



Land Science



**90 STONE STREET, READING,
RG30 1HU
COMBINED PHASE I AND PHASE II
GEOTECHNICAL ASSESSMENT
CHARTOM GRACE LTD
9TH JANUARY 2026
LS8925**

Site:	90 STONE STREET, READING, RG30 1HU	
Title:	COMBINED PHASE I AND PHASE II GEOTECHNICAL ASSESSMENT	
Project:	GROUND INVESTIGATION	
Client:	CHARTOM GRACE LTD	
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1.0 EXECUTIVE SUMMARY

This summary is a brief precis of the main findings and conclusions of the investigation. For detailed information, the reader is referred to the main report.

The area under investigation comprised an irregular shaped parcel of land on the corner of Stone Street and Wigmore Lane containing a two-storey dwelling (90 Stone Street) with a large rear garden. The proposed development was understood to comprise a part single-storey and part two-storey rear extension and the erection of 2no. two-storey dwellings with associated soft landscaping and front driveway. The intrusive investigation included 3no. dynamic windowless sampling (DS) boreholes and associated SPT testing, soakage testing and dynamic Cone Penetrometer testing.

Strata	Base Depth	Summary
Made Ground	0.00-0.70m	Soft brown slightly silty, sandy, gravelly CLAY with gravels of flint, clinker, aggregates, brick and rare coal.
Head Deposit	0.90-2.00m	Stiff to very stiff brown silty, sandy, gravelly CLAY with gravels of flint.
Taplow Gravel Member	3.00+- 4.00m+	Loose to dense dark to light brown silty, sandy GRAVEL to dark brown/orange to white silty, gravelly SAND with gravels of flint.

Groundwater was struck during the excavation of positions DS01 and DS04 with short-term standing water depths in the order of 2.80-3.00mbgl.

Reinforced raft foundations are likely to be suitable to the ground and groundwater conditions, and suggested design parameters are given. The formation should be treated as being low volume change potential. Reinforcement must consider differential settlements.

Excavations are generally likely to be unstable. Excavations below the water table may become highly unstable.

Pavements may be formed on the Head Deposits. A CBR value of 4% is recommended for the Head Deposits, which is classified as being frost susceptible. Pavements may be formed on the Made Ground if well designed and constructed.

Buried structural concrete may be designed to DS-1 and AC-1 in accordance with BS8500. Water supply pipe work will not require protection from aggressive soil contaminants.

Soakage testing identified the Taplow Gravel Member being potentially suitable for soakaways, albeit low infiltration, with an estimated soil rate of $5.79 \times 10^{-5} \text{m/s}$.

No issues with respect to ground gases have been identified. No Radon Protection Measures (RPM) are required for new dwellings and extensions at this location.

Soil testing did not identify elevated levels of contamination. Chemical results on Made Ground corresponded to Non-reactive Hazardous Waste classification. Natural soils are anticipated to generally be Inert Waste.

Further investigation may be required in the former of a deeper borehole for pile design, if greater bearing capacity is required.

2.0 INTRODUCTION

2.1 General

Land Science was instructed to undertake a Combined Phase I and Phase II Geotechnical Assessment in relation to the proposed development at 90 Stone Street, Reading, RG30 1HU. The location is shown on Figure 1, which is centred at grid reference SU 68762 74233.

2.2 Client

The Client for this appointment was Chartom Grace Ltd. This report may only be used by this named client and their project team for the purposes set out and subject to the report conditions. It was understood that the Client already owned the property, and that this investigation was not a pre-purchase appraisal.

2.3 Area Under Investigation

The area under investigation comprised an irregular shaped parcel of land on the corner of Stone Street and Wigmore Lane which also comprises the rear garden of 90 Stone Street. The layout is indicated on Figure 2, and a walkover survey is presented in section 3.0. The area was approximately 0.07 hectares.

2.4 Proposed Development

The proposed development was understood to comprise a part single-storey and part two-storey rear extension and the erection of 2no. two-storey dwellings with associated soft landscaping and front driveway. The proposed development was covered under planning application number (PL/25/1460). Figure 3 illustrates the layout of the proposed redevelopment. The findings of this report may not be valid if the proposed development is altered.

2.5 Previous Investigations

The following previous investigations relevant to the site were made available:

2.6 Scope of Work

The work carried out is described in detail in the following sections but in summary included:

- A site setting.
- Full site inspection to identify areas of concern or indicators of potential hazards.
- An intrusive investigation comprising dynamic sampler boreholes, soakage testing and Dynamic Cone Penetrometer testing.
- Preliminary geotechnical testing of selected soil samples in the field and laboratory.
- Preliminary chemical testing of selected soil samples in the laboratory.

The walkover/fieldwork was conducted on 1st December 2025, under the supervision of Land Science.

2.7 Geotechnical Objectives

An interpretive Ground Investigation Report (GIR) was required in order to provide an assessment of ground conditions with respect to proposed foundations, pavements, soakaways, concrete specification and excavations.

2.8 Standards

Where practicable, the investigation was undertaken in accordance with the following primary standards and guidance:

- BS 5930:2015+A1:2020 Code of Practice for Site Investigations.
- BS 1377-1:2016 Methods of test for soils for civil engineering purposes - General requirements and sample preparation.
- BS 1377-2:2022 Methods of test for soils for Civil Engineering Purposes-Classification tests and determination of geotechnical properties.
- BS 8004:2015+A1:2020 Code of Practice for Foundations.
- BS EN 1997-2:2024. Eurocode 7: Geotechnical Design –Ground Properties

Other technical sources have been cited in respect of specific aspects of the investigation, as referenced throughout the text.

3.0 WALKOVER SURVEY

3.1 General

A walkover survey was carried out in order to provide an assessment of the existing site conditions and to identify potential areas of concern. A record of the inspection is shown in Appendix A, with photographs in Appendix B.

3.2 Site Description

In summary, the area under investigation comprised an irregular shaped parcel of land on the corner of Stone Street and Wigmore Lane which also comprises the rear garden of 90 Stone Street. Wooden fencing borders the site to the north/north-west whilst a metal barrier borders the site to the south. The site had been stripped prior to the walkover and revealed a dark reddish-brown topsoil. A large mature tree (possibly Oak) and approximately 7-8m in height is noted in the northeast corner of the site.

3.3 Neighbouring Land

Immediately to the south there is a strip of soft standing grass before asphalt pavement hardstanding runs adjacent to the site along Stone Street. Immediate neighbouring land comprises predominantly residential houses to the south/southwest however a retail park with commercial and fast-food units such as KFC, Halfords, Wickes and two fitness centres are noted approximately 140m further south.

Immediately to the north lies Wigmore Lane further comprising a combination of soft standing grass pathways and verges and asphalt hardstanding pavements. To the north/northwest and northeast further Industrial/commercial units are noted which include a Screwfix, Brewery and Electronics Manufacturer. A railway line is noted approximately 110m to the North running Northwest-Southeast.

3.4 Geo-Environmental Conditions

The walkover survey did not identify any areas of particular concern regarding the geo-environmental condition of the site. No significant evidence of tanks, chemical storage, staining or sheens, built up ground, contaminative land uses etc. were noted.

3.5 Geotechnical Conditions

Other than the tree in the northeast corner, the walkover survey did not identify any areas of particular concern regarding the geotechnical condition of the site. No significant evidence of underground structures, ground instability, subsidence, wet areas, significant earthworks, etc. were noted.

4.0 DESK STUDY

4.1 General

A desk study was carried out to inform the preliminary conceptual understanding of the site and its setting, and to identify potential aspects of concern, in the context of the stated report objectives.

4.2 Historical Mapping

Various historical records were reviewed to assess potential historical land uses and activities that may impact on ground conditions at the site.

Free historic maps were reviewed online and the following key features were noted:

On site

- The earliest map dated 1798-1887 showed the site comprised a section of open field running adjacent to Wigmore Lane.
- The 1944-1974 map showed the first initial development of Stone Street including the site location of present day number 90 Stone Street.
- The latest map dated 1951-1973 showed the site to be in a broadly similar layout to the present day suggesting that since the development of Stone Street between 1930-1950 no to little further development has taken place.

Off site

- The earliest map dated 1798-1887 showed that both The Great Western Railway and The River Thames were noted approximately 110m and 410m to the North/North-East.
- The 1830-1880 and the 1888-1915 map show the site to be primarily surrounded by open fields with Wigmore noted to the east/north and Stone Street to the south.
- The 1944-1974 showed significant development to the east and south with a number of residential dwellings noted in the vicinity. A Greyhound stadium was also noted approximately 30m northwest, and allotment gardens 15m northeast.
- The historical map set included aerial photograph(s) dated 1944-1950. The imagery showed that the site itself looked to be in a similar layout and position to present day.

4.3 Aerial Imagery

Recent aerial photography covering the site was examined using Google Earth Pro. The imagery identified that the land next to number 90 Stone Street has remained mostly clear predominantly comprising of soft standing and several trees bordering the site to the north/northwest. Examining aerial imagery between 2006-2009 shows that several large trees had been removed to the west of number 90 Stone Street and also potential groundwork or clearance may have been started as the foundation layout for a dwelling can be made out. Further changes to the site aren't seen until 2017/2018 whereby the site looks to have undergone vegetation clearance in the southwest corner. From 2018 a yellow skip or similar is now noted in the southwest corner which remains until the latest imagery in 2025. The site looks to have been cleared again in 2021.

4.4 Planning Portal

The online planning portal for Reading Council was checked with records between 1999 and present day reviewed.

The following table summarises details considered to be relevant to the site and immediate area.

Planning reference	Proposal	Relevant information within the submitted documents
PL/99/2470	Erection of 2 x 2 Bedroom Flats	Planning application – Refusal
PL/98/0486	Two Storey side Extension	None
PL/02/0654	Two pitched roof semi-detached houses on land adjacent to 90 Stone Street	Planning application - Permitted subject to Legal Agreement
PL/00/0046	Erection of 2 x 2 bedroom flats with associated parking	Planning application – Refusal
PL/01/1011	Erection of 2 x 2 bedroom semi detached houses	Planning application – Refusal
PL/25/1460	Proposed part single-storey and part two-storey rear extension	Flood Risk Assessment Report showing that the proposed development is appropriate for its location and, with the inclusion of standard mitigation measures, will not increase flood risk either on or off the site.

4.5 Ground Conditions

A preliminary ground model was derived for the site based on a combination of various sources including published maps, borehole records (BGS borehole ref: SU67SE391, SU67SE546, SU67SE549 and SU67SE74), previous investigations, and the site history. In summary, the following potential ground model was identified:

Strata	Approximate Depth (mbgl)	Summary Description
Made Ground	< 1.00	The site has been subject to previous development and there is a potential for construction and demolition wastes, imported fill materials, and zones of disturbed ground, etc.
Superficial – Taplow Gravel Member	< 5.00	Sand and gravel, locally with lenses of silt, clay or peat.
Bedrock - Seaford Chalk Formation and Newhaven Chalk Formation	5.00 +	Firm white chalk with conspicuous semi-continuous nodular and tabular flint seams. Hardgrounds and thin marls are known from the lowest beds. Some flint nodules are large to very large.

It should be noted that a number of stratum were noted in the vicinity of the site including Head Deposits, Alluvium, and Langley Silt Member and these may intersect the site.

In addition, groundwater was anticipated, as follows:

- Perched water – in granular soils of the Taplow Gravels upon cohesive soil or buried structures or in old trenches.
- Groundwater was encountered within the Taplow Gravel Member at 3.80mbgl (ref: SU67SE549) as well as within the Topsoil at a depth of 0.70mbgl (ref: SU67SE391).

4.6 Geological Hazards

The desk study included searches of geological hazards. No hazards were noted on site, however the following hazards were identified in the vicinity, as moderate or above:

- Compressible ground – Moderate (64m offsite to the northeast).
- Ground dissolution – Moderate (236m offsite to the south).

A search of various databases for coal mining, mining, brine compensation, and natural cavities was carried out. No relevant features were identified, except the following:

- Non-Coal Mining Areas of Great Britain – offsite Approximately 93m to the southwest.

4.7 Environmental Setting

The site lies in the following groundwater setting:

- Superficial aquifer: The Taplow Gravel Member strata was classified as a Secondary A - Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
- Bedrock aquifer: The Seaford Chalk and Newhaven Chalk Formation strata were classified as a Principal Aquifer - strata that have high inter-granular and/or fracture permeability, usually providing a high level of water storage. They may support water supply and/or river base flow on a strategic scale.
- Source protection zone: None - no groundwater Source Protection Zones were identified on site or in the vicinity.
- Flooding from Rivers and Sea: Zone 1 Low Probability - Land having a less than 1 in 1,000 annual probability of river or sea flooding.
- Surface water flooding on site: Low risk - each year this area has a chance of flooding of between 0.1% and 1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.
- Groundwater flooding on site: Flooding from Groundwater is unlikely in this area.
- Nitrate Vulnerable Zone: The site sits within a Nitrate Vulnerable Zone.
- The nearest surface water feature is the River Thames situated approximately 410m to the north/northeast.

4.8 Radon Gas

The requirement for Radon Protection Measures (RPM) has been assessed in accordance with BRE 211:2023 Public Health England and the BGS estimate the potential for radon and the requirement for Radon Protection Measures on site as follows:

-
- Radon probability: Low probability - between 1% and 3% of homes are estimated by PHE to exceed the threshold for Radon gas in residential dwellings.
 - Radon Protection Measures (RPM): No Radon protection is required for new dwellings or extensions constructed at this location.

4.9 UXO Risk Assessment

Free online maps suggest the risk from UXO might be low. As such, no further assessment is considered necessary at this stage.

5.0 INTRUSIVE INVESTIGATION

5.1 Investigation Rationale

Based on the geotechnical objectives, the intrusive investigation was based on the following strategy:

- 4no. Dynamic sampler boreholes were used to minimise disruption to the site and their positions used to give broad coverage across the footprint of both the proposed dwelling and extension.
- DS04 was located away from the footprint of the proposed dwelling to conduct soakage testing to provide an indication for the potential for shallow infiltration and for the design of possible drainage options.
- Additionally, DCP01 was used to gather data from in-situ CBR testing for possible pavement design.

Position	Provisional Depth / Strata	Existing Location	Proposed Location	Testing, Installations etc.
DS01	5m (or refusal)	Side garden	Proposed footprint	SPT, PID, HP
DS02		Rear garden (No 90)	Proposed extension	SPT, PID, HP
DS03		Side garden	Proposed footprint	-
DS04	3m (or refusal)		Proposed garden	SPT, PID, HP
DCP01	1m (or refusal)		Proposed driveway	DCP

Due to time constraints (dense ground conditions), the decision to remove position DS03 was taken and subsequently DS01 was relocated within a more central position of the proposed dwelling. This was deemed not to impact the scope of the investigation.

5.2 Geotechnical Strategy

Geotechnical aspects were investigated based on the following strategy:

Area of Concern	Investigation	Position(s)
Shallow soil conditions	Shallow exploratory holes located in and around the proposed development footprint.	All
Shrinkable soils	Plasticity index and particle size testing was scheduled to determine the shrinkability and percentage passing 425µm sieve.	All
Sulphate	Representative samples from relevant depths were scheduled for analysis of pH value and water-soluble Sulphate.	DS01, DS02
Frost susceptibility	Samples were submitted for plasticity index (cohesive) or particle size distribution (granular) to determine frost susceptibility. All chalk materials are deemed to be frost susceptible.	All
Soakage potential	A shallow exploratory hole was positioned in the indicated soakaway location.	DS04
Waste classification	For preliminary waste classification, representative samples were to be screened for contaminants and full hazardous waste leachate testing performed.	DS01

5.3 Dynamic (Windowless) Sampling (DS)

Dynamic Sampling entails 1m long hollow tubes with liners driven into the ground and retracted to obtain samples. The liners are split, logged, tested, and subsampled as required.

5.4 Hand Penetrometer (HP)

Hand penetrometer tests were performed on samples of cohesive materials recovered within the boreholes. The test is used to approximate undrained shear strength and in turn has been used to give an indication of consistency as defined in BS5930.

5.5 Falling Head Soakage Testing (FHST)

A test bore is filled with water and the drop in water level over time is recorded, to provide an indication on the likely permeability of different strata.

5.6 Dynamic Cone Penetrometer (DCP)

The test involves driving a 20mm diameter (60°) cone attached to a penetration rod with an 8kg weight in a 'slide hammer' action and recording each blow's penetration. The weight is dropped from a height of 575mm. The test approximates a CBR value for pavement design.

5.7 Standard Penetration Test (SPT)

The Standard Penetration Test involved driving a cone (SPT(C)) or split spoon sampler (SPT(S)) with a percussive hammer weight and recording the number of blows to penetrate six consecutive intervals of 75mm; the first two are discarded as 'seating blows', while the final four are added together to calculate an N-Value. The procedure is defined under numerous standards including BS5930:2015.

5.8 Soil Sampling

Soil samples were recovered from the exploratory holes during the ground investigation and stored/transported in containers appropriate for the laboratory testing undertaken. Sample types and depths are recorded on the relevant exploratory hole records.

6.0 GROUND CONDITIONS

6.1 General

The expected ground conditions were anticipated to comprise Taplow Gravel Member over Seaford Chalk/Newhaven Chalk Formation to depth with several other strata also noted in the vicinity of the site. Whilst the investigation encountered Taplow Gravel to depth, a thickness of Head Deposits was noted in two of the investigative positions above the Taplow Gravel Member. A thin capping of Made Ground was encountered to depths of 0.70mbgl at surface. A summary of the encountered conditions is presented below.

Strata	Base Depth m			Description
	DS01	DS02	DS04	
Made Ground	0.70	-	0.70	Soft brown slightly silty, sandy, gravelly CLAY with abundant rootlets and rare roots. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint, clinker, aggregates, brick and rare coal.
Head Deposit	2.00	1.40	-	Stiff to very stiff brown silty, sandy, gravelly CLAY with rare to abundant rootlets. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint.
Taplow Gravel Member	4.00+	3.00+	3.00+	Generally dense dark to light brown silty, sandy GRAVEL to light brown sandy, gravelly SILT to dark brown/orange to white silty, gravelly SAND. Gravels are fine to cobbled, angular to rounded flint.

The naming of geological strata is tentative and should be used as a guide. Interpolation between or below investigation points should be treated with caution. The description of soils and rocks was in accordance with BS5930.

6.2 Roots and Rootlets

Occurrences of roots and rootlets were noted as follows:

Position	Roots	Rootlets
DS01	0.0-0.50m; Rare roots up to 0.10m in length	0.0-0.70m; Abundant rootlets
		0.70-2.00m; Rare rootlets
DS02	-	0.0-1.40m; Abundant rootlets
DS04	-	0.0-0.70m; Abundant rootlets

6.3 Field Evidence of Contamination

No evidence of possible soil contamination (such as staining, malodours, or brightly coloured soils) was identified in the field.

Made Ground was identified to 0.70m, and such materials may be imported from an unknown source or mixed with hazardous materials, and as such may contain a wide range of potential contaminants. All such materials should be treated as suspect unless proven otherwise. Preliminary testing has been carried out, as described in section 8.

6.4 Groundwater

Groundwater was struck during the excavation of positions DS01 and DS04 with short-term standing water depths in the order of 2.80-3.00mbgl.

