



Contamination Investigation Report

at

Little Millfields, Horsham Road, Rowhook, West Sussex RH12 3PZ

for

Carlin Capital

Reference: 22009/CIR RevI.0

August 2025

Control Document

Project

Little Millfields, Horsham Road, Rowhook, West Sussex RH12 3PZ

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Prepared by

Kasha Mackay (MGeol, FGS)
km@soilslimited.co.uk

First check by

S J Bevins BSc.(Hons) MSc. CEng CEnv MIMMM FGS MCorIE RoGEP

Second check by

Eur Ing R B Higginson BSc, PGDip, CEng, MICE, FGS.

This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.



Commission

This document comprises the Contamination Investigation Report (CIR) and incorporates the results, discussion, and conclusions to this intrusive works. General site data is recorded below:

Commission Record	
Client	Carlin Capital
Site Name	Little Millfields, Horsham Road, Rowhook, West Sussex RH12 3PZ
Grid Reference	TQ120346
Soils Limited Quotation Ref	Q30112 dated 11 th June 2025
Clients Purchase Order	Q30112 dated 18 th June 2025

The record of revision to this document is presented below:

Record Of Revisions		
Revision	Date	Reason
Rev1.0	August 2025	Final

Note(s): The latest revised document supersedes all previous revisions of the CIR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

Record Of Associated Documents			
Reference	Type	Date	Creator
LS8495	Phase I Contamination Assessment	29 th May 2025	Land Science
I532-P-004	Proposed Plans	January 2025	Boher Architecture

Limitations and Disclaimers

The report was prepared solely for the brief described in Section 1.1 of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in Soils Limited's Quotation

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

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The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the Client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

If the term "competent person" is used in this report or any Soils Limited document, it means an engineering geologist or civil engineer with a minimum of three years post graduate experience in the understanding and application of the appropriate codes of practice.

Unless the site investigation works have been designed and specified in accordance with EC7, this report is a Geotechnical Investigation Report and is not necessarily a Ground Investigation Report as defined by EC7 (Eurocode 7 Part 1, §3.4, Part 2, §6.1) or a Geotechnical Design Report (Eurocode 7 Part 1, §2.8) as defined by Eurocode 7 and as such may not characterise the ground conditions and additional works may be required to comply with the requirements of EC7.

Within the report reference to ground level relates to the site level at the time of the investigation, unless otherwise stated.

Exploratory hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sample borehole implies the specific technique used to produce an exploratory hole.

The chemical analyses were undertaken by Construction Testing Solutions (CTS) in accordance with their UKAS and MCERTS accredited test methods or their documented in-house testing procedures. This investigation did not comprise an environmental audit of the site or its environs.

Ownership of land brings with it onerous legal liabilities in respect of harm to the environment. "Contaminated Land" is defined in Section 57 of the Environment Act 1995 (as updated 2021) as:

"Land which is in such a condition by reason of substances in, on or under the land that significant harm is being caused or that there is a significant possibility of such harm being caused or that pollution of controlled waters is being, or is likely to be caused".

It must be noted that a detailed survey of the possible presence or absence of invasive species, such as Japanese Knotweed, is outside of the scope of investigation.

Deleterious materials may be present in any Made Ground that pose a potential risk to site workers, end users and adjacent vulnerable receptors. These could include a range of contaminants, including asbestos, especially if the material includes large fractions of demolition derived materials.

The investigation, analysis or recommendations in respect of contamination are made solely in respect of the prevention of harm to vulnerable receptors, using where possible best practice at the date of preparation of the report. The investigation and report do not address, define or make recommendations in respect of environmental liabilities. A separate environmental audit and liaison with statutory authorities is required to address these issues.

All environmental works are undertaken in the context of, and in compliance with, BS10175+A2 2017 and LCRM (EA 2021) and all other pertinent planning, standards, documentation and guidance appropriate to the site at the time of production which may include, but are not necessarily limited to, documents provided by BS/CEN/ISO, NHBC, AGS, CIEH, CIRIA, SoBRA and CLAIRE.

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Section I Introduction

I.1 Objective of Investigation

The Client commissioned Soils Limited to undertake an intrusive ground investigation and to prepare a Contamination Investigation Report to supply the Client and their designers with information regarding ground conditions, to assist in preparing a scheme for the development that was appropriate to the settings present on the site.

