 2003	Not Applicable
London Borough of Brent - Environmental Health Department	February 2003	Not Applicable
London Borough of Camden	February 2003	Not Applicable
London Borough of Ealing	February 2003	Not Applicable
London Borough of Hackney	February 2003	Not Applicable
London Borough of Hammersmith And Fulham - Environmental Health Department	February 2003	Not Applicable
London Borough of Haringey - Planning Department	February 2003	Not Applicable
London Borough of Islington - Environmental Health Department	February 2003	Not Applicable
London Borough of Lambeth - Environmental Health Department	February 2003	Not Applicable
London Borough of Tower Hamlets - Environmental Health Department	February 2003	Not Applicable
London Borough of Wandsworth - Environmental Health Department	February 2003	Not Applicable
Royal Borough of Kensington And Chelsea	February 2003	Not Applicable
Westminster City Council - Environmental Health Department	February 2003	Not Applicable
Local Authority Recorded Landfill Sites		
City of London - Environmental Health Department	October 2018	
London Borough of Barnet	October 2018	
London Borough of Brent - Environmental Health Department	October 2018	
London Borough of Camden	October 2018	
London Borough of Ealing	October 2018	
London Borough of Hackney	October 2018	
London Borough of Hammersmith And Fulham - Environmental Health Department	October 2018	
London Borough of Haringey - Planning Department	October 2018	
London Borough of Islington - Environmental Health Department	October 2018	
London Borough of Lambeth - Environmental Health Department	October 2018	
London Borough of Tower Hamlets - Environmental Health Department	October 2018	
London Borough of Wandsworth - Environmental Health Department	October 2018	
Royal Borough of Kensington And Chelsea	October 2018	
Westminster City Council - Environmental Health Department	October 2018	
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	
Registered Landfill Sites		
Environment Agency - Thames Region - North East Area	March 2006	Not Applicable
Environment Agency - Thames Region - South East Area	March 2006	Not Applicable

Waste	Version	Update Cycle
Registered Waste Transfer Sites		
Environment Agency - Thames Region - North East Area	April 2018	
Environment Agency - Thames Region - South East Area	April 2018	
Registered Waste Treatment or Disposal Sites		
Environment Agency - Thames Region - North East Area	June 2015	
Environment Agency - Thames Region - South East Area	June 2015	
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	August 2001	
Planning Hazardous Substance Enforcements		
London Borough of Hammersmith And Fulham - Environmental Protection	August 2015	Variable
City of London	February 2016	Variable
London Borough of Barnet	February 2016	Variable
London Borough of Camden	February 2016	Variable
London Borough of Ealing	February 2016	Variable
London Borough of Hackney	February 2016	Variable
London Borough of Haringey	February 2016	Variable
London Borough of Lambeth - Planning Department	February 2016	Variable
London Borough of Tower Hamlets	February 2016	Variable
London Borough of Wandsworth - Technical Services	February 2016	Variable
Royal Borough of Kensington And Chelsea	February 2016	Variable
Westminster City Council	February 2016	Variable
London Port Health Authority - Environmental Services	January 2008	Annual Rolling Update
London Borough of Brent	January 2016	Variable
London Borough of Islington	October 2015	Variable
Planning Hazardous Substance Consents		
London Borough of Hammersmith And Fulham - Environmental Protection	August 2015	Variable
City of London	February 2016	Variable
London Borough of Barnet	February 2016	Variable
London Borough of Camden	February 2016	Variable
London Borough of Ealing	February 2016	Variable
London Borough of Hackney	February 2016	Variable
London Borough of Haringey	February 2016	Variable
London Borough of Lambeth - Planning Department	February 2016	Variable
London Borough of Tower Hamlets	February 2016	Variable
London Borough of Wandsworth - Technical Services	February 2016	Variable
Royal Borough of Kensington And Chelsea	February 2016	Variable
Westminster City Council	February 2016	Variable
London Port Health Authority - Environmental Services	January 2008	Annual Rolling Update
London Borough of Brent	January 2016	Variable
London Borough of Islington	October 2015	Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	December 2015	Annually
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	May 2021	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	December 2015	Annually
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	December 2015	Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	As notified
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	Annually