6.5 Stability and Casing

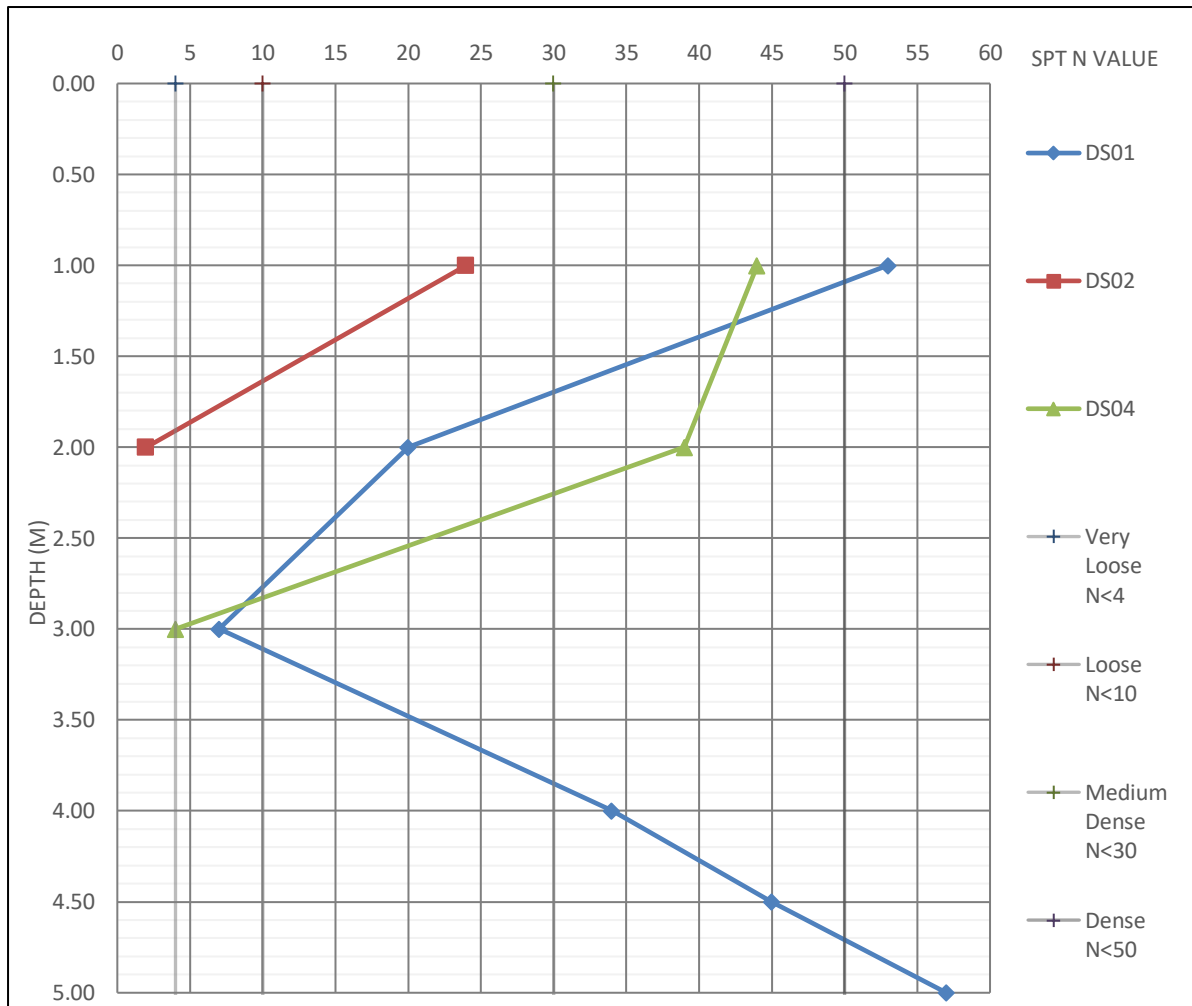
The excavations were noted to become unstable and suffer partial collapse between 2.50-3.50mbgl.

The boreholes were not cased.

7.0 FIELD TESTING

7.1 Standard Penetration Test (SPT)

The SPT results are summarised below:



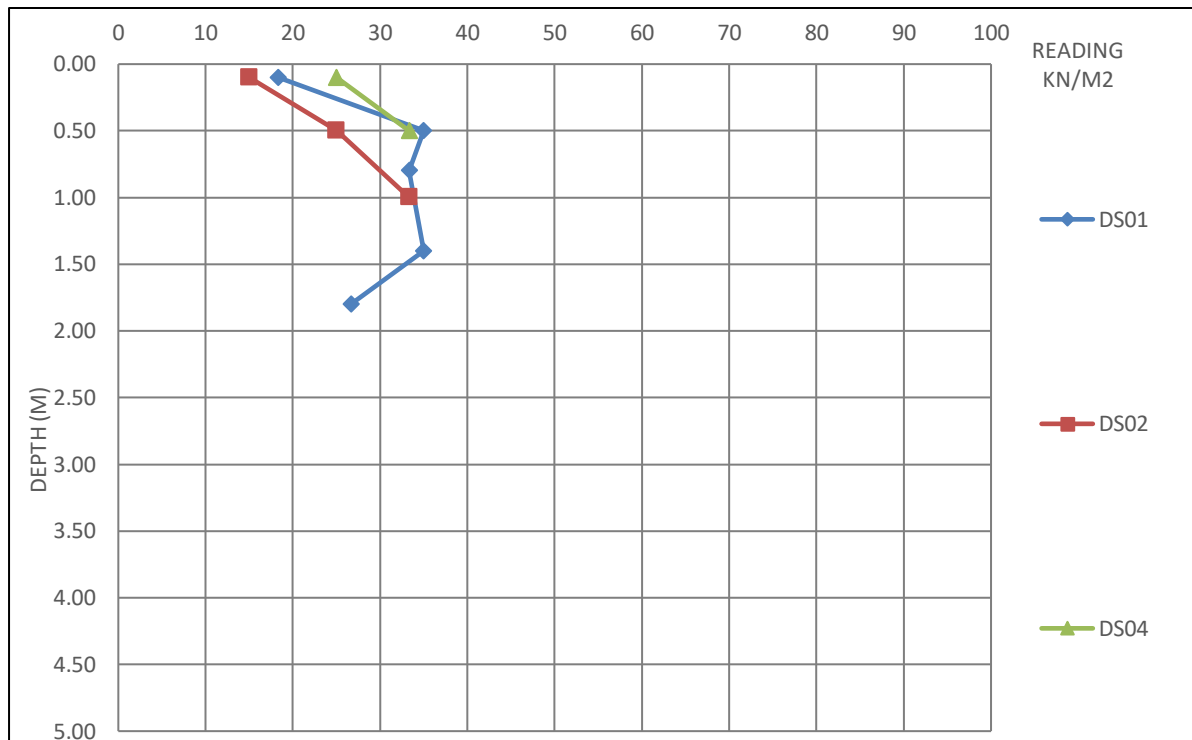
Note: gridlines shown are approximate and indicative only

Strata	Base Depth Range (mbgl)	Results (SPT 'N')	Notes
Made Ground	0.70	-	-
Head Deposit	1.40-2.00	24-53	Stiff to very stiff
Taplow Gravel Member	3.00+ - 4.00+	2 - 44	Very loose to dense

There was significant variation with initially N values of between N=24 and N=53 (stiff/medium dense to very stiff/very dense) at 1.00mbgl, decreasing to depths between 2.00-3.00mbgl to N values of between N=2 and N=7 (very loose to loose) and likely represented the water table. DS02 was terminated at 3.00mbgl with the borehole collapsing and difficulty in sample retention likely due to the granular material and groundwater. DS04 was completed at this depth. DS01 was terminated at 4.00mbgl due to the difficult drilling conditions, and continuous SPTs were conducted at the base to give an indication of the density and showed an increase to 5.00mbgl.

7.2 Hand Penetrometers (HP)

The Hand Penetrometer results are summarised below:



Note: gridlines shown are approximate and indicative only

Strata	Base Depth Range (mbgl)	Results (kN/m²)	Notes
Made Ground	0.70	18.33 – 35.00	N/A
Head Deposit	1.40-2.00	15.00 – 35.00	Very soft to soft

The results were generally consistent throughout with values ranging between 15kN/m² and 35kN/m² (very soft to soft).

7.3 Dynamic Cone Penetrometer (DCP)

The single in-situ CBR determination using a TRL DCP was conducted on the Head Deposits to 1.00mbgl and was variable throughout. A summary of the test can be noted below which is broken down into layers based on the test results.

DCP01			
Strata	Depth (mbgl)	Estimated CBR Results (%) / layer	Estimated CBR Results (%)
Head Deposit	0.10-0.20	1.8	8.35*
	0.20-0.50	5.6	
	0.50-0.80	16	
	0.80-1.00m	10	

*Calculated over complete depth 0.00-1.00mbgl

7.4 Falling Head Soakage Testing (FHST)

The results of the Falling Head Soakage Tests are summarised below:

Position	Strata Tested	Test Depth Range	Result	Notes
DS04	MG / TGM	0.50-2.00m	$5.79 \times 10^{-5} \text{m/s}$	*Borehole suffered partial collapse to 2.00m during testing

*MG = Made Ground *TGM = Taplow Gravel Member

Overall, the water level fell 1.50m in 60 minutes at a moderate to steady rate before the borehole collapsed to 2.00mbgl.

8.0 GEOTECHNICAL LABORATORY TESTING

8.1 Geotechnical Laboratory Testing

Samples were selected for geotechnical testing, based on the following rationale:

- For general classification purposes, representative cohesive natural samples of soil were analysed for 1pt Atterberg Limit (Plasticity Index) tests (PI). Moisture content (MC) determinations were carried out in association with the Atterberg limit tests.
- For general classification purposes, representative samples of granular soils were selected for Particle Size Distribution by wet sieving (PSD).
- To determine the required concrete specification to resist chemical attack, samples were tested for pH and soil soluble sulphate (pH/SO₄).
- Bulk samples from selected locations were tested using the California Bearing Ratio (CBR) to measure the strength and load bearing capacity of shallower soils and to help determine pavement design.

A summary of the testing scheduled is given below:

Sample	Depth (mbgl)	Strata	Test				
			PI	MC	PSD	pH/SO ₄	CBR
DS01	0.00-0.50	Made Ground				X*	X
	0.80	Head Deposits	X	X			
	1.40					X	
	1.80		X	X			
	2.50	Taplow Gravel Member		X	X		
DS02	0.00-0.50	Head Deposits					X
	1.00			X	X		
	1.50	Taplow Gravel Member				X	
	2.00			X	X		
DS04	0.00-0.50	Made Ground					X
	0.70	Taplow Gravel Member		X	X		
	2.50			X	X		

*As a part of the Waste Classification Testing.

The results are discussed in the relevant sections.

8.2 Plasticity Indexes (Atterberg Limits)

The results of the Atterberg limit tests are summarised below.

Strata	No. of Tests	Plasticity Index %		
		Minimum	Maximum	Average
Head Deposit	2	6.1	12.1	9.1

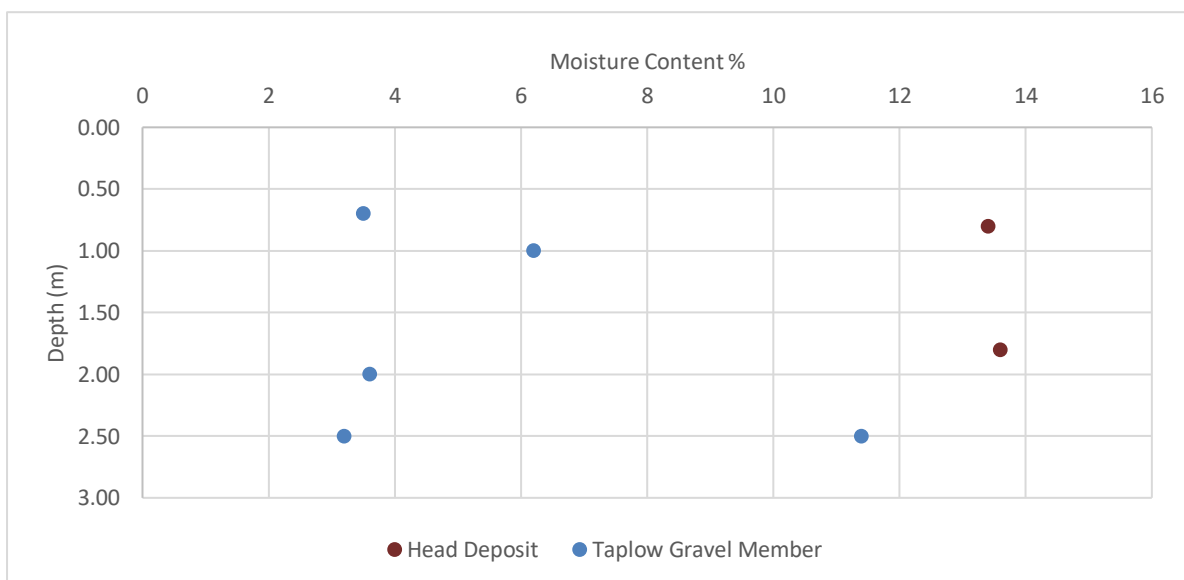
A modified plasticity index (PI') was calculated following the NHBC methodology, to account for any non-shrinkable percentage not passing the 425µm sieve:

Strata	No. of Tests	Modified Plasticity Index %		
		Minimum	Maximum	Average
Head Deposit	2	5.4	8.2	6.8

8.3 Water Content

The results of the water content (or *moisture content*) tests are summarised below.

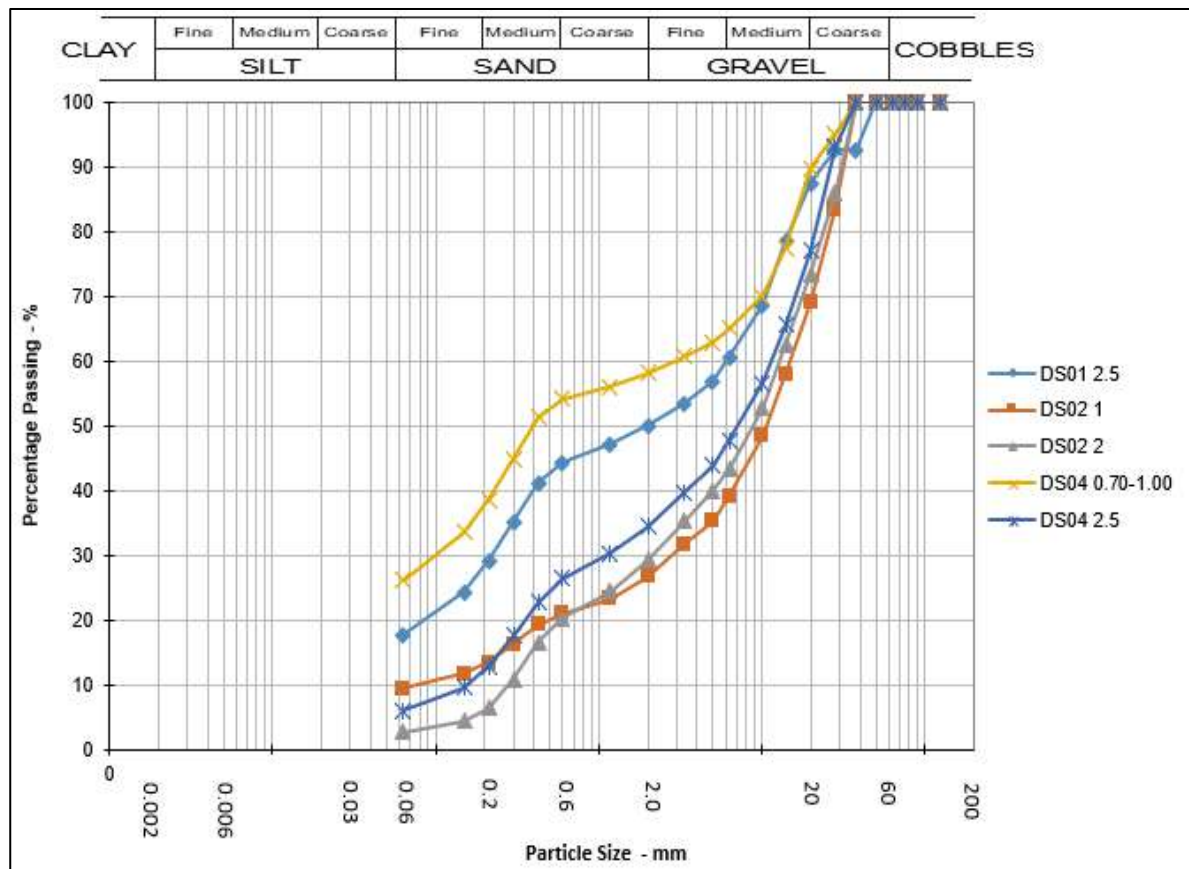
Strata	No. of Tests	Moisture Content %		
		Minimum	Maximum	Average
Head Deposit	2	13.4	13.6	13.5
Taplow Gravel Member	5	3.2	11.4	5.6



8.4 Particle Size Distribution

The results of the particle size distribution analysis are summarised below. It should be noted that, due to the drilling technique, there may be loss of fines in samples from cable percussive boreholes taken below the water table.

Strata	No. of Tests	% Clay/Silt	% Sand	% Gravel	% Cobbles
Taplow Gravel Member	5	2.7-26.2	17.4-32.3	41.8-73.2	0



8.5 pH and Sulphate

The results of the pH and water-soluble sulphate tests are summarised on the following table.

Strata	No. of Tests	Water Soluble Sulphate (SO ₄ g/l)	pH (value)
Made Ground	1	<0.02	8.35
Head Deposit	1	<0.02	8.12
Taplow Gravel Member	1	<0.02	7.90

8.6 Laboratory CBR tests

The results of the laboratory light remoulded Californian Bearing Ratio (CBR) determinations are summarised below.

Strata	No. of Tests	CBR (top) %	CBR (base) %
Made Ground	2	0.8 – 1.0	-
Head Deposit	1	4.9	-

9.0 GEOTECHNICAL DISCUSSION

9.1 General

The proposed development was understood to comprise a part single-storey and part two-storey rear extension and the erection of 2no. two-storey dwellings with associated soft landscaping and front driveway.

9.2 Made Ground

Made Ground was encountered within DS01 and DS04 to depths of 0.70mbgl and generally comprised soft brown slightly silty, sandy, gravelly CLAY with abundant rootlets, rare roots and fine to coarse gravels of clinker, aggregates, brick and rare coal.

Given the depth of the Made Ground, and to avoid potential services within this material, no in-situ SPT tests were conducted.

Due to the inherent variability often encountered with Made Ground, a conservative approach has been adopted when determining parameters, therefore a value of 16kN/m² is proposed. However, it was assumed that the Made Ground was to be either removed or the foundations were to be constructed into natural material.

9.3 Head Deposits

Beneath the Made Ground, Head Deposits were encountered to a base depth ranging between 1.40mbgl (DS02) and 2.00mbgl (DS01). DS04 did not encounter Head Deposits. Overall, the Head Deposits comprised stiff to very stiff brown silty, sandy, gravelly CLAY with rare to abundant rootlets and fine to coarse, angular to subrounded gravels of flint.

In-situ SPT testing undertaken in DS01 indicated 'N' values initially of N= 53 (very stiff) reducing to N= 24 (stiff) at 2.00mbgl. Atterberg testing gave a modified plasticity index of between 5.4% and 8.2%. A bulk unit weight of 19-20kN/m³ is typical for cohesive material.

Hand penetrometer tests were also undertaken within the Head Deposits, and the results indicated a Cu of between 15kPa and 35kPa (very soft to soft). Hand pens are susceptible to hard and soft spots and should be used with caution in the geotechnical design.

Within the clay CIRIA Report R143 indicates that an undrained shear strength can be determined from the recorded SPT value(s) (N) and the Stroud Correlation Factor (f1) using the following equation:

$$C_u = f_1 \times N_{60}$$

Using Figure 31 from CIRIA R143, and a plasticity index of 8.2%, an f1 value of 5 can be applied to an SPT 'N' value of N=24 to determine an undrained shear strength value (Cu) of 120kN/m². However, given the variance in material across site and the limited investigation, a value of 100kN/m² will be adopted.

Effective stress parameters can be determined from correlations with modified plasticity index (Ip) in accordance with British Standards BS8002:2015, using the following equation:

$$\text{Angle of shearing resistance} = (42^\circ - 12.5\text{Log}(I_p))$$

For a plasticity index of 9%, this equates to an effective shearing resistance of 30° . It is recommended effective stress parameters can be determined from available published data. It is recommended that a conservative maximum cohesion of 1.0kN/m^2 is also applied for design of drained conditions.