Soil samples were taken from the exploratory holes for chemical laboratory testing to enable recommendations for the safe redevelopment of the site and the protection of site workers, end-users and the public from any contamination identified as dictated by the Conceptual Site Model (CSM) in the Preliminary Investigation Report undertaken for the site by Land Science (Report ref: LS8495 29th May 2025) and the Revised Conceptual Site Model presented in Appendix C.1.

I.2 Site Description

The site was a small farmyard that consisted of single storey barns located towards the south of site. There were mature trees, bushes shrubs and hedgerows noted on site along the site boundary. The site was primarily situated on soft landscaping, with the barn yard consisting of concrete surfacing.

The site was dipping down <3° towards the east with an old barnyard was noted in the west

The site location plan is given in Figure 1. An aerial photograph of the site and its close environs has been included in Figure 2.

I.3 Proposed Development

The proposed development included the demolition of several structures and the conversion of an existing stable to a one bedroom dwelling the use of private gardens have not been noted within the proposed development but has been assumed.

In compiling this report reliance was placed on drawing number 1532-P-004 Dated January 2025 by Boher Architecture The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

Development plans provided by the Client are presented in Appendix D.

I.4 Anticipated Geology

The 1:50,000 BGS map showed the site to be located directly upon the bedrock Weald Clay Formation with no overlying superficial deposits.

I.4.1 Weald Clay Formation

The Weald Clay Formation consists of shales and mudstones with occasionally thin beds of siltstones, sandstone, shelly limestone and clay ironstone. When fresh the beds are normally dark grey weathering to mottled yellow and brown near the surface or at outcrop. Bands of red clay occur within the bed, usually in association with the sandstone.

Section 2 Site Works

2.1 Proposed Project Works

The proposed intrusive investigation was designed to provide information on the ground conditions and to assist the safe development of the site. The intended investigation, as outlined within the Soils Limited quotation (Q30112 dated 11th June 2025), was to comprise the following items:

- Service clearance via CAT and Genny
- 6No (up to) 2m deep windowless sampler boreholes
- PID testing
- Geochemical Laboratory Testing

2.1.1 Actual Project Works

The actual project works were undertaken on 1st July 2025, with subsequent sample logging, laboratory testing, and reporting. The actual works comprised:

- Service clearance via CAT and Genny
- 6No 2m deep windowless sampler boreholes
- PID testing
- Geochemical Laboratory Testing

All six boreholes were backfilled with arisings.

All exploratory hole locations have been presented in Figure 3.

Following completion of site works, soil cores were logged and sub-sampled so that samples could be sent to the laboratory for contamination testing.

2.2 Ground Conditions

On the 1st July 2025 six windowless sampler boreholes (WS1 – WS6) were drilled, using a Premier Compact rig, to depths of 2.00m below ground level (bgl) at locations selected by Soils Limited using a development plan provided by the Client.

The maximum depths of exploratory holes have been included in Table 2.1.

Table 2.1 Final Depth of Exploratory Holes

Exploratory Hole	Depth (m bgl)	Exploratory Hole	Depth (m bgl)
WS1	2.00	WS4	2.00
WS2	2.00	WS5	2.00
WS3	2.00	WS6	2.00

The soil conditions encountered were recorded and soil sampling commensurate with the purposes of the investigation was carried out. The depths given on the exploratory hole logs and quoted in this report were measured from ground level.

The soils encountered from immediately below ground surface have been described in the following manner. Where the soil incorporated an organic content such as either decomposing leaf litter or roots or has been identified as part of the in-situ weathering profile, it has been described as Topsoil both on the logs and within this report. Where man has clearly either placed the soil, or the composition altered, with say greater than an estimated 5% of a non-natural constituent, it has been referred to as Made Ground both on the log and within this report.

For more complete information about the soils encountered within the general area of the site reference must be made to the detailed records given within Appendix B, but for the purposes of discussion, the succession of conditions encountered in the exploratory holes in descending order can be summarised as:

Made Ground/Topsoil (MG/TS) Weald Clay Formation (WC)

The ground conditions encountered in the exploratory holes are summarised in Table 2.2.