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

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	February 2021	Bi-Annually
Areas of Adopted Green Belt		
City of London	October 2020	Quarterly
London Borough of Barnet	October 2020	Quarterly
London Borough of Brent	October 2020	Quarterly
London Borough of Camden	October 2020	Quarterly
London Borough of Ealing	October 2020	Quarterly
London Borough of Hackney	October 2020	Quarterly
London Borough of Hammersmith And Fulham - Environment Department	October 2020	Quarterly
London Borough of Haringey	October 2020	Quarterly
London Borough of Islington	October 2020	Quarterly
London Borough of Lambeth	October 2020	Quarterly
London Borough of Tower Hamlets	October 2020	Quarterly
London Borough of Wandsworth - Technical Services	October 2020	Quarterly
Royal Borough of Kensington And Chelsea	October 2020	Quarterly
Westminster City Council	October 2020	Quarterly
Areas of Unadopted Green Belt		
City of London	October 2020	Quarterly
London Borough of Barnet	October 2020	Quarterly
London Borough of Brent	October 2020	Quarterly
London Borough of Camden	October 2020	Quarterly
London Borough of Ealing	October 2020	Quarterly
London Borough of Hackney	October 2020	Quarterly
London Borough of Hammersmith And Fulham - Environment Department	October 2020	Quarterly
London Borough of Haringey	October 2020	Quarterly
London Borough of Islington	October 2020	Quarterly
London Borough of Lambeth	October 2020	Quarterly
London Borough of Tower Hamlets	October 2020	Quarterly
London Borough of Wandsworth - Technical Services	October 2020	Quarterly
Royal Borough of Kensington And Chelsea	October 2020	Quarterly
Westminster City Council	October 2020	Quarterly
Areas of Outstanding Natural Beauty		
Natural England	January 2021	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	February 2021	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	January 2021	Bi-Annually
National Parks		
Natural England	February 2018	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2016	Not Applicable
Nitrate Vulnerable Zones		
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	April 2016	
Environment Agency - Head Office	June 2017	Bi-Annually
Ramsar Sites		
Natural England	August 2020	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Sites of Special Scientific Interest Natural England	February 2021	Bi-Annually
Special Areas of Conservation Natural England	July 2020	Bi-Annually
Special Protection Areas Natural England	February 2021	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Stantec UK Ltd	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Westminster City Council - Environmental Health Department** Council House, Marylebone Road, London, NW1 5PT	Telephone: 020 7641 1317 Fax: 020 7641 1142 Website: www.westminster.gov.uk
4	**London Borough of Waltham Forest - Environmental Health Department** 154 Blackhorse Road, Walthamstow, London, E17 6NW	Telephone: 020 8496 3000 Fax: 0181 524 8960 Website: www.lbwf.gov.uk
5	**London Borough of Camden - Pollution Projects Team** Seventh Floor, Town Hall Extension, Argyle Street, London, WC1H 8EQ	Telephone: 020 7278 4444 Fax: 020 7860 5713 Website: www.camden.gov.uk
6	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
7	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
8	**London Borough of Camden** Town Hall, Judd Street, London, WC1H 9JE	Telephone: 020 7974 4444 Fax: 020 7974 6866 Email: info@camden.gov.uk Website: www.camden.gov.uk
9	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
10	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9966 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk
11	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

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

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LASI	Langley Silt Member	Clay and Silt	Not Supplied - Devensian
	LHGR	Lynch Hill Gravel Member	Sand and Gravel	Not Supplied - Wolstonian

Bedrock and Faults

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

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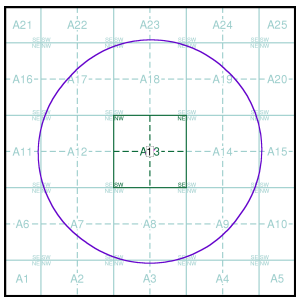
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**256**
Map Name:	**North London**
Map Date:	**2006**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A