9.4 Taplow Gravel Member

The Taplow Gravel Member was encountered beneath the Made Ground and Head Deposits and generally comprised loose to dense dark to light brown silty, sandy GRAVEL, to light brown sandy, gravelly SILT, to dark brown/orange to white silty, gravelly SAND. Gravels are fine to cobbled, angular to rounded flints.

In-situ SPT tests indicated 'N' values ranging between $N=2$ and $N=44$ (Very loose to dense). Very loose material was noted at 2.00mbgl ($N=2$) in DS02, and very loose to loose material in DS01 and DS04 ($N=4-7$) at 3.00mbgl and may be representative of the water table.

PSD testing on the Taplow Gravel Member identified the material to generally be a clayey, silty, sandy, GRAVEL with constituents varying throughout. A bulk unit weight of 16.5 to 20kN/m^3 is typical for granular material.

Based on table 1 within BS8002:2015, an angle of friction of 32° has been estimated for Taplow Gravel Member based on the SPTs $<N=10$, grading, and rounded material.

Recommended effective stress parameters can be determined from available published data.

9.5 Recommended Geotechnical Parameters

The recommended geotechnical parameters for design are specified below. These have been determined from both in-situ and laboratory testing.

Strata	Bulk Unit Weight (kN/m^3)	Undrained Shear Strength (kN/m^2)	Angle of Friction ($^\circ$)	Cohesion (kN/m^2)
Made Ground 0.00-0.70mbgl	16	-	-	0
Head Deposit 0.00-2.00mbgl	19	100	30	1
Taplow Gravel Member 0.70-4.00+mbgl	16.5	-	32	0

10.0 GEOTECHNICAL ASSESSMENT

10.1 General

The proposed development was understood to comprise a part single-storey and part two-storey rear extension and the erection of 2no. two-storey dwellings with associated soft landscaping and front driveway.

Very loose Taplow Gravel Member were encountered between 2.00-3.00mbgl. The engineering characteristics of these materials are such that high total and differential settlements may occur at relatively light foundation bearing capacities.

Groundwater was encountered within two of the boreholes at a depth of 3.00mbgl where after monitoring for 20 minutes the water level was seen to rise to 2.80mbgl where it remained. It is considered that this may have been due to perched water within the granular Taplow Gravel Member.

Groundwater levels may vary seasonally. Although the risk of running sands on site is low it may be prudent to consider the installation of monitoring wells to confirm standing groundwater levels (or absence thereof), especially through winter months. Trial pits may also be excavated across the site prior to construction to assess general stability and water ingress parameters.

It should also be noted that water may also become perched upon cohesive strata or around features such as foundations, and may also occur from leaking drains and water mains etc.

Below the surface of topsoil, a relatively thin capping of Made Ground was encountered to a depth of 0.70mbgl (DS01) and (DS03) and it is expected that this material would be removed as a part of the site strip.

The Head Deposits were identified to be cohesive. Such soils are susceptible to heave and shrinkage through changes in moisture content, for instance through seasonal changes in rainfall or through the presence of vegetation and trees.

Based on the ground conditions encountered a reinforced raft foundation would be suitable for the proposed development. However, given the variable ground conditions and the very loose materials encountered at 2.00-3.00mbgl, a low allowable bearing capacity and high/variable settlement may be expected and should be accounted for in the design process.

Alternatively, if greater bearing capacity is required considerations into alternative foundations, such as piles should be considered.

The final foundation scheme will depend on other constraints and should be evolved in consultation with the design team.

10.2 Volume Change Potential

Reference may be given to the NHBC standards or similar guidance for designing and constructing foundations in the zone of influence of trees and hedgerows that currently exist, are to be planted, or have recently been felled.

Strata	Modified PI'	Shrinkability classification
Head Deposit	< 10%	Low volume change potential

Sandy soils can be cohesive as particles below 425µm may contribute to plasticity whereas the lower boundary for fine sand is 62µm. Such materials are often described C'-Phi soils, i.e. having both cohesive and granular properties.

Specifications for heave precautions are summarised below. In addition to the depths marked *, localised deepening of foundations will be required in the influence of trees; it will be necessary to evaluate tree species and height in relation to the proposed building footprints.

Volume Change Potential		Low
Minimum depth for traditional foundations outside zone of influence of trees (m) *		0.75m
No tree planting zone required for minimum depth foundations above (m)		0.2 x mature tree height
Minimum depth for traditional foundations but allowing for restricted new planting (m) *		1.00m
Minimum void dimension	Against side of traditional foundations (>1.50m) and ground beams etc.	0mm
	Beneath ground beam and suspended in-situ concrete ground floors etc.	50mm
	Beneath suspended precast concrete or timber floors etc.	200mm
Minimum allowance for potential ground movement for new drains		50mm

Raft foundations may be constructed upon shrinkable soils. In accordance with the NHBC standards, granular infill will be required beneath the raft foundation to a minimum depth equal to half that specified for strip foundations, which should be of a uniform thickness beneath the raft.

All foundations should extend below any major root zones or desiccated soil encountered, and trenches should be carefully inspected accordingly.

10.3 Raft Foundations

Reference should be made to the NHBC Standards (especially chapter 4.4) when designing raft foundations.

The NHBC Standards chapter 4.2 states that raft foundations will only be acceptable on shrinkable soils are acceptable where the following conditions can be met. In such instances, the NHBC considers that adequate protection from heave:

- The design is by an Engineer in accordance with technical requirements
- The NHBC is satisfied that the raft is sufficiently stiff to resist differential movements.
- The raft is founded on granular infill placed and compacted in layers to an agreed specification.
- The foundation depth derived in accordance with clause 4.2.7 is less than 2.50m.
- The raft is generally rectangular in plan with a side ratio of not more than 2:1.

The Head Deposits/Taplow Gravel level is classified as being potentially frost susceptible, and protection of the raft should be considered. For instance, a minimum 600mm deep slab thickening might be constructed around the perimeter ("frost curtain") with the granular infill beneath the slab extending to at least the same depth.

The formation level is anticipated to comprise at a depth in the order of 1.00-1.20mbgl. Any Made Ground and any soft or loose zones should be replaced with granular fill well-compacted to a suitable specification. If necessary, further granular fill may be placed across the formation.

Integral pad and strip foundations within the raft may be designed based on a maximum net allowable bearing capacity of 40/m² on the cohesive. The overall slab should not exceed an overall maximum net allowable bearing capacity of 20kN/m². The raft should be of a suitable thickness and reinforced to be suitably rigid.

Where used in the design of a raft foundation, a calculate value for the Modulus of Subgrade Reaction in the order of 4,800kN/m³ is appropriate. The resulting design should be checked to ensure it is sensible.

The cohesive material will soften rapidly when exposed to free water. The final 50mm of any foundation trench should not be excavated until immediately before concreting, unless blinded or otherwise protected immediately after excavation.

10.4 Excavations

The risks arising from excavation works should be properly assessed and appropriate safety precautions should be adopted. Reference may be made to various guidance including BS8000-1:1989, BS6031:2009 and CIRIA C97.

The likelihood of excavation instability through different strata has been assessed as summarised below. It should be noted that all open unsupported excavations have the potential to collapse.

Strata	Stability
Topsoil/Made Ground	Generally unstable. May be battered back to a safe angle. Deeper excavations may require trench support.
Head Deposits	Generally stable in the short to medium term.
Taplow Gravel Member	Marginally stable in the short term. Spalling and collapse should be expected, particularly in long or deep excavations which are left open for prolonged periods.

Excavations which are to remain open for prolonged periods will require trench support. Water seepages may be encountered at shallow depth, particularly during wetter climatic conditions.

According to British Standard the method of excavation should be normally determined by the earthwork's contractor. Any battered slope should be regularly inspected for signs of potential instability, and sufficient working space should be allowed at the base.

It is considered that normal-rated plant and machinery will be sufficient for undertaking excavations.

Breakers will be required for removing any former foundations, retaining walls etc. Care should be taken so as not to undermine existing structures, services, or adjacent property.

Adjacent excavations should generally be tackled in order of depth with the deepest first. Vehicles and spoil heaps etc. should not surcharge excavations, and edge protection and fencing should be used as appropriate. Frozen materials should generally not be used as backfill.

10.5 Pavements

The design of pavements will depend on the performance requirements and specification, as well as the ground conditions and finished levels etc. The suitability of shallow soils encountered as a formation level for pavements is summarised as follows:

Strata	Base Depth Range (m)	Suitability
Made Ground	0.00 to 0.70m	Only suitable for pavements with low performance requirements. CBR values for these materials will not reflect the possible settlements that may occur. The materials will be frost susceptible so a minimum pavement thickness of 450mm will be required. The formation should be subject to a suitable programme of treatment and the sub-bases appropriately engineered.
Head Deposits (cohesive)	0.00 to 2.00 m	These materials are generally a suitable formation level. The formation may be frost susceptible and a minimum pavement of 450mm should be considered. The in-situ CBR gave a result of between 1.8% to 16%. The single laboratory CBR determination was noted to be 4.9%. Overall, a design value of 4% is recommended considering any soft layers are removed or appropriately treated. Cohesive formations will degrade rapidly if exposed to standing water and should be protected.
Taplow Gravel Member (granular)	1.40 to 4.00+ m	These materials are generally a suitable formation level. The formation is potentially frost susceptible, and a minimum pavement thickness of 450mm should be considered. TRRL 1132 suggests a CBR of around 20%, under all construction and groundwater conditions.

The formation level should be carefully inspected, and any soft or loose zones should be removed and replaced with engineering fill, well-compacted in layers to a suitable specification. Consideration might be given to installing geotextiles. All engineering fill should be granular and non-frost susceptible (i.e. <10% fine material passing 425µm sieve).

Any hard spots in the formation level such as old foundations may induce reflective cracking in the pavement and allowance should be made for removing any slabs or other hard spots etc. that may be present.

10.6 Building Materials

All sub surface concrete should be designed and specified in accordance with BS8500-1:2015+A1:2016. The results of the Sulphate and pH analyses fell into Class DS-1 and an ACEC class AC-1 is appropriate.

Buried plastics used for potable water supplies should not require any special specification in order to resist chemical contamination. No pipework should be laid where there is evidence of hydrocarbons.

10.7 Surface Water Drainage

The preliminary falling head soakage tests suggested an infiltration rate in the order of $5.79 \times 10^{-5} \text{m/s}$ for the Taplow Gravel Member. These materials are therefore potentially suitable for soakaways, albeit at a low infiltration rate.

The testing carried out is preliminary, and the infiltration rate should be used with caution. Accurate values may only be obtained through full-scale soakage testing in accordance with BRE365.

In accordance with the building regulations, it is recommended that soakaways are positioned a minimum of 5m away from buildings and sensitive structures.

Due to the risk of instability and possible contamination issues, the Made Ground is not considered a suitable stratum into which surface water drainage could be discharged. Permeable surfacing over such materials might be problematic.

11.0 CONTAMINATION LABORATORY TESTING

11.1 Scheduled Testing

Samples were selected for geochemical (contamination) analysis, based on the following rationale:

- Waste classification testing (S3) on one sample was included in the scope of works, to provide a preliminary assessment for waste handling. In the absence of any areas to specifically target, a representative sample of Made Ground was selected for testing.

Sample	Depth (mbgl)	Strata	S1	S3	Asbestos
DS01	0.00-0.50	Made Ground	X	X	X

The relevant screening suites are defined below. Where duplicate analysis exists between suites, each test is performed only once:

Suite	Definition
S1 (soil)	Screening suite: pH, fraction of organic carbon, metals and non-metals, water soluble sulphate, sulphide, total cyanide, total phenols, speciated PAH's.
S3	Waste Acceptance Criteria (WAC): Total Organic Carbon (TOC), Loss on Ignition (LoI), BTEX, speciated PCB's, mineral oil (EC10 – EC40), pH, acid neutralisation capacity, speciated PAH's, 10:1 leachable metals and non-metals.
Asbestos	Asbestos screen: Laboratory screening for fibres and Asbestos Containing Materials (ACM); identification where identified. Using polarising light and dispersion staining as described in HSG 248, HSE Contract Research Report No 83/1996 and in Davies et al, 1996.

The results are discussed in the relevant sections.

12.0 PRELIMINARY CONTAMINATION ASSESSMENT

Whilst a full geo-environmental risk assessment was outside the scope of this report, the following preliminary observations have been made.

Contaminated land risks are evaluated on following a source-pathway-receptor ('SPR') approach, in accordance with best practice.

The desk study and site history in section 4.0 comprised a field before being developed into the current residential property and was therefore not considered particularly onerous.

The ground and groundwater conditions encountered in section 6.0 did not identify any potentially suspect ground condition.

The results of the chemical analysis did not exceed screening criteria for residential land uses with plant uptake (i.e. residential properties with private gardens, where homegrown produce could form a proportion of dietary intake).

In the absence of any sources, no SPR linkages exist, and consequently no risk has been identified.

As always, any Made Ground, shallow soils which have been disturbed, or those showing field evidence of possible contamination such as staining, should be treated as suspect, handled with appropriate care, and relevant advice sought from a qualified professional.

13.0 PRELIMINARY WASTE ASSESSMENT

13.1 General

Waste may be defined as any substance or object in Annex 1 of the Waste Framework Directive which the holder discards, intends to discard, or is required to discard. Subject to compliance with waste regulations, soils may either be handled as either:

- Non-Waste, and re-used (either on-site or on another site), or
- Waste, and disposed of (to a waste management facility).

Given the confines of the site, it was anticipated that all materials would be disposed of from site as waste.

The waste producer has a legal duty of care to ensure that waste materials are handled properly and sent to the appropriate licenced facility. Substantial tax penalties and fines are being levied by the regulators. Inspection, testing, segregation etc. will be required on site, and the support of a suitably qualified consultant should be sought; therefore, the advice in this section is preliminary only.

13.2 Waste Disposal

Where materials are not re-used they must be handled as waste, and must be sent to a licenced waste management facility. Waste soil is classified for disposal purposes as follows:

Step 1: Does the material contain dangerous substances in various proportions that exceed the thresholds for hazardous waste under the Waste Framework Directive?

- If yes, the material is hazardous
- If not, the material is non-hazardous

Step 2: Does the waste acceptance testing allow the materials to be sub classified as follows:

- If hazardous, does the soil meet the requirements for Stable Non-Reactive Hazardous Waste (SNRHW)?
- If non-hazardous, does the soil meet the requirements for inert waste?

A material is therefore either hazardous or non-hazardous waste; hazardous may only be sub-classified as SNRHW and non-hazardous waste may only be sub-classified as inert.

The results of the soils analysis have been interpreted as follows:

Soil	Step 1: Hazardous Waste	Step 2: Waste Acceptance	Asbestos etc.	Waste Designation
Made Ground – Foundation excavations DS01 0.50m	Hazardous Waste	The soil analysis was identified as Hazardous waste, although the WAC test met the criteria for Stable Non-reactive Hazardous Waste. The tests failing the	None detected	Stable non-reactive Hazardous Waste

Soil	Step 1: Hazardous Waste	Step 2: Waste Acceptance	Asbestos etc.	Waste Designation
		criteria were chromiumVI oxide and barium chromate.		

Natural soils are anticipated to generally be Inert Waste.

The receiving waste facility should be consulted as they may be able to handle different wastes with higher acceptance criteria. e.g. The dissolved organic carbon may represent humic matter topsoil or fluoride or sulphate is naturally occurring in London Clay.

With reference to the current List of Wastes (formerly European Waste Catalogue), waste soils and stone derived from construction and demolition sites may be disposed of under either of the following codes as appropriate:

Waste	Code	Description
Hazardous	17 05 03*	soil and stones containing dangerous substances
Non-Hazardous	17 05 04	soil and stones other than those mentioned in 17 05 03

(Note, the asterix is a Mirror Entry, as defined in the List of Wastes, conferring the relationship with the non-hazardous code 17-05-04).

REFERENCES

A number of technical references have been referred to in the preparation of this document, including:

- Smith, I. (2014) Smith's Elements of Soil Mechanics. Chichester. Wiley Blackwell. 9th edition.
- BRE Design Guide 365. Soakaway design ("DG365").
- Radon: Guidance on protective measures for new buildings, BRE Report BR 211, 2023 6th edition.
- The Environment Agency's approach to groundwater protection. February 2018 Version 1.2.
- Water UK and the Home Builders Federation; Contaminated Land Assessment Guidance, dated January 2014.
- Concrete – Complementary British Standard to BS EN 206 - Method of specifying and guidance for the specifier BS 8500-1:2023 - TC, dated November 2023.
- Revised EU Waste Framework Directive 2008 2008/98/EC [transposed into English law under The Waste (England and Wales) Regulations 2011].
- European Community (EC) Directive 1999/31/EC [transposed into English law under the Landfill (England and Wales) Regulations 2002].
- Defining Waste Recovery - Permanent Deposit of Waste on Land, EPR13 v1.0, EA 2010.
- The definition of waste: Development Industry Code of Practice, v2, CL:AIRE 2011.
- Guidance on the classification and assessment of waste Technical Guidance WM3 ("WM3") EA publication (1st edition v1.2GB) dated 2021.

REPORT CONDITIONS

The Client

This report may only be used by the client named in section 1 and their appointed project team for the purpose of design, obtaining planning, building regulations approval, and in connection with finance. This report must not be used by any other persons or for other purposes without express written agreement of Land Science.

General

Land Science takes all reasonable professional care in the preparation of this report, using current standards and industry practice. However, the evaluation of ground conditions depends on an interpretation and extrapolation of the conditions revealed by a limited data set. The level of risk is related to the extent of investigation and no site is ever free of risk. The client should understand their risks and liabilities. We accept no liability whatsoever in respect of:

- The scope, extent or design of an investigation.
- Any conditions not directly revealed by the investigation.
- Published standards or methodologies used or adopted in this report.
- The opinion of any other party including any regulator, authority or stakeholder.
- Any dispute, claim or consequential loss arising from any findings of this report.
- Third party information and data.

This report relates solely to ground-related matters as set out in the objectives and makes no representation on other matters such as ecology, arboriculture, invasive plant species, the condition of buildings and structures, hazardous building materials such as insulation or asbestos, the locations of boundaries, unexploded ordnance, and or planning constraints etc. Further reports should be commissioned in this respect as appropriate.

Regulators and Approvals

This (and any other) report should be submitted to relevant authorities for their own assessments and to provide their approval or comments accordingly. This should be in good time before commencing on site in case additional work is to be carried out.

Standards, technical guidance and regulatory positions change over time and may therefore affect the findings and recommendations made in this report; this should be verified by the client prior to any critical project milestones. Where this information is used in design, the designer should verify that the information is appropriate and has been used correctly.

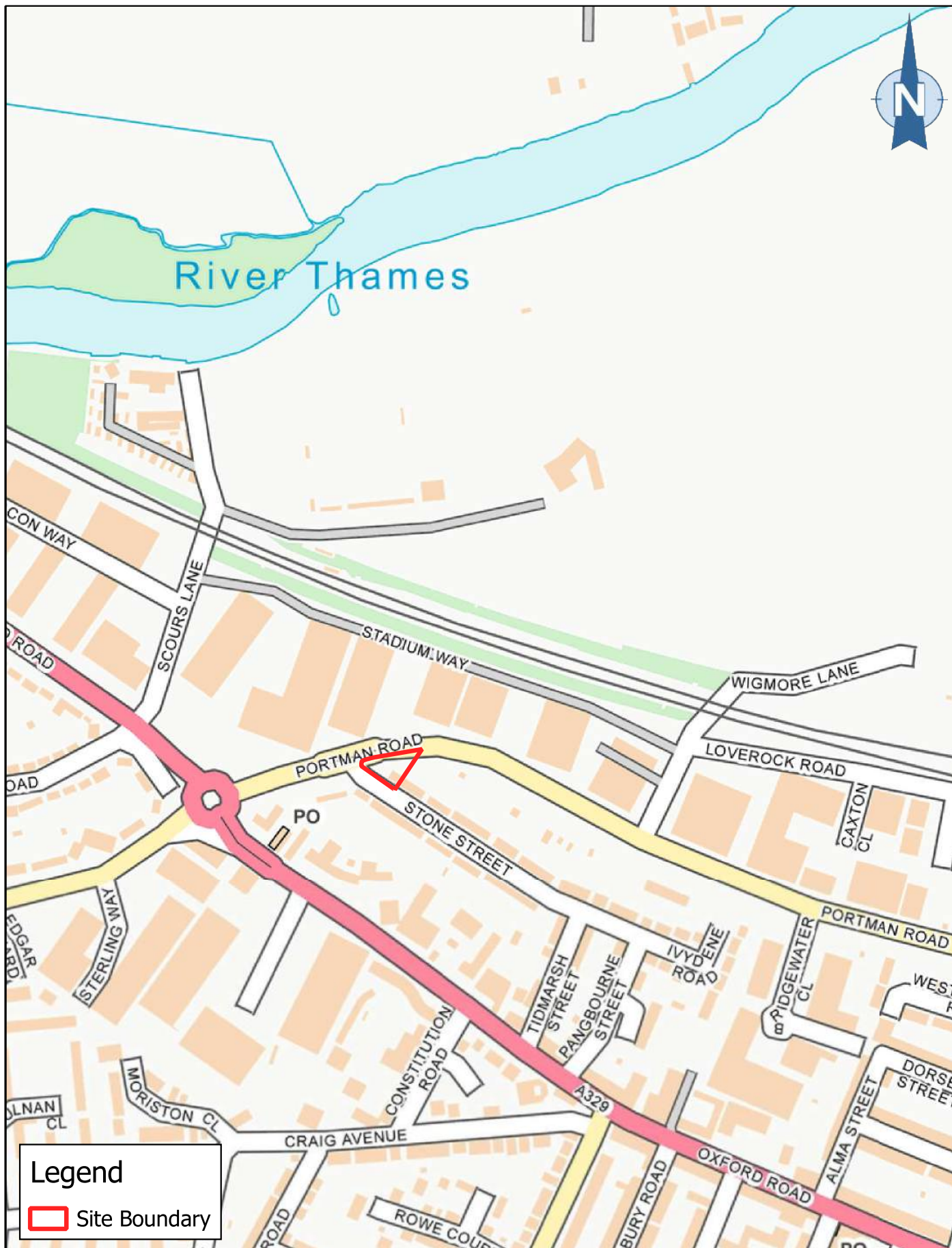
Variations with Time

The report relates to conditions revealed at the time of the investigation and any monitoring visits. Some parameters may vary over time or seasonally; groundwater levels, ground gas compositions, or concentrations of contaminants are particularly variable in this respect. Further monitoring or verification should be considered as appropriate.

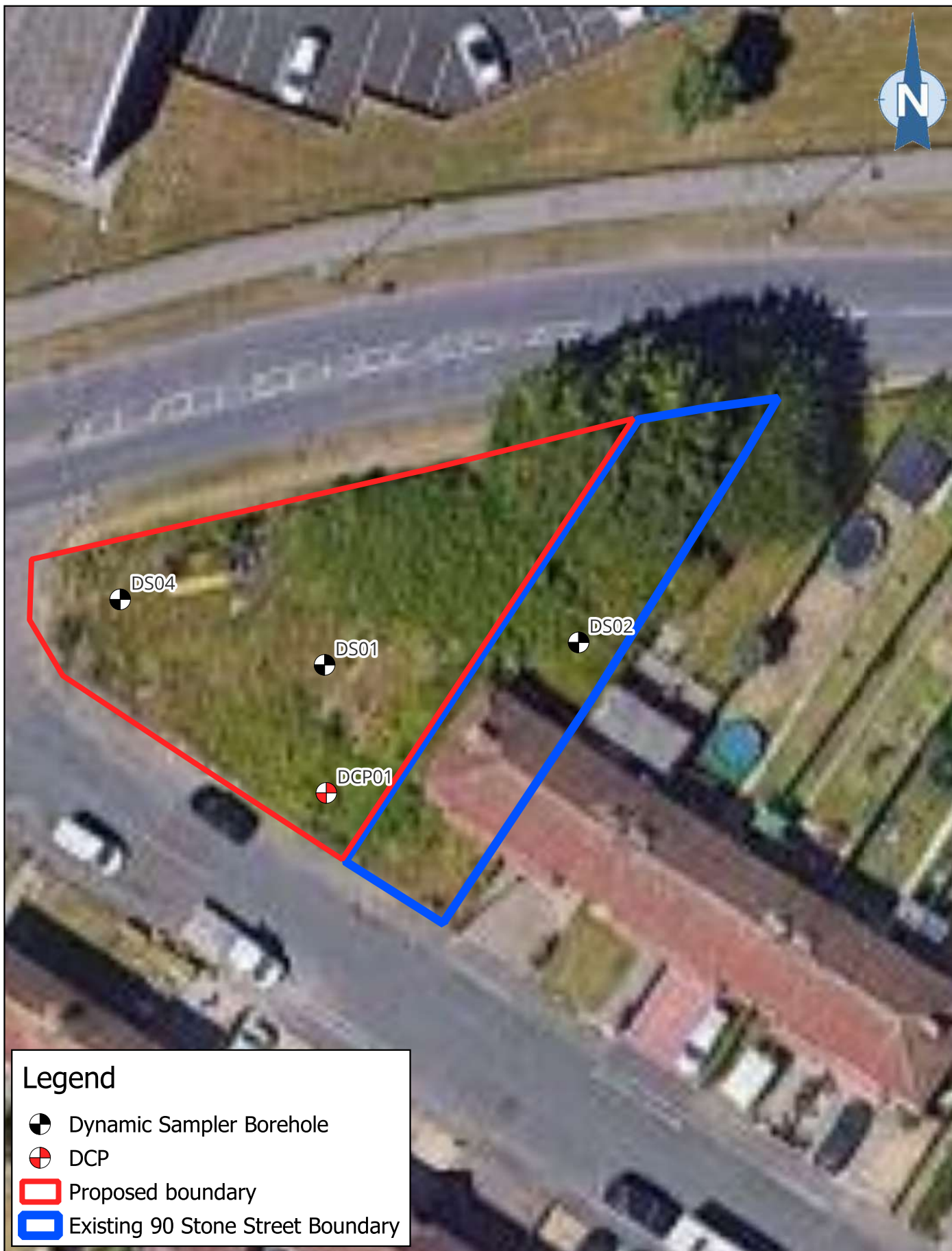
GLOSSARY OF TERMS

ACM	Asbestos Containing Material
BGS	British Geological Survey
BRE	Building Research Establishment
BS	British Standard
C4SL	Category 4 Screening Level
CBR	California Bearing Ratio
CDM	Construction Design and Management regulations
CIRIA	Construction Industry Research and Information Association
CL:AIRE	Contaminated Land: Applications in Real Environments
CLEA	Contaminated Land Exposure Assessment model
CSM	Conceptual Site Model
EA	Environment Agency
EQS	Environmental Quality Standards
FOC	Fraction of Organic Carbon
GAC	Generic Assessment Criterion
GQRA	Generic Quantitative Risk Assessment
mbgl	Meters Below Ground Level
NHBC	National House Building Council
mOD	Metres above Ordnance Datum
PAH's	Polycyclic Aromatic Hydrocarbons
PHE	Public Health England
PID	Photo-Ionisation Detector
PQRA	Preliminary Quantitative Risk Assessment
PSD	Particle Size Distribution Test
RMS	Remediation Method Statement
S4UL	Suitable for Use Level
SOM	Soil Organic Matter
SPZ	Source Protection Zone
SPT	Standard Penetration Test
SSSI	Sites of Special Scientific Interest
ST-WEL	Short Term Workplace Exposure Limit
SVOC's	Semi-Volatile Organic Compounds
TPH	Total Petroleum Hydrocarbons
TRRL / TRL	Transport Road Research Laboratory
TWA-WEL	Time Weighted Average Workplace Exposure Limit
UK HBF	United Kingdom House Building Federation
VOC's	Volatile Organic Compounds
WAC	Waste Acceptance Criteria

FIGURES



	Title: Site Location Plan			Reference: LS8952
	Project: 90 Stone Street, Reading, RG30 1HU			Figure: 1
	Client: Chartom Grace Ltd			Date: 27/11/2025
	Prepared by: AL	Checked by: AL	Version: 0.1	Sheet: 1 of 1



Legend

-  Dynamic Sampler Borehole
-  DCP
-  Proposed boundary
-  Existing 90 Stone Street Boundary



Title: Investigation Layout

Reference: LS8925

Project: 90 Stone Street, Reading, RG30 1HU

Figure: 2

Client: Chartom Grace Ltd

Date: 27/11/2025

Prepared by: AL

Checked by: JT

Version: 0.2

Sheet: 1 of 1



Legend

-  Dynamic Sampler Borehole
-  DCP
-  Proposed Boundary
-  Existing 90 Stone Street Boundary



Title: Proposed Layout			Reference: LS8952
Project: 90 Stone Street, Reading, RG30 1HU			Figure: 3
Client: Chartom Grace Ltd			Date: 27/11/2025
Prepared by: AL	Checked by: JT	Version: 0.2	Sheet: 1 of 1

APPENDIX A

SITE WALKOVER RECORD



The walkover is restricted only to aspects related to the Land Science report and the stated objectives therein. The walkover does not replace other surveys such as asbestos, arboriculture, ecology, utilities etc which the client should consider. The client should review the walkover and provide any further relevant information where available.

SITE DETAILS			
Project	90 Stone Street, Reading, RG30 1HU		
Reference	LS8952	Date of walkover	01/12/25
Engineer	Alex Lintern		
CURRENT USE			
Existing land uses	Residential – a two-storey house with associated rear garden and front driveway. The plot next door to no. 90 is empty and comprises bare cleared ground.		
Status	Active		
Suspected asbestos	No immediate evidence.		
Below ground structures	No immediate evidence.		
Hardstandings	None present on site. Asphalt pavement noted to be just offsite to the south/southwest.		
Soft landscaping	Minimal, strips of grass running alongside the wooden fencing and adjacent to the pavement to the south/southwest.		
General condition	Bare and empty plot in good condition but with some piles of building waste.		
Boundaries	Wooden fencing borders the site to the north/northeast whilst a metal barrier borders the site to the south/southwest.		
Adjacent land uses	Residential houses to the south/southeast and south/southwest. Industrial/commercial units approximately 35m to the north/northwest.		
TOPOGRAPHY			

General lie of the land	<i>Located on a relatively flat low lying plane</i>
General lie of the site	<i>Sensibly flat and level</i>
Abrupt changes in slope	<i>None recorded</i>
Excavations and Depressions	<i>None recorded.</i>
Raised ground	<i>None recorded.</i>
GROUND STABILITY	
Signs of landslip	<i>None recorded.</i>
Cracking in buildings and walls etc	<i>None recorded.</i>
Subsidence on ground surface	<i>None recorded.</i>
GROUND CONDITIONS	
Possible filled-in ground	<i>None recorded.</i>
Possible built-up ground	<i>None recorded.</i>
Exposed soils	<i>Exposed bare soil visible on site after vegetation clearance and removal.</i>
Desiccation	<i>None recorded.</i>
Disturbance	<i>None recorded.</i>
WATER CONDITIONS	
Wet boggy ground	<i>None recorded.</i>
Wells and ditches	<i>None recorded.</i>

Ponds or ponding	<i>None recorded.</i>
Streams / Rivers	<i>Nearest river is the River Thames running northwest to southeast, approximately 412m to the north.</i>
ECOLOGY	
Burrows	<i>None recorded.</i>
VEGETATION	
Reeds or water loving plants	<i>None recorded.</i>
Sparse growth or die back	<i>None recorded.</i>
Invasive species	<i>None recorded.</i>
TREES	
Relevant trees height/species	<i>Possible large oak tree in the northeast corner of the site approximately 7-8m in height.</i>
Off-site	<i>None recorded.</i>
Hedgerows	<i>None recorded.</i>
Recent felling and older stumps	<i>None recorded.</i>
CONTAMINATION	
Tipped materials	<i>Some piles of bricks and building waste noted on site.</i>
Areas of possible fill	<i>None recorded.</i>
Discolouration/sheens of waterbodies	<i>None recorded.</i>
Surface staining	<i>None recorded.</i>

Chemicals storage	<i>None recorded.</i>
Drums and tanks	<i>None recorded.</i>
Petrol interceptor	<i>None recorded.</i>
Soakaways	<i>None recorded.</i>
LOCAL INFORMATION	
Place/road names	
3rd party information	
OTHER INFORMATION	

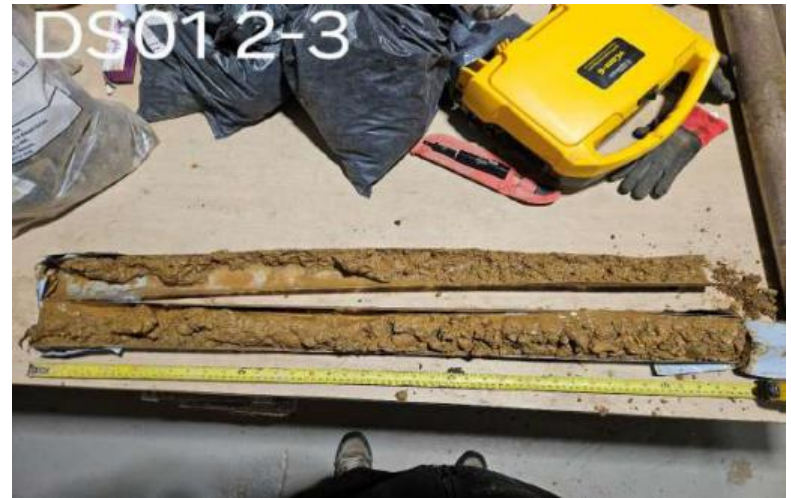
APPENDIX B



TITLE:	Photosheet	REF:	LS8952	PREPARED:	AL
PROJECT:	90 Stone Street, Reading, RG30 1HU	SHEET:	1 OF 4	CHECKED:	AL
CLIENT:	Chartom Grace Ltd	DATE:	12/18/2025	VERSION	v1



	TITLE:	Photosheet	REF:	LS8952	PREPARED:	AL
	PROJECT:	90 Stone Street, Reading, RG30 1HU	SHEET:	2 OF 4	CHECKED:	AL
	CLIENT:	Chartom Grace Ltd	DATE:	12/18/2025	VERSION	v1



	TITLE:	Photosheet	REF:	LS8952	PREPARED:	AL
	PROJECT:	90 Stone Street, Reading, RG30 1HU	SHEET:	3 OF 4	CHECKED:	AL
	CLIENT:	Chartom Grace Ltd	DATE:	12/18/2025	VERSION	v1



TITLE:	Photosheet	REF:	LS8952	PREPARED:	AL
PROJECT:	90 Stone Street, Reading, RG30 1HU	SHEET:	4 OF 4	CHECKED:	AL
CLIENT:	Chartom Grace Ltd	DATE:	12/18/2025	VERSION	v1

APPENDIX C

Site 90 Stone Street, Reading, RG30 1HU	Number DS01
Client Chartom Grace Ltd	Job Number LS8952
Engineer AL	Sheet 1/2

Excavation Method Drive-in Windowless Sampler		Dimensions		Ground Level (mOD)	
		Location		Dates 01/12/2025	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)
0.00-0.50	B				
0.10	HP 18.33kPa		10, 25, 20/Av. 18.33		(0.70)
0.50	HP 35kPa		25, 30, 50/Av. 35.00		0.70
0.80	D		PID = 0.7ppm		
0.80	HP 33.33kPa		25, 50, 25/Av. 33.33		
1.00-1.45	SPT(C) N=53		7,9/11,12,14,16		(1.30)
1.40	D		PID = 0.4ppm		
1.40	HP 35kPa		25, 50, 30/Av. 35.00		
1.80	D		PID = 0.2ppm		
1.80	HP 26.67kPa		30, 25, 25/Av. 26.67		2.00
2.00-2.45	SPT(C) N=20		6,7/6,8,3,3		
2.10	D		PID = 0.5ppm		
2.50	D		PID = 1.10ppm		(1.50)
3.00	D		Water strike(1) at 3.00m, rose to 2.80m in 20 mins.		
3.00-3.45	SPT(C) N=7		PID = 1.40ppm 2,2/2,2,1,2		
3.40	D		PID = 1.20ppm		3.50
3.60	D		PID = 0.4ppm		(0.50)
3.90-4.00	D		PID = 0.4ppm		
4.00-4.45	SPT(C) N=34		6,7/6,9,11,8		4.00

Soft dark brown sandy, gravelly CLAY with abundant rootlets and rare roots. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint, clinker and rare aggregates. (MADE GROUND)
... Rare roots up to 0.10m in length noted between 0.00-0.50mbgl.

Very stiff dark brown sandy, gravelly CLAY with rare rootlets. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint. (HEAD DEPOSIT)

Loose to medium dense dark to light brown silty, sandy, GRAVEL. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint. (TAPLOW GRAVEL MEMBER)

Dense light brown sandy, slightly gravelly SILT with frequent bands of darker sand. Sand is fine to medium. Gravels are fine, angular to subrounded flint. (TAPLOW GRAVEL MEMBER)

Remarks GROUNDWATER: Groundwater encountered at 3.00mbgl where after monitoring for 20 minutes the level had risen to 2.80mbgl. CASING: No casing used. INSTALLATION: None. BACKFILL: Backfilled with arisings and bentonite sealing pellets. STABILITY: Borehole was noted to become unstable and suffer partial collapse from 3.50mbgl. NOTES: Borehole terminated at 4.00mbgl due to partial borehole collapse and damage to the sand/gravel catcher preventing the retention of granular samples.	Scale (approx)	Logged By
	1:20	AL
	Figure No. LS8952.DS01	

Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Chartom Grace Ltd	Job Number LS8952
	Location	Dates 01/12/2025	Engineer AL	Sheet 2/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
4.50-4.95	SPT(C) N=45		11,10/10,11,12,12					
5.00-5.45	SPT(C) N=57		14,12/12,14,14,17					

Remarks GROUNDWATER: Groundwater encountered at 3.00mbgl where after monitoring for 20 minutes the level had risen to 2.80mbgl. CASING: No casing used. INSTALLATION: None. BACKFILL: Backfilled with arisings and bentonite sealing pellets. STABILITY: Borehole was noted to become unstable and suffer partial collapse from 3.50mbgl. NOTES: Borehole terminated at 4.00mbgl due to partial borehole collapse and damage to the sand/gravel catcher preventing the retention of granular samples.	Scale (approx) 1:20	Logged By AL
	Figure No. LS8952.DS01	

Excavation Method Drive-in Windowless Sampler	Dimensions	Ground Level (mOD)	Client Chartom Grace Ltd	Job Number LS8952
	Location	Dates 01/12/2025	Engineer AL	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.50	B					Stiff dark brown silty, very sandy, gravelly CLAY with abundant rootlets. Sand is fine to coarse. Gravels are fine to coarse, subangular to subrounded flints. (HEAD DEPOSIT)		
0.10	HP 15kPa		10, 25, 10/Av. 15.00					
0.50	HP 25kPa		25, 25, 25/Av. 25.00		(1.40)	Very loose dark brown clayey, silty, gravelly SAND. Sand is fine to coarse. Gravels are fine to cobbled, angular to rounded flints. (TAPLOW GRAVEL MEMBER)		
1.00 1.00 1.00-1.45	D HP 33.33kPa SPT(C) N=24		PID = 0.5ppm 25, 25, 50/Av. 33.33 3,7/7,7,5,5		1.40			
1.50	D		PID = 1.00ppm			Dark to light brown silty, sandy, GRAVEL. Sand is fine to coarse. Gravels are fine to cobbled, angular to rounded flints. (TAPLOW GRAVEL MEMBER)		
2.00 2.00-2.45	D SPT(C) N=2		PID = 0.5ppm 2,1/1,0,0,1		(1.30)			
2.30	D		PID = 1.50ppm			Terminated at 3.00m		
2.60 2.70-3.00	D D		PID = 1.00ppm PID = 1.00ppm		2.70 (0.30) 3.00			

Remarks

GROUNDWATER: None encountered.
CASING: No casing used.
INSTALLATION: None.
BACKFILL: Backfilled with arisings and bentonite sealing pellets.
STABILITY: Borehole had partial collapse from 2.50-3.00mbgl.
NOTES: NOTES: Borehole terminated at 3.00mbgl due to partial borehole collapse from 3.00-2.70mbgl and damage to the sand/gravel catcher preventing the retention of granular samples.