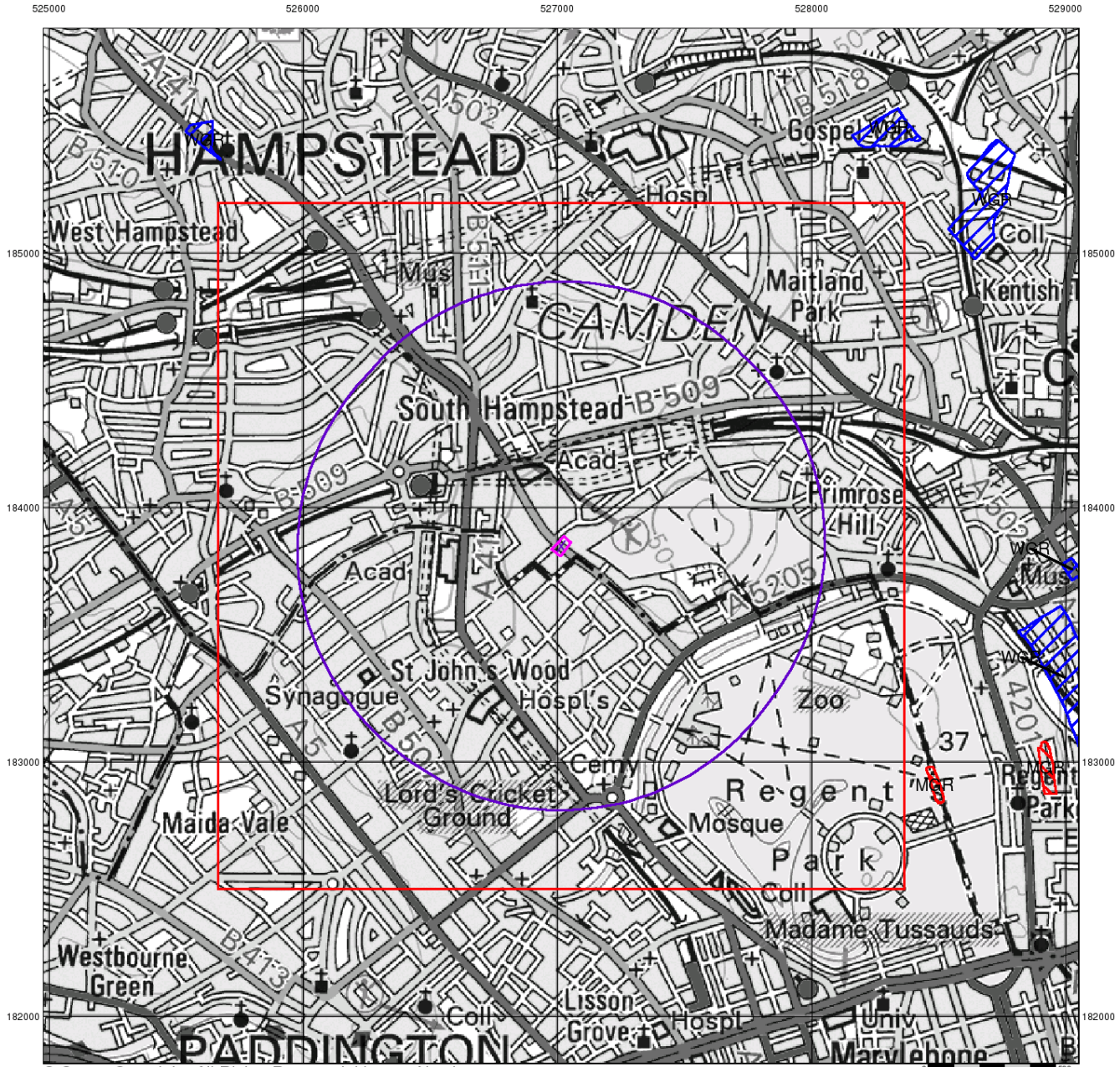


Order Details:

Order Number:	286852753_1_1
Customer Reference:	1942
National Grid Reference:	527010, 183850
Slice:	A
Site Area (Ha):	0.28
Search Buffer (m):	1000

Site Details:

52, Avenue Road, LONDON, NW8 6HP



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Artificial Ground and Landslip

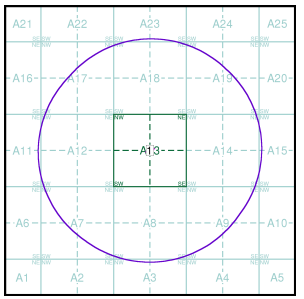
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions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

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

Order Number:	286852753_1_1
Customer Reference:	1942
National Grid Reference:	527010, 183850
Slice:	A
Site Area (Ha):	0.28
Search Buffer (m):	1000

Site Details:

52, Avenue Road, LONDON, NW8 6HP

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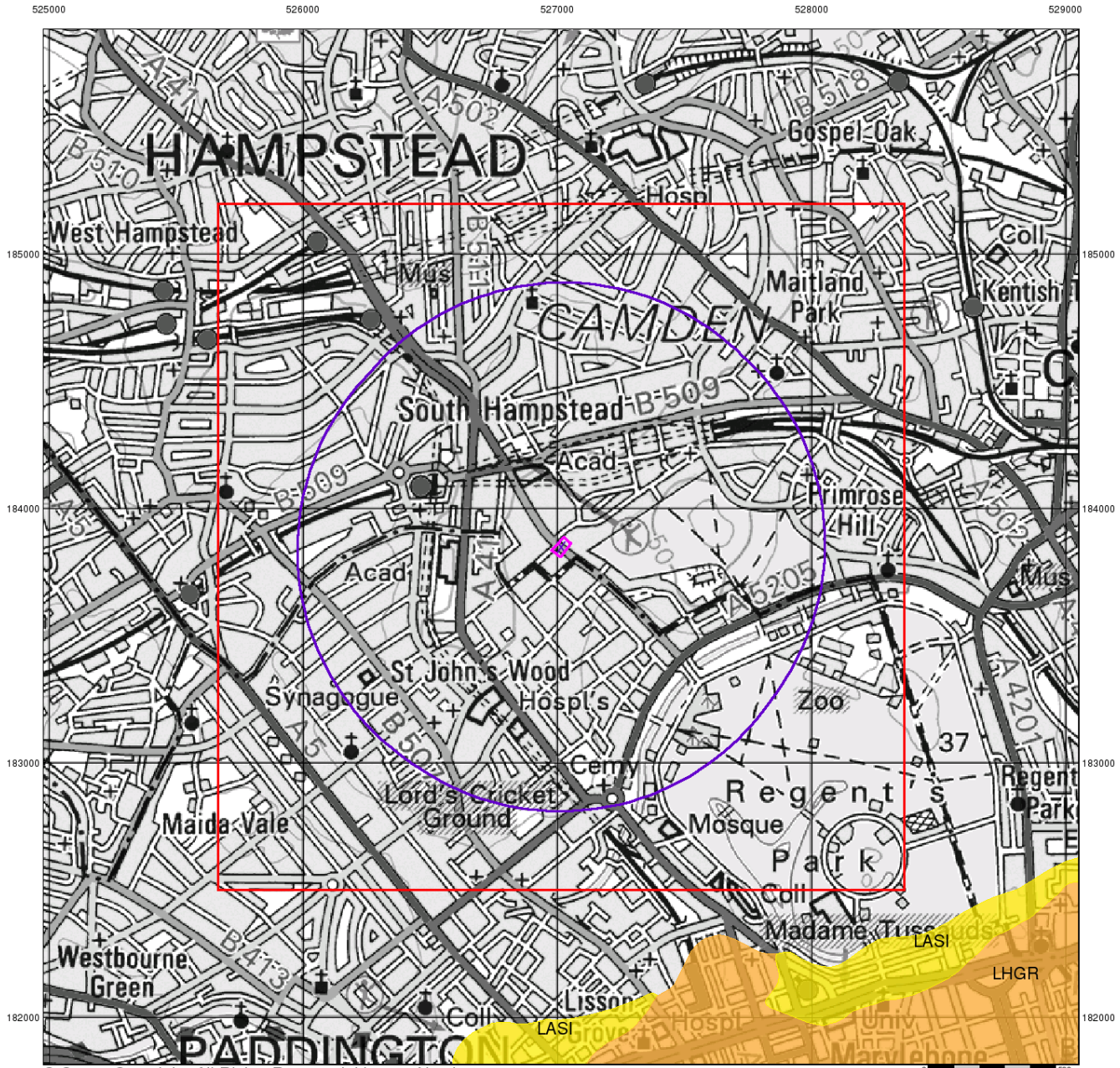
Web: www.envirocheck.co.uk



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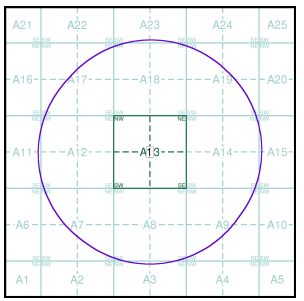
Superficial Geology

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

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

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

Superficial Geology Map - Slice A



Order Details:

Order Number:	286852753_1_1
Customer Reference:	1942
National Grid Reference:	527010, 183850
Slice:	A
Site Area (Ha):	0.28
Search Buffer (m):	1000

Site Details:

52, Avenue Road, LONDON, NW8 6HP

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Fax: 0844 844 9951
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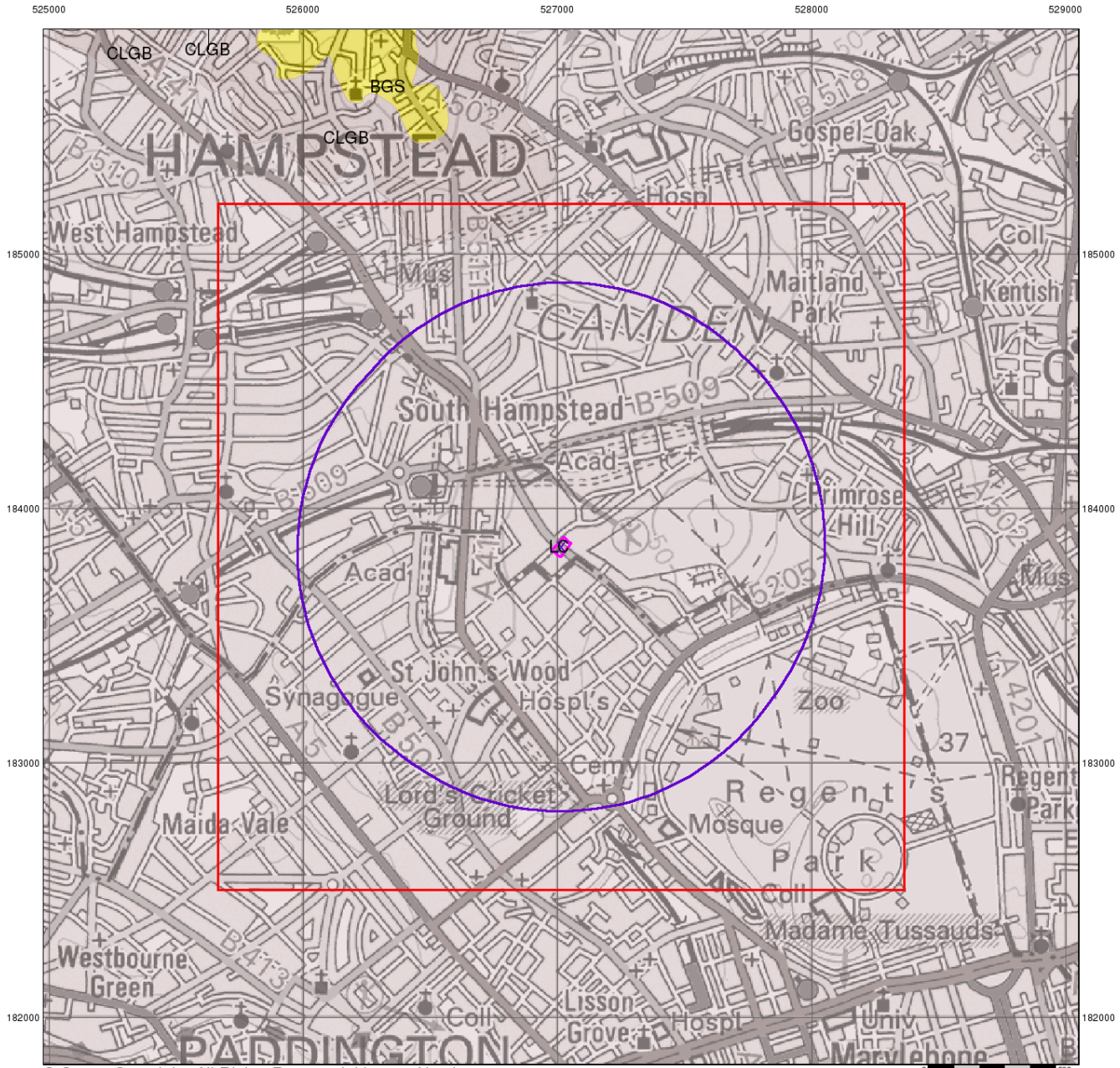

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Bedrock and Faults

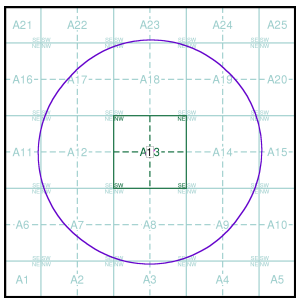
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

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

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

Bedrock and Faults Map - Slice A



Order Details:

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Customer Reference:	1942
National Grid Reference:	527010, 183850
Slice:	A
Site Area (Ha):	0.28
Search Buffer (m):	1000