Scale (approx)
1:25

Logged By
AL

Figure No.
LS8952.DS02

Excavation Method
Drive-in Windowless Sampler

Dimensions

Ground Level (mOD)

Client
Chartom Grace Ltd

Job Number
LS8952

Location

Dates
01/12/2025

Engineer
AL

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.50	B							
0.10	HP 25kPa		25, 25, 25/Av. 25.00		(0.70)	Soft dark brown slightly silty, sandy, gravelly CLAY with rootlets. Sand is fine to medium. Gravels are fine to coarse, subangular to subrounded flint, brick and rare coal. (MADE GROUND)		
0.50	HP 33.33kPa		25, 25, 50/Av. 33.33		0.70			
0.50-0.70	D		PID = 0.6ppm		(0.30)	Loose light brown silty, gravelly SAND. Sand is fine to coarse. Gravels are fine to coarse, angular to rounded flint. (TAPLOW GRAVEL MEMBER)		
0.70-1.00					1.00			
1.00-1.45	SPT(C) N=44		10,10/11,11,10,12			Loose to dense dark brown to orange SAND AND GRAVEL. Sand is fine to coarse. Gravels are fine to coarse, angular to rounded flint. (TAPLOW GRAVEL MEMBER)		
1.20	D		PID = 0.5ppm					
						... Pocket of clay between 1.50-1.80mbgl.		
1.60	D							
1.90	D		PID = 0.4ppm		(2.00)			
2.00-2.45	SPT(C) N=39		7,10/12,9,9,9					
2.20	D		PID = 0.4ppm					
						... Band of very light brown/white sand and abundant flint between 2.40-2.60mbgl.		
2.50	D		PID = 0.3ppm					
2.80	D		PID = 0.2ppm		3.00			
3.00-3.45	SPT(C) N=4		Water strike(1) at 3.00m, rose to 2.80m in 20 mins. 3,3/2,1,0,1			Complete at 3.00m		

Remarks

GROUNDWATER: Groundwater encountered at 3.00mbgl where after 20 minutes the level had risen to 2.80mbgl where it remained.
CASING: No casing used.
INSTALLATION: None.
BACKFILL: Backfilled with arisings and bentonite sealing pellets.
STABILITY: Slight instability noted around 2.50mbgl.
NOTES: Borehole completed at target depth.

Scale (approx)

1:20

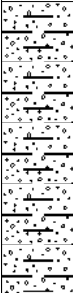
Logged By

AL

Figure No.

LS8952.DS04

DCP Details DCP Details		Excavation Method		Ground Level (mOD)		Client Chartom Grace Ltd		Job Number LS8952	
		Location		Dates 01/12/2025		Engineer AL		Sheet 1/1	

Depth (m)	Sample / Tests	Layer CBR % Value	CBR Value Per Blow	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
			1 10 100					
		1.8				Soft dark brown sandy, gravelly CLAY with abundant rootlets. Sand is fine to coarse. Gravels are fine to coarse, angular to subrounded flint. (HEAD DEPOSIT)		
		5.6						
		16			(1.00)			
		10						
					1.00			
						Complete at 1.00m		

Plan					Remarks GROUNDWATER: None encountered. CASING: No casing used. INSTALLATION: None. BACKFILL: Backfilled with arisings. STABILITY: Stable to depth. NOTES: Completed to target depth.			
					Scale (approx)		Logged By	Figure No.
					1:25		AL	LS8952.DCP01



Laboratory Report



Contract Number: 83330

Client Ref: **LS8952**

Client PO: **LS8952**

Date Received: **15-12-2025**

Date Completed: **07-01-2026**

Report Date: **07-01-2026**

Client: **Land Science**

This report has been checked and approved by:

Contract Title: **90 Stone Street, Reading, RG30 1HU**

For the attention of: **Alex Lintern**

Shaun Jones
Laboratory manager

Description	Qty
CBR: Remoulded Specimen and tested at top only BS 1377-2:2022 Clause 15 - * UKAS	3

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Jason Jenkins (Business Development Manager)
Luke Williams (Senior Laboratory Technician) - Paul Evans (Director) - Richard John (Quality/Technical Manager)
Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Vince Williams (Site Technician)
Wayne Honey (HR & HSE Manager)

**Determination of California Bearing Ratio (CBR)
BS 1377-2:2022 Clause 15**

Contract Number 83330

Borehole/Pit No. DS01

Project Name 90 Stone Street, Reading, RG30 1HU

Sample No. 0

Soil Description Grey/ brown slightly sandy silty fine to medium gravelly CLAY

Depth Top 0.00

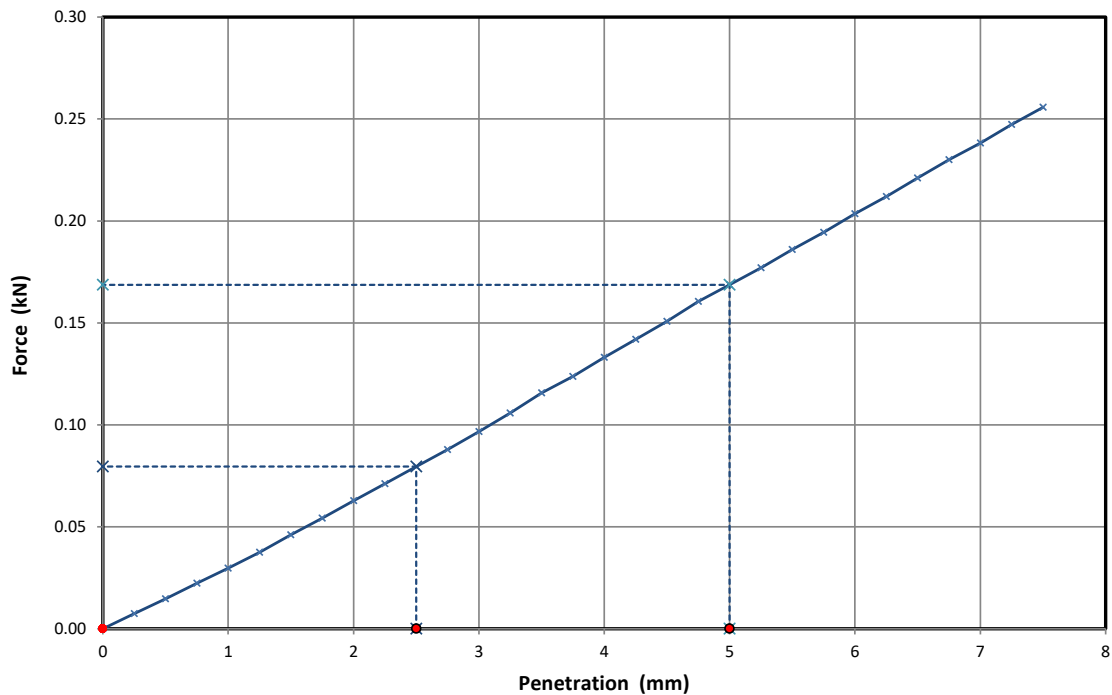
Compaction Method 2.5 Kg Rammer

Depth Base

Material Retained on 20mm Sieve Removed (%) 0

Sample Type B

Date Tested 06/01/2026



Initial Sample Conditions	
Water Content (%)	14.6
Water Content Top (%)	14.7
Water Content Base (%)	
Bulk Density (Mg/m3)	2.17
Dry Density (Mg/m3)	1.89

Specified Testing Parameters	
Surcharge Applied (Kg)	2
Soaking Time (Days)	N/A
Amount of Swelling recorded (mm)	N/A
Final Sample Conditions After Soaking	
Dry Density (Mg/m3)	N/A

Curve Correction Applied	
Top	Base
No	No

CBR Test Values			
2.5mm Top	0.6	2.5mm Base	
5mm Top	0.8	5mm Base	
CBR Value %	0.8	CBR Value %	

Remarks

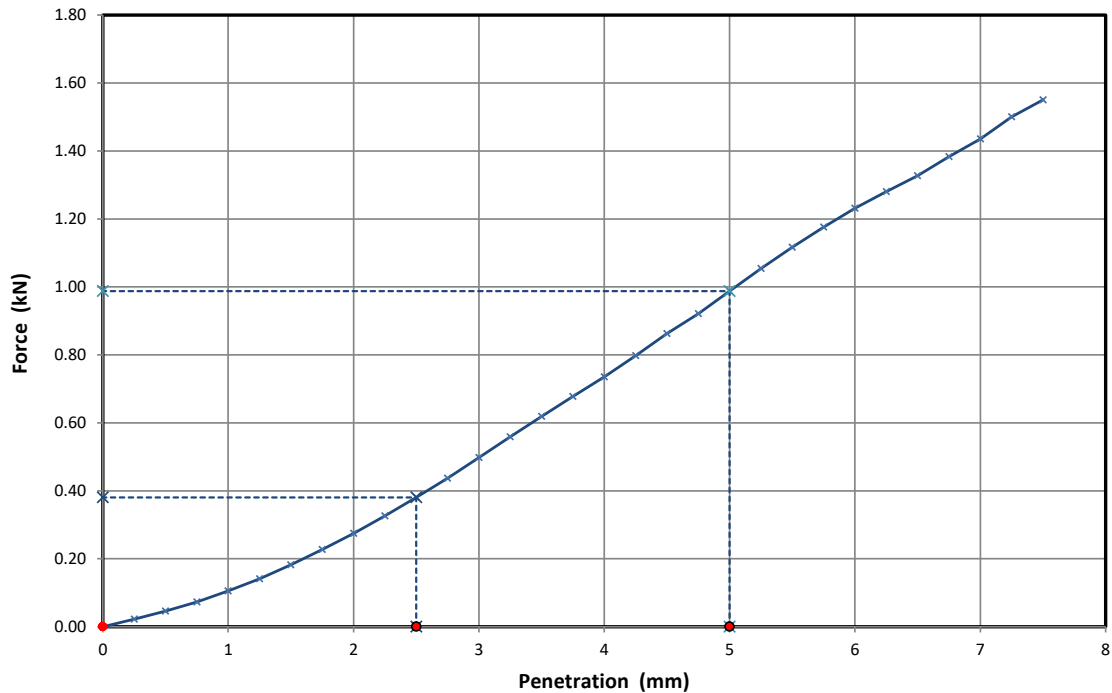
Operator
Cameron. E

**Determination of California Bearing Ratio (CBR)
BS 1377-2:2022 Clause 15**

Contract Number 83330

Borehole/Pit No. DS02

Project Name	90 Stone Street, Reading, RG30 1HU	Sample No.	0
Soil Description	Grey/ brown slightly sandy silty fine to medium gravelly CLAY	Depth Top	0.00
Compaction Method	2.5 Kg Rammer	Depth Base	
Material Retained on 20mm Sieve Removed (%)	0	Sample Type	B
Date Tested	06/01/2026		



Initial Sample Conditions	
Water Content (%)	7.7
Water Content Top (%)	8.0
Water Content Base (%)	
Bulk Density (Mg/m3)	2.28
Dry Density (Mg/m3)	2.12

Specified Testing Parameters	
Surcharge Applied (Kg)	2
Soaking Time (Days)	N/A
Amount of Swelling recorded (mm)	N/A
Final Sample Conditions After Soaking	
Dry Density (Mg/m3)	N/A

Curve Correction Applied	
Top	Base
No	No

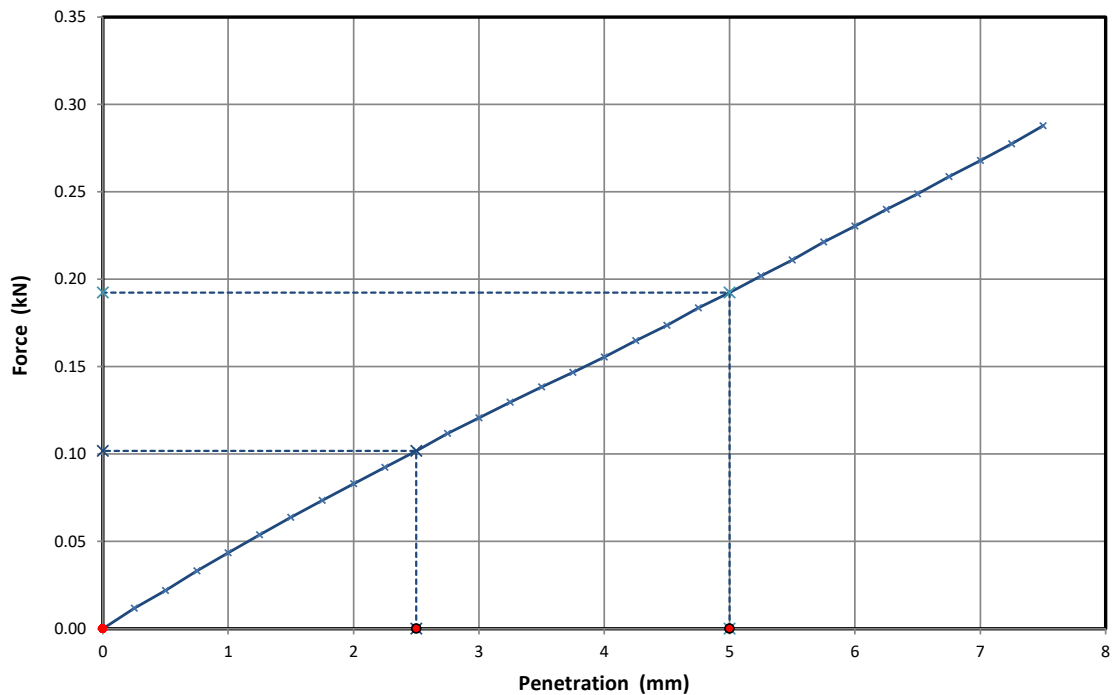
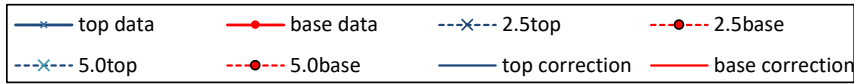
CBR Test Values			
2.5mm Top	2.9	2.5mm Base	
5mm Top	4.9	5mm Base	
CBR Value %	4.9	CBR Value %	

Remarks

Operator
Cameron. E

**Determination of California Bearing Ratio (CBR)
BS 1377-2:2022 Clause 15**

Contract Number	83330	Project Name	90 Stone Street, Reading, RG30 1HU	Sample No.	0
Borehole/Pit No.	DS04	Soil Description	Grey/ brown slightly sandy silty fine to medium gravelly CLAY	Depth Top	0.00
Compaction Method	2.5 Kg Rammer	Depth Base			
Material Retained on 20mm Sieve Removed (%)	0	Sample Type		B	
Date Tested	06/01/2026				



Initial Sample Conditions	
Water Content (%)	14.5
Water Content Top (%)	14.6
Water Content Base (%)	
Bulk Density (Mg/m3)	2.14
Dry Density (Mg/m3)	1.87

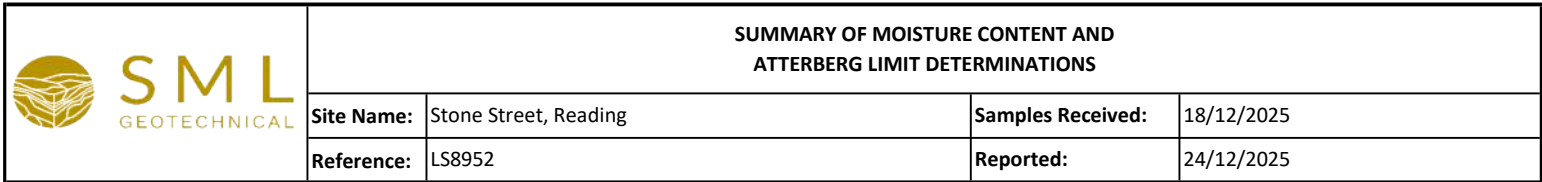
Specified Testing Parameters	
Surcharge Applied (Kg)	2
Soaking Time (Days)	N/A
Amount of Swelling recorded (mm)	N/A
Final Sample Conditions After Soaking	
Dry Density (Mg/m3)	N/A

Curve Correction Applied	
Top	Base
No	No

CBR Test Values			
2.5mm Top	0.8	2.5mm Base	
5mm Top	1.0	5mm Base	
CBR Value %	1.0	CBR Value %	

Remarks

Operator
Cameron. E



	SUMMARY OF MOISTURE CONTENT AND ATTERBERG LIMIT DETERMINATIONS			
	Site Name:	Stone Street, Reading	Samples Received:	18/12/2025
	Reference:	LS8952	Reported:	24/12/2025

	SUMMARY OF MOISTURE CONTENT AND ATTERBERG LIMIT DETERMINATIONS			
	Site Name:	Stone Street, Reading	Samples Received:	18/12/2025
	Reference:	LS8952	Reported:	24/12/2025

	SUMMARY OF MOISTURE CONTENT AND ATTERBERG LIMIT DETERMINATIONS			
	Site Name:	Stone Street, Reading	Samples Received:	18/12/2025
	Reference:	LS8952	Reported:	24/12/2025

	SUMMARY OF MOISTURE CONTENT AND ATTERBERG LIMIT DETERMINATIONS			
	Site Name:	Stone Street, Reading	Samples Received:	18/12/2025
	Reference:	LS8952	Reported:	24/12/2025

	SUMMARY OF MOISTURE CONTENT AND ATTERBERG LIMIT DETERMINATIONS			
	Site Name:	Stone Street, Reading	Samples Received:	18/12/2025
	Reference:	LS8952	Reported:	24/12/2025

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APPENDIX E



SML Laboratories Ltd
Unit E1, Rosebury Business Park
Brampton Road
Eastbourne BN22 9BN
Tel: 01323 302280
Email: cs@sml-laboratories.co.uk

Analytical Report: 25-000313

Customer: Land Science
Address: Unit 10, Albert Drive, Burgess Hill, RH15 9TN
Name: Alex Lintern
Project: 90 Stone Street, Reading, RG30 1HU
Customer ref: LS8952
Quote ref: -
Sampling date: 01/12/25
Samples received: 03/12/25
Instructions received: 03/12/25
Report issued: 18/12/25
Report issue number: 2

Issue 2 - Amendment Note

Asbestos results added
This report supercedes Issue 1

Report Approved By

A handwritten signature in black ink, appearing to read 'Graham Knight', is written over a horizontal line.

Graham Knight – Laboratory Operations Manager

Sample Summary

Analytical Report: 25-000313 issue 2

SML No.	Client's Ref	Depth (m)	Date Sampled	Date Scheduled	Description	Deviations
2419	DS01	0.50	01/12/25	03/12/25	Sandy Silt Loam	-
2426	DS01	1.40	01/12/25	10/12/25	Sandy Silt Loam	-
2427	DS02	1.50	01/12/25	10/12/25	Sand	-

Analytical Report: 25-000313 issue 2

SML Ref	2419	2426	2427
Customer Ref	-	-	-
Sample ID	-	-	-
Sample Type	Soil	Soil	Soil
Sample Location	DS01	DS01	DS02
Sample Depth (m)	0.50	1.40	1.50
Sampling Date	01/12/25	01/12/25	01/12/25

Determinant	Codes	Units	LOD
-------------	-------	-------	-----

Soil preparation parameters

Moisture Content	N	%	0.1	12.2	12.8	3.76
Material removed	N	%	0.1	34.8	16.3	66.7
Description of inert material removed	N	N/A	N/A	Stones	Stones	Stones

Metals

Beryllium	N	mg/kg	0.5	0.61	-	-
Vanadium	N	mg/kg	1	26.5	-	-
Chromium	N	mg/kg	1	15.2	-	-
Nickel	N	mg/kg	1	14.0	-	-
Copper	N	mg/kg	1	23.8	-	-
Zinc	N	mg/kg	1	100	-	-
Arsenic	N	mg/kg	1	11.7	-	-
Selenium	N	mg/kg	1	<1.0	-	-
Cadmium	N	mg/kg	0.5	<0.50	-	-
Barium	N	mg/kg	1	93.9	-	-
Mercury	N	mg/kg	0.5	<0.50	-	-
Lead	N	mg/kg	1	67.4	-	-

Inorganics

Total Cyanide	N	mg/kg	1	<1.0	-	-
Hexavalent Chromium	N	mg/kg	5	2.91	-	-
Fraction Organic Carbon	N	%	0.005	0.009	-	-
Sulphide	N	mg/kg	2	<2.0	-	-
Water Soluble Boron	N	mg/kg	0.02	0.43	-	-

Miscellaneous

pH	N	pH Units	0.01	8.35	8.12	7.90
Water Soluble Sulphate (2:1)	N	mg/kg	40	<40.0	<40.0	<40.0
Water Soluble Sulphate (2:1)	N	g/l	0.02	<0.02	<0.02	<0.02
Water Soluble Sulphate (2:1)	N	mg/l	20	<20.0	<20.0	<20.0

Analytical Report: 25-000313 issue 2

SML Ref	2419	2426	2427
Customer Ref	-	-	-
Sample ID	-	-	-
Sample Type	Soil	Soil	Soil
Sample Location	DS01	DS01	DS02
Sample Depth (m)	0.50	1.40	1.5
Sampling Date	01/12/25	01/12/25	45992

Determinant	Codes	Units	LOD
-------------	-------	-------	-----

Phenols

Phenol	N	mg/kg	1	<1.0	-	-
M,P-Cresol	N	mg/kg	1	<1.0	-	-
O-Cresol	N	mg/kg	1	<1.0	-	-
3,4-Dimethylphenol	N	mg/kg	1	<1.0	-	-
2,3-Dimethylphenol	N	mg/kg	1	<1.0	-	-
Napthol	N	mg/kg	1	<1.0	-	-
2,3,5-Trimethylphenol	N	mg/kg	1	<1.0	-	-
Total Monohydric Phenols	N	mg/kg	7	<7.0	-	-

Polyaromatic Hydrocarbons

Napthalene	N	mg/kg	0.02	<0.02	-	-
Acenaphthylene	N	mg/kg	0.02	<0.02	-	-
Acenaphthene	N	mg/kg	0.02	<0.02	-	-
Fluorene	N	mg/kg	0.02	<0.02	-	-
Phenanthrene	N	mg/kg	0.02	0.12	-	-
Anthracene	N	mg/kg	0.02	0.18	-	-
Fluoranthene	N	mg/kg	0.02	0.31	-	-
Pyrene	N	mg/kg	0.02	0.39	-	-
Benzo(a)anthracene	N	mg/kg	0.02	0.57	-	-
Chrysene	N	mg/kg	0.02	0.52	-	-
Benzo(b)fluoranthene	N	mg/kg	0.02	0.64	-	-
Benzo(k)fluoranthene	N	mg/kg	0.02	0.40	-	-
Benzo(a)pyrene	N	mg/kg	0.02	0.51	-	-
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.02	<0.02	-	-
Dibenzo(a,h)anthracene	N	mg/kg	0.02	<0.02	-	-
Benzo[g,h,i]perylene	N	mg/kg	0.02	0.28	-	-
Coronene	N	mg/kg	0.02	<0.02	-	-
Total PAH(17)	N	mg/kg	0.34	3.91	-	-

TPH

Total TPH (C10 – C40)	N	mg/kg	1	66.6	-	-
-----------------------	---	-------	---	------	---	---

Analytical Report: 25-000313 issue 2

WAC Analysis

SML Ref:	2419				Landfill WAC Limits*		
Sample Date:	01/12/2025				Inert Waste Landfill	Stable non- Reactive Hazardous Waste in non- Hazardous Landfill	Hazardous Waste Landfill
Sample ID:	DS01						
Depth (m):	0.50						
Site:	90 Stone Street, Reading, RG30 1HU						
Determinand	Code	Units					
Total Organic Carbon	N	%		0.9	3	5	6
Loss on Ignition	N	%		3.24	-	-	10
Total BTEX	N	mg/kg		<0.07	6	-	-
Total PCB (7 congeners)	N	mg/kg		<0.28	1	-	-
TPH Total WAC (EH_CU_1D_Total)	N	mg/kg		<10.0	500	-	-
pH	N	Units		8.35	-	>6	-
Acid Neutralisation Capacity	N	mol/kg		0.05	-	-	-
Eluate Analysis		10:1		10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg		
		mg/l		mg/kg			
Arsenic	N	0.0015		0.015	0.5	2	25
Barium	N	0.0034		0.034	20	100	300
Cadmium	N	<0.0005		<0.005	0.04	1	5
Chromium	N	<0.0005		<0.005	0.5	10	70
Copper	N	0.003		0.03	2	50	100
Mercury	N	<0.0001		<0.001	0.01	0.2	2
Molybdenum	N	<0.0005		<0.005	0.5	10	30
Nickel	N	0.0006		0.006	0.4	10	40
Lead	N	<0.0005		<0.005	0.5	10	50
Antimony	N	<0.001		<0.01	0.06	0.7	5
Selenium	N	<0.001		<0.01	0.1	0.5	7
Zinc	N	0.0029		0.029	4	50	200
Chloride	N	6.41		64.1	800	15000	25000
Fluoride	N	<0.5		<5.0	10	150	500
Sulphate	N	7.71		77.1	1000	20000	50000
Total Dissolved Solids	N	52.7		527	4000	60000	100000
Phenol Index	N	<0.1		<1.0	1	-	25
Dissolved Organic Carbon	N	14.7		147	500	800	1000

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*Stated limits are for guidance only, and not for conformity assessment.

Analytical Report: 25-000313 issue 2

Asbestos Screening

SML Sample Reference	Client Reference	Depth (m)	Sample Matrix Description	Asbestos Identification	Gravimetric Analysis Total %	Gravimetric Analysis by ACM Type %	Free fibre Analysis %	Total Asbestos %
2419	DS01	0.50	Soil	NAD	N/T	N/T	N/T	N/T

NAD - No Asbestos Detected

N/T - Not tested

Analytical Report: 25-000313 issue 2

Method Summary

Soil					
Parameter	Codes	Undertaken On	Date Tested	Method Number	Technique
pH value	N	Air dried sample	08/12/25	105	Electrometric
Water Soluble Sulphate	N	Air dried sample	11/12/25	130	Ion Chromatography
Total Cyanide	N	As submitted sample	05/12/25	137	Colorimetric
Phenols	N	As submitted sample	05/12/25	111	HPLC
Asbestos ID	SU	Subcontracted	17/12/25	Subcontracted	Microscopy
Loss On Ignition	N	Air dried sample	08/12/25	115	Gravimetric
Acid Neutralisation Capacity	N	Air dried sample	08/12/25	150	Electrometric
Hexavalent Chromium	N	As submitted sample	05/12/25	103	Discrete Analyser
Total (of 16) PAH	N	As submitted sample	05/12/25	116	GC-MS
Total BTEX	N	As submitted sample	05/12/25	134	GC-MS
Sulphide	N	As submitted sample	08/12/25	117	Discrete Analyser
TOC	N	Air dried sample	08/12/25	139	Titration
Total TPH C10-C40	N	As submitted sample	06/12/25	128	GC-FID
Water Soluble Boron	N	Air dried sample	08/12/25	136	Discrete Analyser
Total Metals	N	Air dried sample	05/12/25	148	ICP-MS
PCB 7 Congeners	N	Air dried sample	08/12/25	110	GC-MS
Mineral Oil (EH_CU_1D-Total)	N	As submitted sample	06/12/25	128	GC-FID

Leachate					
Parameter	Codes	Undertaken On	Date Tested	Method Number	Technique
Anions	N	10:1 WAC leachate	05/12/25	152	Ion Chromatography
Dissolved Metals	N	10:1 WAC leachate	05/12/25	149	ICP-MS
Phenols	N	10:1 WAC leachate	05/12/25	111	HPLC
Electrical Conductivity	N	10:1 WAC leachate	05/12/25	118	Probe
DOC	N	10:1 WAC leachate	05/12/25	101	TOC Analyser
TDS	N	10:1 WAC leachate	05/12/25	In-House	Calculation

Analytical Report: 25-000313 issue 2

Key

Symbol	Description
U	Hold UKAS accreditation
M	Hold MCERTS accreditation
N	Not accredited
NS	Sample matrix not UKAS accredited
NM	Sample matrix not MCERTS accredited
SU	Subcontracted to a UKAS accredited laboratory
SM	Subcontracted to an MCERTS accredited laboratory
IS	Insufficient sample
US	Unsuitable sample
NT	Not tested
NAD	No asbestos detected
<	Less than
>	Greater than

Soil samples are expressed on an air dried <30°C basis and are **not** corrected for inert material removed.

LOD refers to limit of detection, except in the case of pH where it refers to limit of discrimination.

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



T4JKM-3BIJV-XE3L8

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Report is invalid if pages are removed.

Job name

LS8952

Description/Comments

Project

LS8952

Site

90 Stone Street, Reading, RG30 1HU

Classified by

Name: **Jos Middleton**
Date: **19 Dec 2025 08:58 GMT**
Telephone: **01444 712 870**
Company: **SML Laboratories**
Unit 10, 19 Albert Drive
Burgess Hill
RH15 9TN.

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

-

Course

Hazardous Waste Classification

Date

-

Purpose of classification

2 - Material Characterisation

Address of the waste

90 Stone Street, Reading

Post Code RG30 1HU

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment for residential housing

Description of the specific process, sub-process and/or activity that created the waste

Waste from foundation excavations

Description of the waste

Made Ground: slightly silty, sandy, gravelly CLAY, with flint, clinker, aggregate, brick and rare coal.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	DS01	0.5	Potentially Hazardous	HP 2	3

Related documents

#	Name	Description
1	Land Science Template WM3 v1.2GB	waste stream template used to create this Job

Report

Created by: Jos Middleton

Created date: 19 Dec 2025 08:58 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	6
Appendix B: Rationale for selection of metal species	7
Appendix C: Version	8

Classification of sample: DS01

*** Potentially Hazardous Waste**
Classified as **17 05 04** or **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
DS01	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 or 17 05 03 * (Soil and stones other than those mentioned in 17 05 03 or Soil and stones containing hazardous substances)
12.2%	
(no correction)	

Hazard properties (substances considered hazardous until shown otherwise)

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide (compound conc.: 0.00056%)

Ox. Sol. 2; H272 "May intensify fire; oxidiser."

Because of determinand:

barium chromate (compound conc.: 0.0173%)

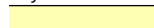
Determinands

Moisture content: 12.2% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH				8.35 pH		8.35 pH	8.35 pH		
2	phenol				<7 mg/kg		<7 mg/kg	<0.0007 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
3	naphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
4	acenaphthylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		205-917-1	208-96-8							
5	acenaphthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		201-469-6	83-32-9							
6	fluorene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		201-695-5	86-73-7							
7	phenanthrene				0.115 mg/kg		0.115 mg/kg	0.0000115 %		
		201-581-5	85-01-8							
8	anthracene				0.176 mg/kg		0.176 mg/kg	0.0000176 %		
		204-371-1	120-12-7							
9	fluoranthene				0.314 mg/kg		0.314 mg/kg	0.0000314 %		
		205-912-4	206-44-0							
10	pyrene				0.388 mg/kg		0.388 mg/kg	0.0000388 %		
		204-927-3	129-00-0							
11	benzo[a]anthracene				0.57 mg/kg		0.57 mg/kg	0.000057 %		
	601-033-00-9	200-280-6	56-55-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
12	chrysene				0.515 mg/kg		0.515 mg/kg	0.0000515 %		
	601-048-00-0	205-923-4	218-01-9							
13	benzo[b]fluoranthene				0.641 mg/kg		0.641 mg/kg	0.0000641 %		
	601-034-00-4	205-911-9	205-99-2							
14	benzo[k]fluoranthene				0.402 mg/kg		0.402 mg/kg	0.0000402 %		
	601-036-00-5	205-916-6	207-08-9							
15	benzo[a]pyrene; benzo[def]chrysene				0.508 mg/kg		0.508 mg/kg	0.0000508 %		
	601-032-00-3	200-028-5	50-32-8							
16	indeno[123-cd]pyrene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		205-893-2	193-39-5							
17	dibenz[a,h]anthracene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
18	benzo[ghi]perylene				0.282 mg/kg		0.282 mg/kg	0.0000282 %		
		205-883-8	191-24-2							
19	coronene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		205-881-7	191-07-1							
20	arsenic { arsenic trioxide }				11.7 mg/kg	1.32	15.448 mg/kg	0.00154 %		
	033-003-00-0	215-481-4	1327-53-3							
21	barium { barium chromate }				93.9 mg/kg	1.845	173.213 mg/kg	0.0173 %		
		233-660-5	10294-40-3							
22	beryllium { beryllium oxide }				0.61 mg/kg	2.775	1.693 mg/kg	0.000169 %		
	004-003-00-8	215-133-1	1304-56-9							
23	boron { diboron trioxide; boric oxide }				0.43 mg/kg	3.22	1.385 mg/kg	0.000138 %		
	005-008-00-8	215-125-8	1303-86-2							
24	cadmium { cadmium oxide }				<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
25	chromium in Cr(VI) compounds { chromium(VI) oxide }				2.91 mg/kg	1.923	5.596 mg/kg	0.00056 %		
	024-001-00-0	215-607-8	1333-82-0							
26	copper { dicopper oxide; copper (I) oxide }				23.8 mg/kg	1.126	26.796 mg/kg	0.00268 %		
	029-002-00-X	215-270-7	1317-39-1							
27	lead { lead chromate }			1	67.4 mg/kg	1.56	105.132 mg/kg	0.00674 %		
	082-004-00-2	231-846-0	7758-97-6							
28	mercury { mercury dichloride }				<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
29	nickel { nickel chromate }				14 mg/kg	2.976	41.668 mg/kg	0.00417 %		
	028-035-00-7	238-766-5	14721-18-7							
30	selenium { selenium compounds with the exception of cadmium selenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8									
31	vanadium { divanadium pentaoxide; vanadium pentoxide }				26.5 mg/kg	1.785	47.307 mg/kg	0.00473 %		
	023-001-00-8	215-239-8	1314-62-1							
32	zinc { zinc chromate }				100 mg/kg	2.774	277.415 mg/kg	0.0277 %		
	024-007-00-3	236-878-9	13530-65-9							
33	TPH (C6 to C40) petroleum group		TPH		66.6 mg/kg		66.6 mg/kg	0.00666 %		
34	polychlorobiphenyls; PCB				<0.28 mg/kg		<0.28 mg/kg	<0.000028 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
Total:								0.0728 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Potentially Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	Newer version of determinand available
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the concentration of: 500 mg/kg (0.05%) because: PID readings maximum of 1.5ppm on site

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00666%)

Appendix A: Classifier defined and non GB MCL determinands

■ pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

■ acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

■ fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

■ anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

■ benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.

Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>

Data source date: 16 Jun 2014

Hazard Statements: STOT SE 2; H371

• **barium chromate** (EC Number: 233-660-5, CAS Number: 10294-40-3)

Description/Comments: Data from ECHA's C&L inventory database and Sigma Aldrich SDS Revision 6.2 dated 08/05/20

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/38286>

Data source date: 12 May 2020

Hazard Statements: Ox. Sol. 2; H272 , Acute Tox. 4; H302 , Acute Tox. 4; H332 , Carc. 1B; H350

• **divanadium pentaoxide; vanadium pentoxide** (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from:: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from:: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from:: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

• **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

• **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from:: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

barium {barium chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as

required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in Cr(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**
HazWasteOnline Classification Engine Version: 2025.345.6921.12504 (11 Dec 2025)
HazWasteOnline Database: 2025.345.6921.12504 (11 Dec 2025)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

GB MCL List v5.0 - version 5.0 of 26th June 2024

GB MCL List v6.0 - version 6.0 of 15th February 2025

GB MCL List v7.0 - version 7.0 of 23rd September 2025

APPENDIX F

Envirocheck[®] Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:

391678083_1_1

Customer Reference:

LS8952

National Grid Reference:

468770, 174240

Slice:

A

Site Area (Ha):

0.08

Search Buffer (m):

1000

Site Details:

90, Stone Street

Reading

RG30 1HU

Client Details:

Mr E Toms

Land Science Ltd

Unit 10

19 Albert Drive

Burgess Hill

West Sussex

RH15 9TN

Report Section and Details	Page Number
Summary	-
The Summary section provides an overview of the data contained within the report, detailing the number of data set features or the existence of a data set in relation to the buffer selected. For ease of reference, the report is broken down into 4 sections of data; Mining and Natural Cavities Data, Historical Land Use Information (1:2,500), Historical Land Use Information (1:10,000) and Ground Stability Data (1:50,000).	
Mining and Natural Cavities Data	1
The Mining and Natural Cavities Data section features data sets related to the existence of mining areas and their potential hazards; and details of naturally formed cavities. Data sets within this section are not plotted, with the exception of BGS Recorded Mineral Sites and Potential Mining Areas which feature on the Historical Land Use Information (1:10,000) map.	
Historical Land Use Information (1:2,500)	-
The Historical Land Use Information (1:2,500) section contains data captured from analysis carried out by Landmark of 1:1,250 and 1:2,500 scale historical Ordnance Survey mapping, identifying areas where, historically, the land uses were potentially contaminative. For the purpose of this Envirocheck module, only historical data relating to mining and ground stability has been included and plotted on the corresponding Historical Land Use Information (1:2,500) map. This section also includes the Subterranean Features data set, which details various man-made and man-used underground spaces obtained from the Subterranea Britannica society.	
Historical Land Use Information (1:10,000)	5
The Historical Land Use (1:10,000) section covers data captured from the systematic analysis carried out by Landmark of 1:10, 560 and 1:10,000 scale historical Ordnance Survey mapping dating back to the mid-19th century, identifying potentially contaminative past industrial land uses. For the purpose of this Envirocheck module, only data relating to mining and ground stability has been included and plotted on the accompanying Historical Land Use Information (1:10,000) map.	
Ground Stability Data (1:50,000)	7
The Ground Stability (1:50,000) section includes the BGS Geosure data suite, reporting features to 250m and plotted onto 3 separate maps. Also reported is brine subsidence, brine mining and salt mining data sets, of which Brine Pumping and Salt Mining Related Features are plotted, and subsidence insurance claims and insurance investigations data, which is not plotted.	
Historical Map List	8
The Historical Map List section details the historical mapping that has been analysed for your site, in relation to the Historical Land Use Information sections.	
Data Currency	9
Data Suppliers	10
Useful Contacts	11

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The brine subsidence data relating to the Droitwich area as provided in this report is derived from JPB studies and physical monitoring undertaken annually over more than 35 years. For more detailed interpretation contact enquiries@jpb.co.uk. JPB retain the copyright and intellectual rights to this data and accept no liability for any loss or damage, including in direct or consequential loss, arising from the use of this data.