Site Details:

52, Avenue Road, LONDON, NW8 6HP

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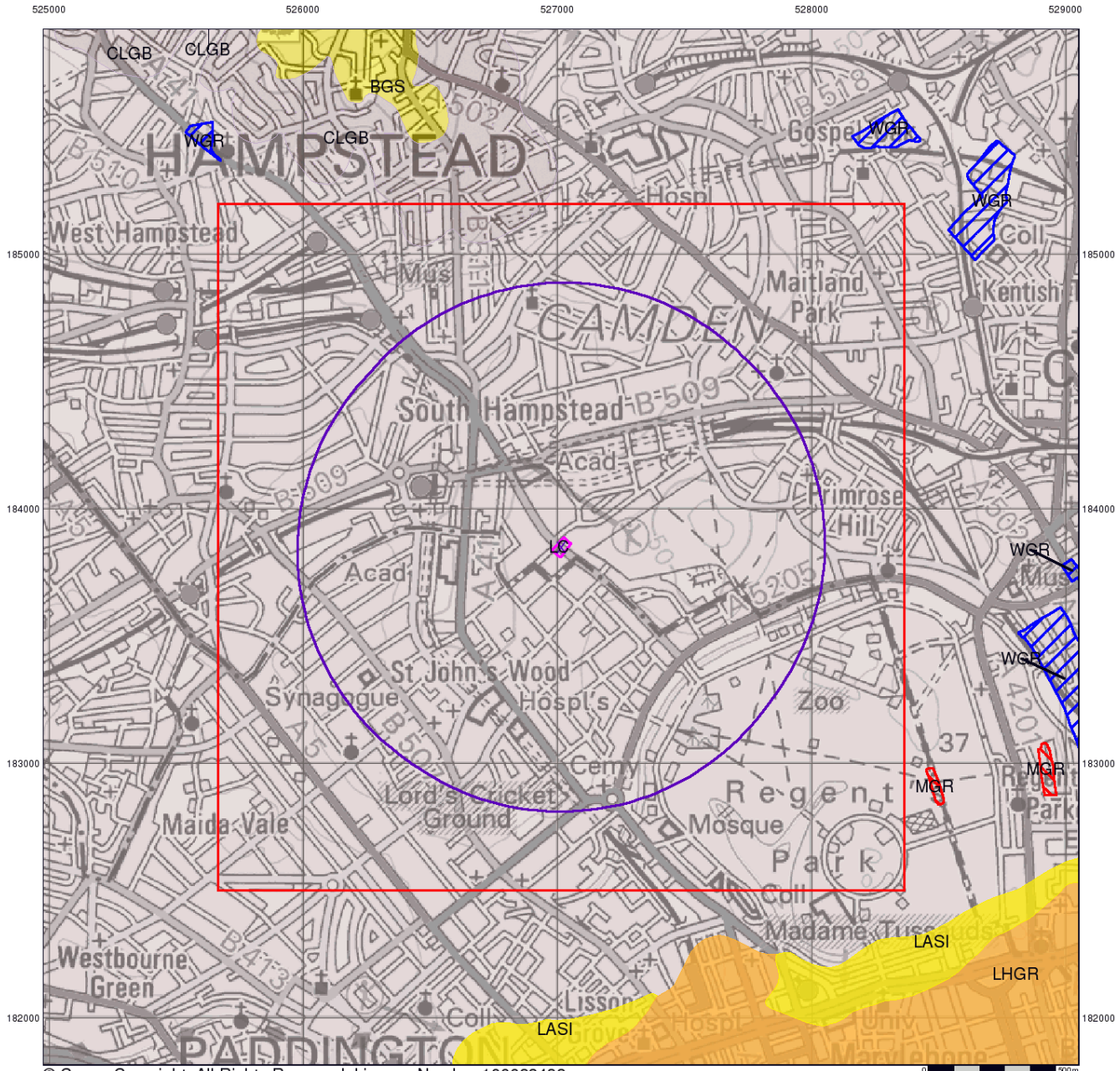

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Combined Surface Geology

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

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

Additional Information

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

Contact

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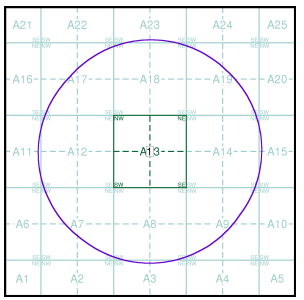
Combined Geology Map - Slice A



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