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Mining and Natural Cavities Data					
BGS Recorded Mineral Sites	pg 1			1	14
Coal Mining Affected Areas			n/a	n/a	n/a
Man Made Mining Cavities	pg 3				5
Mining Instability			n/a	n/a	n/a
Natural Cavities	pg 4				1
Non Coal Mining Areas of Great Britain	pg 4		Yes	n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
Extractive Industries or Potential Excavations from 1855-1909 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1893-1915 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
Extractive Industries or Potential Excavations from 1950-1980 (100m)				n/a	n/a
Subterranean Features (100m)				n/a	n/a
Historical Land Use Information (1:10,000)					
Air Shafts					
Disturbed Ground					
General Quarrying					
Heap, unknown constituents					
Mineral Railway					
Mining & quarrying general					
Mining of coal & lignite					
Quarrying of sand & clay, operation of sand & gravel pits	pg 5			1	6
Former Marshes					
Potentially Infilled Land (Non-Water)	pg 5			1	9
Potentially Infilled Land (Water)	pg 5			1	4
Ground Stability Data (1:50,000)					
CBSCB Compensation District			n/a	n/a	n/a
Brine Pumping Related Features					
Brine Subsidence Solution Area					
Potential for Collapsible Ground Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 7	Yes	Yes	n/a	n/a
Salt Mining Related Features					



Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	BGS Recorded Mineral Sites Site Name: Penham'S Shaw Gravel Pit Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36364 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A8NW (S)	449	1	468596 173802
2	BGS Recorded Mineral Sites Site Name: Penham'S Shaw Gravel Pit Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36365 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	588	1	468524 173682
3	BGS Recorded Mineral Sites Site Name: Norcot Farm Gravel Pit Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36363 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A12SE (SW)	594	1	468199 173995
4	BGS Recorded Mineral Sites Site Name: Penham'S Shaw Gravel Pit Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36366 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	653	1	468508 173618
5	BGS Recorded Mineral Sites Site Name: Norcot Kiln Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36367 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	792	1	468090 173785
6	BGS Recorded Mineral Sites Site Name: Grovelands Brick Tile & Pottery Works Location: Water Road, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244372 Type: Opencast Status: Ceased Operator: S. & E. Collier Ltd Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A8SE (S)	831	1	468778 173386

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	BGS Recorded Mineral Sites Site Name: Norcot Kiln Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 36368 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Palaeogene Geology: London Clay Formation Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	864	1	468030 173745
8	BGS Recorded Mineral Sites Site Name: Beecham Hill Chalk Pit Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 137497 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Black Park Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A12NW (W)	876	1	467867 174273
9	BGS Recorded Mineral Sites Site Name: Grovelands Brick Tile & Pottery Works Location: Water Road, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244371 Type: Opencast Status: Ceased Operator: S. & E. Collier Ltd Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A8SE (S)	899	1	468932 173334
10	BGS Recorded Mineral Sites Site Name: Grovelands Brick Tile & Pottery Works Location: Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 10639 Type: Opencast Status: Ceased Operator: S. & E. Collier Ltd Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A8SE (S)	910	1	468849 173311
11	BGS Recorded Mineral Sites Site Name: Grovelands Brick Tile & Pottery Works Location: Water Road, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244373 Type: Opencast Status: Ceased Operator: S. & E. Collier Ltd Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	927	1	468383 173373
12	BGS Recorded Mineral Sites Site Name: Norcot Kiln Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244198 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Head Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	944	1	467915 173780

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	BGS Recorded Mineral Sites Site Name: Norcot Kiln Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244198 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Thanetian - Ypresian Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	944	1	467915 173780
13	BGS Recorded Mineral Sites Site Name: Norcot Kiln Location: Tilehurst, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244197 Type: Opencast Status: Ceased Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Quaternary Geology: Head Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A7NW (SW)	972	1	467944 173680
14	BGS Recorded Mineral Sites Site Name: Grovelands Brick Tile & Pottery Works Location: Water Road, Reading, Berkshire Source: British Geological Survey, National Geoscience Information Service Reference: 244370 Type: Opencast Status: Ceased Operator: S. & E. Collier Ltd Operator Location: Not Supplied Periodic Type: Palaeogene Geology: Lambeth Group Commodity: Common Clay and Shale Positional Accuracy: Located by supplier to within 10m	A8SE (S)	986	1	468975 173253
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Man Made Mining Cavities Cavity Type: Historical Brick and Tile Works-Probable References to Chalk Mining Commodity: Chalk Solid Geology Detail: No Details Superficial Geology: Worked Ground Detail:	A7NE (SW)	775	2	468100 173800
	Man Made Mining Cavities Cavity Type: Shaft Commodity: Not Supplied Solid Geology Detail: No Details Superficial Geology: NONE RECORDED Detail:	A7NE (SW)	790	2	468110 173760
	Man Made Mining Cavities Cavity Type: Crown Hole Collapse- Possible Chalk Workings Commodity: Not Supplied Solid Geology Detail: No Details Superficial Geology: NONE RECORDED Detail:	A7NE (SW)	835	2	468100 173700
	Man Made Mining Cavities Cavity Type: Historical Brick Works/Extensive Clay Pits-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: No Details Superficial Geology: Worked Ground Detail:	A8SE (S)	927	2	468900 173300
	Man Made Mining Cavities Cavity Type: Historical Clay Pit-Potential Chalk Mining Commodity: Chalk Solid Geology Detail: No Details Superficial Geology: Worked Ground Detail:	A7SE (S)	988	2	468400 173300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Natural Cavities Cavity Type: Sinkhole x 1, Solution Pipe x 1 Solid Geology Detail: Chalk Group, Lambeth Group Superficial Geology: Worked Ground Detail:	A8SE (S)	768	2	468800 173450
	Non Coal Mining Areas of Great Britain Risk: Highly Unlikely Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	93	1	468700 174150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1883	A8NW (S)	431	2	468623 173811
16	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1883	A8NW (S)	597	2	468531 173668
17	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1883	A12SE (SW)	602	2	468193 173987
18	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1883	A8NW (SW)	630	2	468505 173644
19	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1961	A12NW (W)	855	2	467887 174271
19	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1900	A12NW (W)	871	2	467871 174256
20	Quarrying of sand & clay, operation of sand & gravel pits Use: Not Supplied Date of Mapping: 1932 - 1961	A8SW (S)	858	2	468448 173420
21	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8NW (S)	431	2	468623 173811
22	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8NW (S)	597	2	468531 173668
23	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A12SE (SW)	602	2	468193 173987
24	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8NW (SW)	630	2	468505 173644
25	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A7NE (SW)	704	2	468140 173870
26	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8SW (S)	753	2	468743 173464
27	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8SW (S)	858	2	468448 173420
28	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A12NW (W)	871	2	467871 174256
29	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A8SW (S)	951	2	468681 173270
30	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A12SW (W)	970	2	467808 173972
31	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1900	A12SE (W)	461	2	468299 174107
32	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1961	A14SE (E)	724	2	469458 173979
33	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1961	A14SE (E)	785	2	469536 174014
34	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1961	A14SE (E)	871	2	469643 174091

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
35	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1961	A14SE (E)	899	2	469646 173988

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
36	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236
37	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	147	1	468862 174376
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	64	1	468835 174290
38	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	64	1	468835 174290
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	147	1	468862 174376
39	Potential for Ground Dissolution Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236
40	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	64	1	468835 174290
41	Potential for Ground Dissolution Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	175	1	468759 174042
42	Potential for Ground Dissolution Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	236	1	468748 173982
43	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236
	Potential for Landslide Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	144	1	468608 174179
44	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236
45	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	64	1	468835 174290
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	144	1	468608 174179
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	147	1	468862 174376
46	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	64	1	468835 174290
47	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	179	1	468785 174039
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	1	468765 174236

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Berkshire	029_14	1878
Berkshire	037_02	1881
Berkshire	029_14	1899
Berkshire	037_02	1899
Oxfordshire	056_14	1899
Berkshire	037_02	1911
Berkshire	029_14	1913
Berkshire	037_02	1932
Berkshire	029_14	1936

The following mapping has been analysed for Historical Land Use Information (1:10,000):

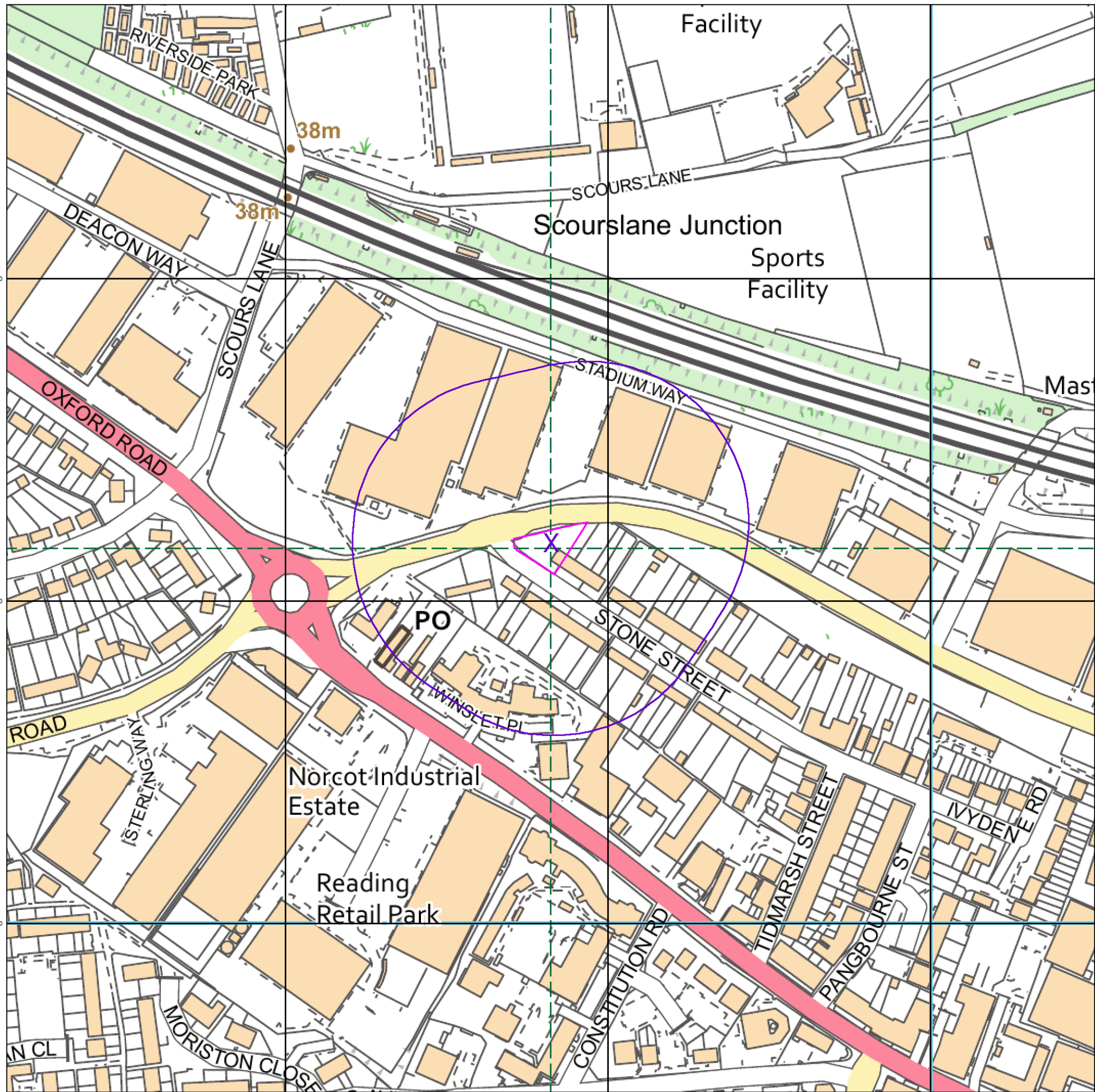
1:10,560	Mapsheet	Published Date
Oxfordshire	056_00	1882
Berkshire	037_00	1883
Berkshire	029_SW	1900
Berkshire	037_NW	1900
Oxfordshire	056_SW	1900
Berkshire	029_SW	1914
Berkshire	037_NW	1914
Oxfordshire	056_SW	1914
Berkshire	037_NW	1932
Berkshire	029_SW	1938
Oxfordshire	056_SW	1938
Ordnance Survey Plan	SU67NE	1960
Ordnance Survey Plan	SU67SE	1961
Ordnance Survey Plan	SU77NW	1961
Ordnance Survey Plan	SU77SW	1962
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SU67NE	1984
Ordnance Survey Plan	SU77NW	1991
Ordnance Survey Plan	SU67SE	1992
Ordnance Survey Plan	SU77SW	1995

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2025	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	February 2023	
Man Made Mining Cavities Stantec UK Ltd	May 2025	Bi-Annually
Mining Instability Ove Arup & Partners	June 1998	Not Applicable
Natural Cavities Stantec UK Ltd	May 2025	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	Version	Update Cycle
Subterranean Features Landmark Information Group Limited	July 2023	Bi-Annually
Ground Stability Data (1:50,000)	Version	Update Cycle
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB) Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011 November 2020	As notified
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	April 2020	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	As notified
Brine Subsidence Solution Area Johnson Poole & Bloomer	December 2020	

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
British Geological Survey	 British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	
Ove Arup	
Stantec UK Ltd	
Wardell Armstrong	
Johnson Poole & Bloomer	

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	Landmark Information Group Limited Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0330 036 6619 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk
-	Landmark Information Group Limited Landmark Information Group, Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0330 036 6618 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk



Land Science

Historical Land Use Information (1:2,500)

General

Specified Site Specified Buffer(s) Bearing Reference Point Map ID

Several of Type at Location

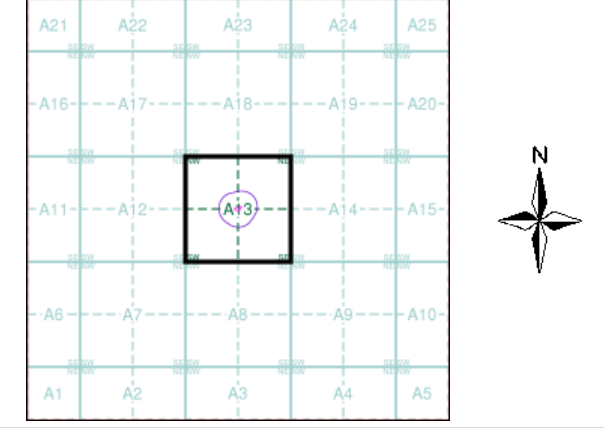
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	■
Extractive Industries Activity from 1893 - 1915	▲	—	■
Extractive Industries Activity from 1906 - 1937	▲	—	■
Extractive Industries Activity from 1924 - 1949	▲	—	■
Extractive Industries Activity from 1950 - 1980	▲	—	■

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	---	■

Mining and Ground Stability - Segment A13

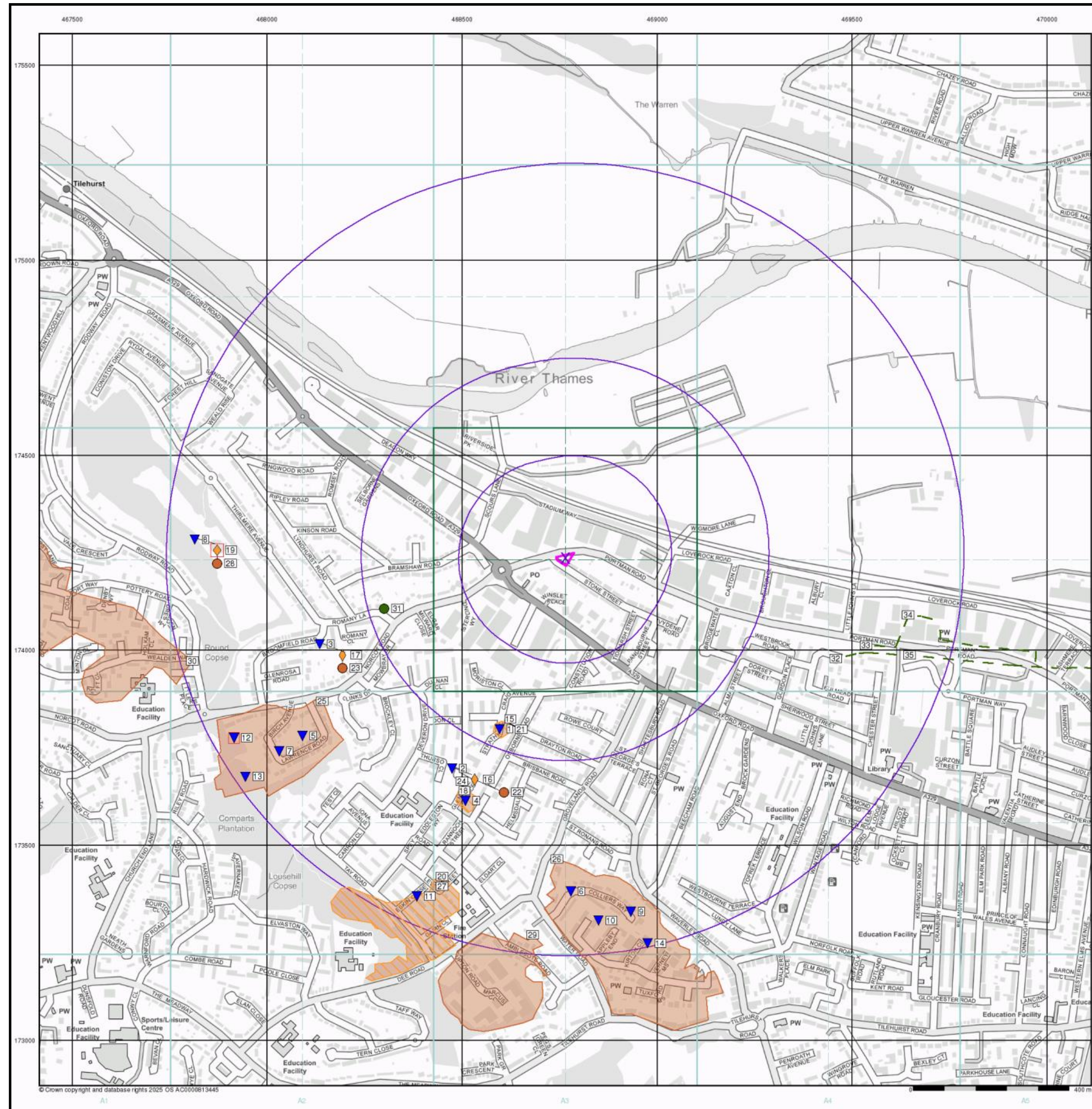


Order Details

Order Number: 391678083_1_1
Customer Ref: LS8952
National Grid Reference: 468770, 174240
Slice: A
Site Area (Ha): 0.08
Plot Buffer (m): 100

Site Details

90, Stone Street, Reading, RG30 1HU



Land Science

Historical Land Use Information (1:10,000)

General

Specified Site Specified Buffer(s) Bearing Reference Point Map ID

Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts			
Disturbed Ground			
General Quarrying			
Heap, unknown constituents			
Mineral Railway			
Mining and Quarrying General			
Mining of Coal & Lignite			
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits			

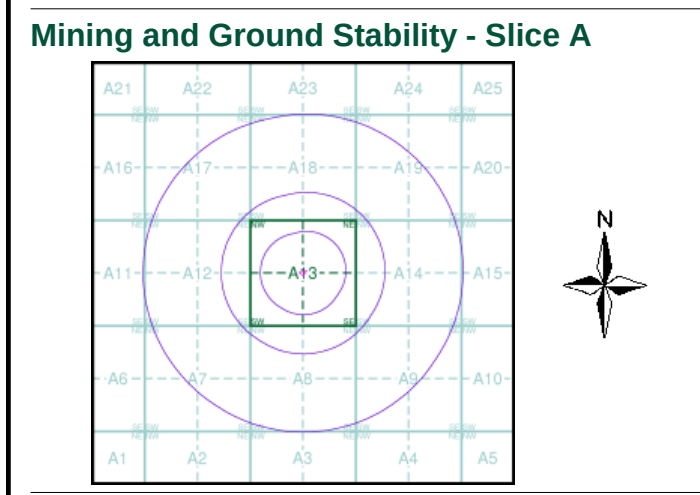
Historical Land Use

	Point	Line	Polygon
Potentially Infilled Land (Non-Water)			
Potentially Infilled Land (Water)			
Former Marsh			

Mining Data

Potential Mining Area

BGS Recorded Mineral Site



Order Details

Order Number: 391678083_1_1

Customer Ref: LS8952

National Grid Reference: 468770, 174240

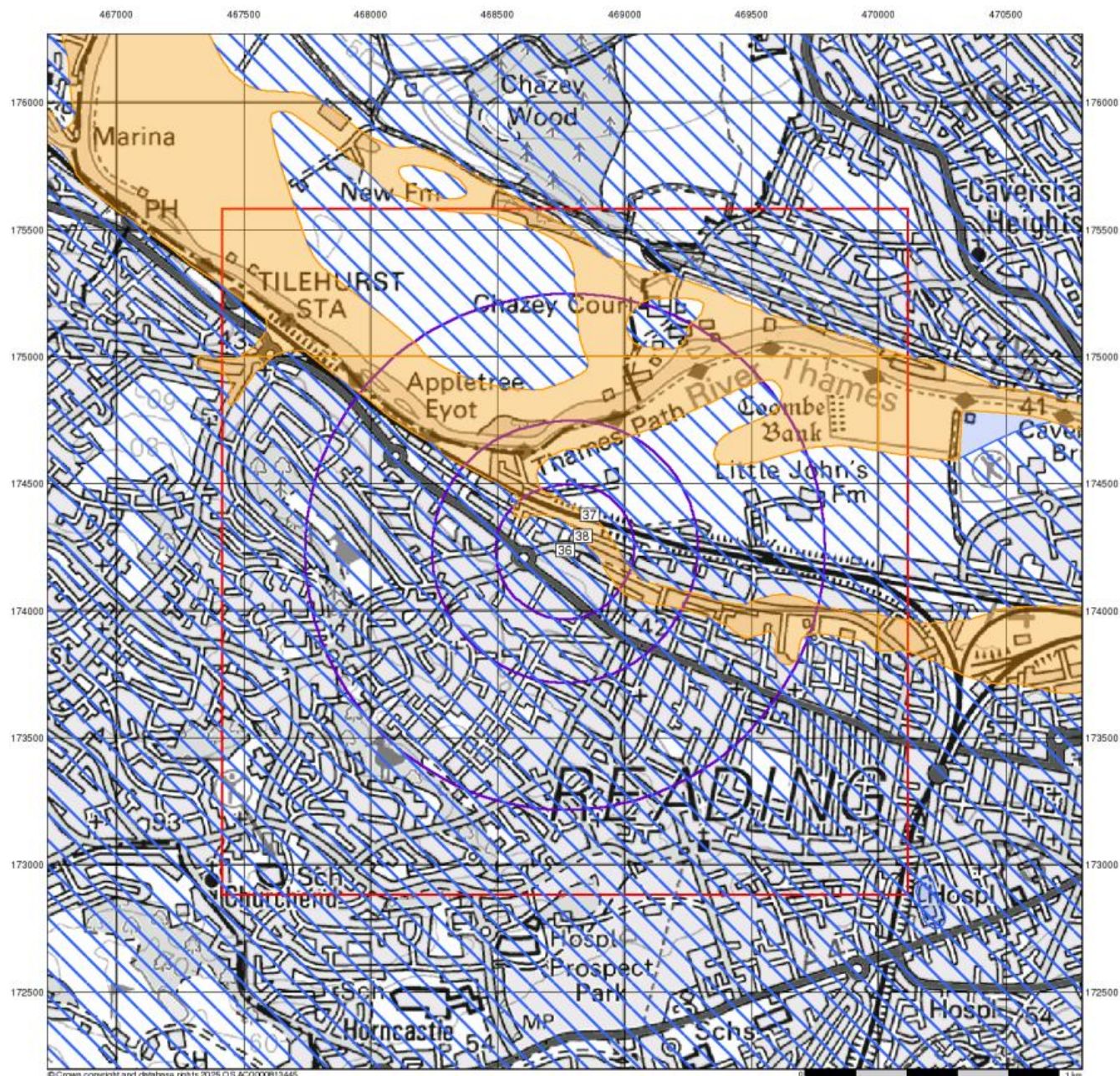
Slice: A

Site Area (Ha): 0.08

Search Buffer (m): 1000

Site Details

90, Stone Street, Reading, RG30 1HU



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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Potential for Compressible Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Collapsible Ground Stability Hazards

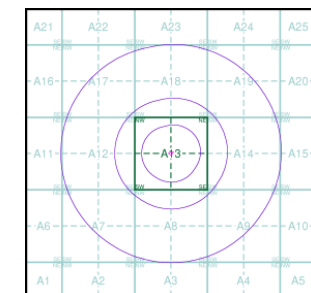
- High
- Low
- Moderate
- Very Low

Brine Pumping and Salt Mining

- Brine Pumping Related Feature
- Salt Mining Related Feature

- | Point | Polygon |
|-------|---------|
| | |
| | |

Mining and Ground Stability - Slice A



Order Details

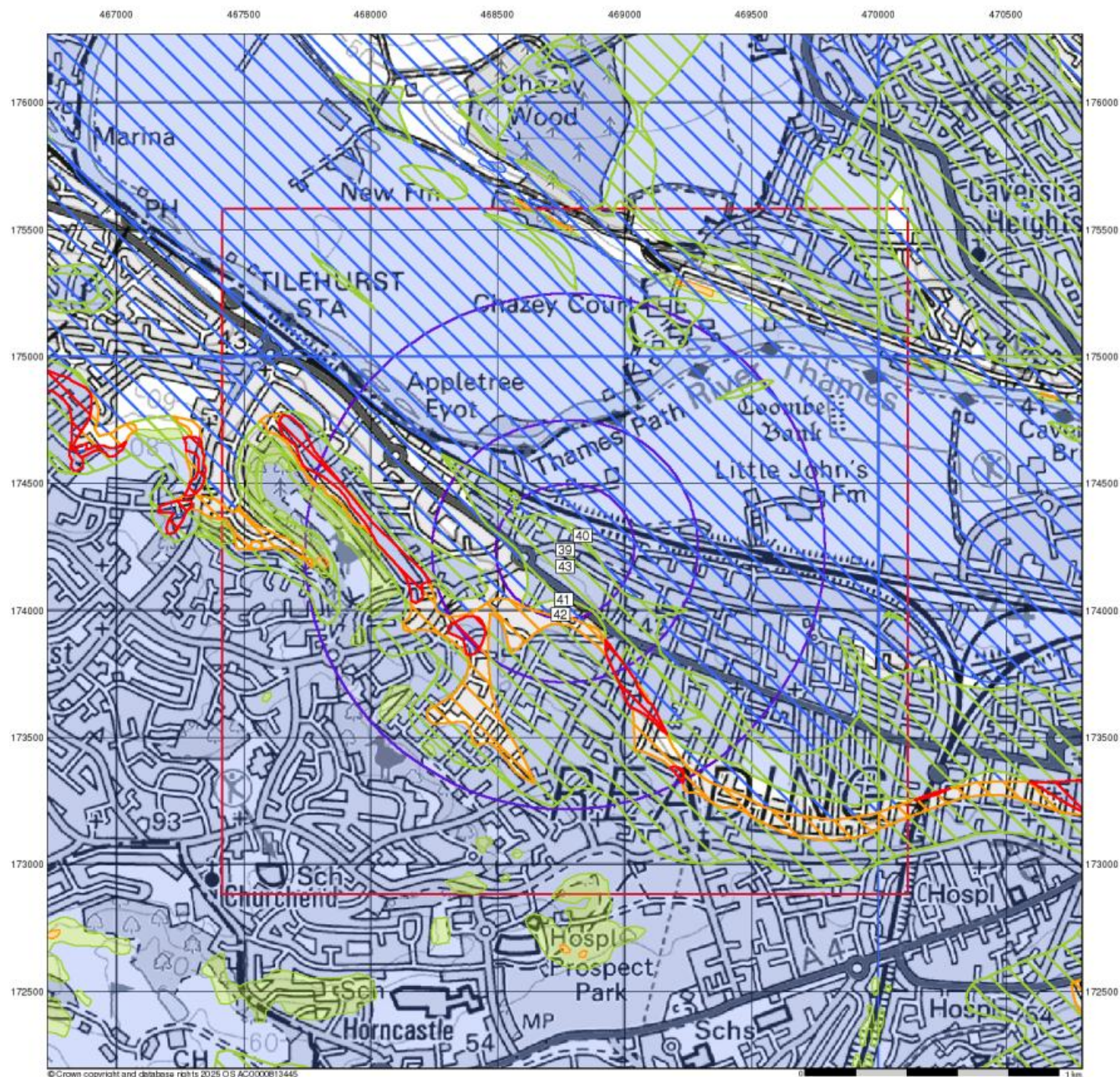
Order Number: 391678083_1_1
 Customer Ref: LS8952
 National Grid Reference: 468770, 174240
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

Site Details

90, Stone Street, Reading, RG30 1HU



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.ernirocheck.co.uk



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Ground Stability Data (1:50,000)

General

- ◇ Specified Site
- Specified Buffer(s)
- X Bearing Reference Point
- Slice
- 8 Map ID

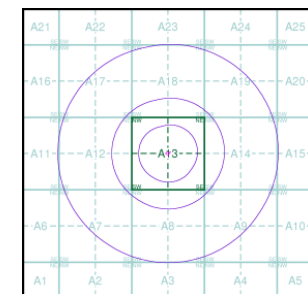
Potential for Landslide Ground Stability Hazards

- High
- Moderate
- Low
- Very Low

Potential for Ground Dissolution Stability Hazards

- ▨ High
- ▨ Moderate
- ▨ Low
- ▨ Very Low

Mining and Ground Stability - Slice A



Order Details

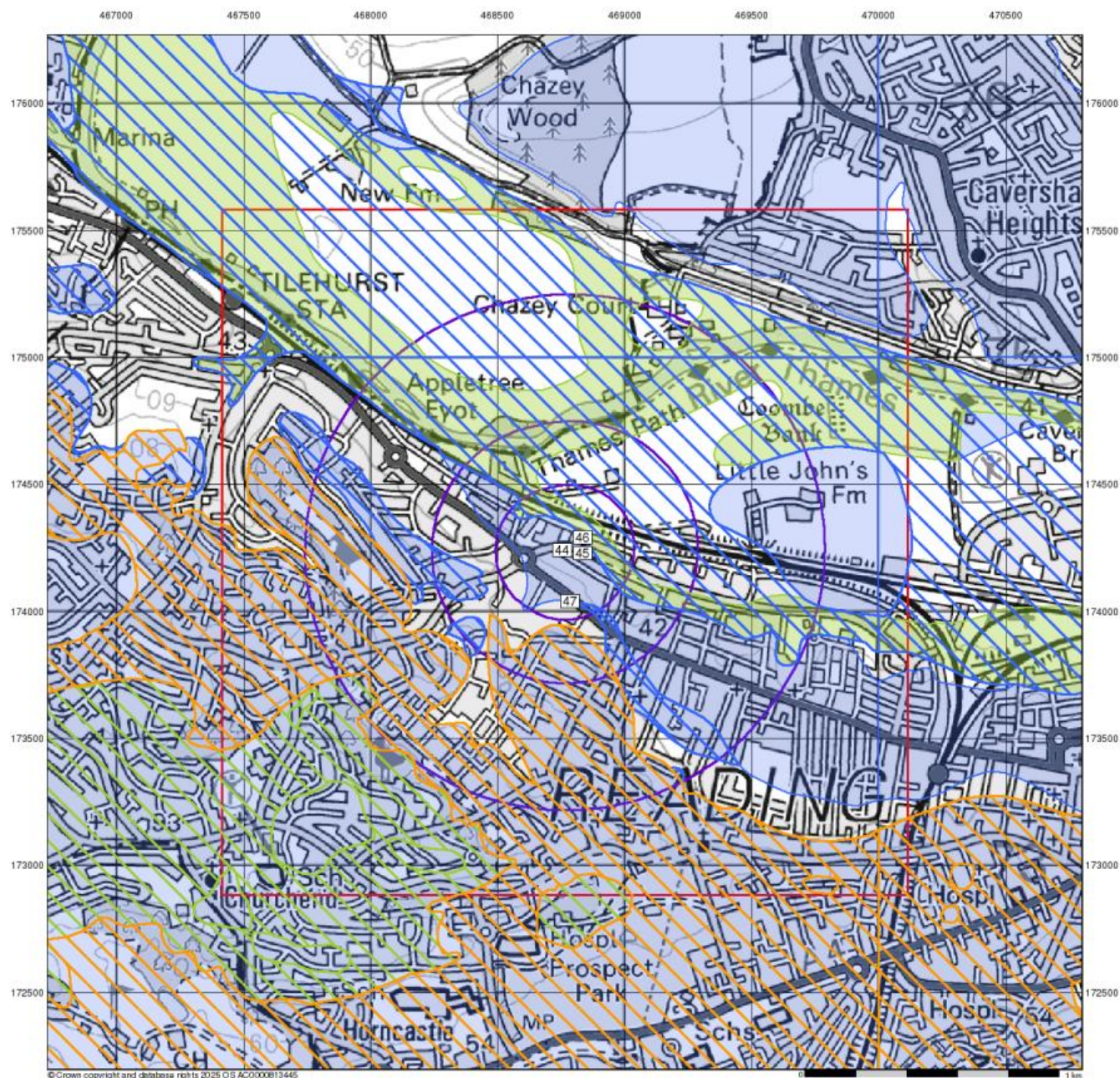
Order Number: 391678083_1_1
 Customer Ref: LS8952
 National Grid Reference: 468770, 174240
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

Site Details

90, Stone Street, Reading, RG30 1HU



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Ground Stability Data (1:50,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

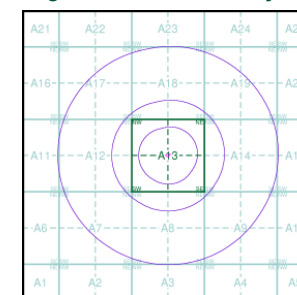
Potential for Running Sand Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

- High
- Low
- Moderate
- Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number: 391678083_1_1
 Customer Ref: LS8952
 National Grid Reference: 468770, 174240
 Slice: A
 Site Area (Ha): 0.08
 Search Buffer (m): 1000

Site Details

90, Stone Street, Reading, RG30 1HU



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.ernirocheck.co.uk

APPENDIX G

Report of address search for radon risk

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Address searched: 90 Stone Street, Reading, RG30 1HU

Date of report: 8 December 2025

Guidance for existing properties

Is this property in a radon Affected Area? - Yes

A radon Affected Area is defined as where the radon level in at least one property in every hundred is estimated to be at or above the Action Level.

The estimated probability of the property being above the Action Level for radon is: 1-3%

The probability result is only valid for properties above ground. All basement and cellar areas are considered to be at additional risk from high radon levels.

The result may not be valid for buildings larger than 25 metres.

If this site is for redevelopment, you should undertake a GeoReport provided by the British Geological Survey.

This report informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

Radon Affected Areas are designated by the UK Health Security Agency. UKHSA advises that radon gas should be measured in all properties within Radon Affected Areas.

If you are buying a currently occupied property in a Radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and the results of re-testing confirmed the effectiveness of the measures.

Further information is available from UKHSA or <https://www.ukradon.org>

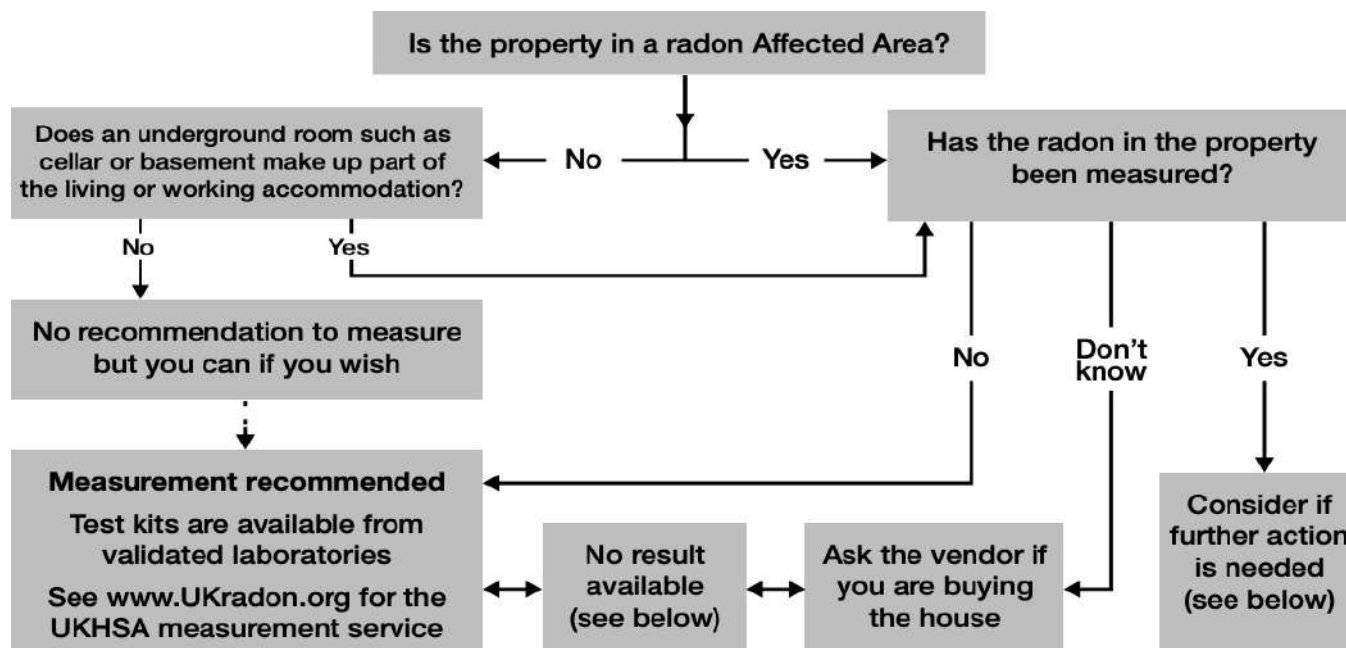
Guidance for new buildings and extensions to existing properties

What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - None

If you are buying a new property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

See the Radon and Building Regulations for more details.

UKHSA guidance for occupiers and prospective purchases



Existing radon test results: There is no public record of individual radon measurements. Results of previous tests can only be obtained from the seller. Radon levels can be significantly affected by changes to the building or its use, particularly by alterations to the heating and ventilation which can also be affected by changes in occupier. If in doubt, test again for reassurance.

Radon Bond: This is simply a retained fund, the terms of which are negotiated between the purchaser and the vendor. It allows the conveyance of the property to proceed without undue delay. The purchaser is protected against the possible cost of radon reduction work and the seller does not lose sale proceeds if the result is low. Make sure the agreement allows enough time to complete the test, get the result and arrange the work if needed.

High Results: Exposure to high levels of radon increases the risk of developing lung cancer. If a test in a home gives a result at or above the Action Level of 200 Becquerels per cubic metre of air (Bq/m³), formal advice will be given to lower the level. Radon reduction will also be recommended if the occupants include smokers or ex-smokers when the radon level is at or above the Target Level of 100 Bq/m³; these groups have a higher risk. Information on health risks and radon reduction work is available from UKHSA. Guidance about radon reduction work is also available from some Local Authorities, the Building Research Establishment and specialist contractors.

UKHSA designated radon website: <https://www.ukradon.org>

Building Research Establishment: <http://www.bre.co.uk/page.jsp?id=3137>