Table 2.2 Ground Conditions

Strata	Depth Encountered (m bgl)		Typical Thickness (m)	Typical Description
	Top	Bottom		
MG	0.00	0.35-0.50	0.42	Soft dark grey slightly sandy, slightly gravelly, slightly silty CLAY. Sand is fine. Gravel is angular to subangular, fine to coarse flint with fragments of brick and concrete. MADE GROUND
TS		0.20	0.20	Very stiff greyish brown slightly sandy, desiccated CLAY. Sand is fine to medium. Frequent rootlets. Rare orange fine sand inclusions. TOPSOIL.
WC	0.20-0.50	2.00 ¹	Not Proven ²	Stiff becoming very stiff with depth, light brownish grey mottled brown and yellowish brown, silty CLAY. Occasional fine black speckles and mottling (odourless, organic). Occasional rootlets. Occasional becoming rare fine sand.

Note(s): ¹ Final depth of exploratory hole. ² Base of strata not encountered. The depths given in this table are taken from the ground level on-site at the time of investigation.

2.3 Ground Conditions Encountered in Exploratory Holes

The ground conditions encountered in exploratory holes have been described below in descending order. The engineering logs are presented in Appendix B.1.

2.3.1 Made Ground and Topsoil

Soils described as Made Ground were encountered in five of the six exploratory holes from ground level to depths ranging between 0.35m (WS5) and 0.50m (WS1) bgl.

The Made Ground typically comprised of soft dark grey slightly sandy, slightly gravelly, slightly silty CLAY. Sand is fine. Gravel is angular to subangular, fine to coarse flint with fragments of brick and concrete.

Soils described as Topsoil were encountered in one exploratory hole (WS6) from ground level to a depth of 0.20m bgl.

The Topsoil comprised very stiff greyish brown slightly sandy, desiccated CLAY. Sand is fine to medium. Frequent rootlets. Rare orange fine sand inclusions.

The established depth of Made Ground and Topsoil found at each exploratory hole location have been included in Table 2.3.

Table 2.3 Established Depth of Made Ground/Topsoil

Exploratory Hole	Strata	Depth (m bgl)
WS1	MG	0.50
WS2	MG	0.40
WS3	MG	0.40
WS4	MG	0.40
WS5	MG	0.35
WS6	TS	0.20

2.3.2 Weald Clay Formation

The Weald Clay Formation was encountered directly beneath the Made Ground/ Topsoil and extended down to the full depth of the investigation. The Weald Clay Formation typically comprised stiff becoming very stiff with depth, light brownish grey mottled brown and yellowish brown, silty CLAY. Occasional fine black speckles and mottling (odourless, organic). Occasional rootlets. Occasional becoming rare fine sand.

The established depth of the Weald Clay Formation found at each exploratory hole location has been included in Table 2.4.

Table 2.4 Established Depth of Weald Clay Formation

Exploratory Hole	Depth (m bgl)
WS1	2.00 ¹
WS2	2.00 ¹
WS3	2.00 ¹
WS4	2.00 ¹
WS5	2.00 ¹
WS6	2.00 ¹

Note(s): ¹ Final depth of exploratory hole.

2.4 Groundwater

Groundwater was not encountered within any of the exploratory holes

Changes in groundwater level occur for a number of reasons including seasonal effects and variations in drainage. The investigation was conducted in July (2025), when groundwater levels should be falling from their annual maximum (highest) elevation, which typically occurs around March to the annual minimum (lowest) which typically occurs around September.

Groundwater equilibrium conditions may only be conclusively established, if a series of observations are made via groundwater monitoring wells.

Section 3 Determination of Chemical Analysis

3.1 Site Characterisation and Revised Conceptual Site Model

The Preliminary Investigation Report undertaken by Land Science (report ref: LS8495 dated May 2025) identified an unlikely to high risk of ground contamination from previous usage of the site and offsite sources.

The high risk of ground contamination included:

- Made Ground
- Agricultural land
- Storage of building materials on site

This investigation identified Made Ground to depths between 0.35m and 0.50m bgl

There were no significant visual or olfactory indicators of contamination noted. PID testing was carried out on the samples and the results were all below 1ppm (detection limit)

The Weald Clay Formation was encountered underlying the Made Ground.

The conceptual site model was updated to take account of the above findings where necessary and is presented in Appendix C.1.

3.2 Soil Sampling

Exploratory hole locations were established to provide an overview of ground conditions across the site in relation to the proposed construction, together with enabling the collection of samples to enable chemical characterisation of the underlying strata.

Representative samples for potential environmental testing were obtained from the exploratory holes at depths of between 0.10m and 0.80m to allow appropriate representation of the materials encountered, with additional samples to be obtained, if necessary, where there was visual or olfactory evidence of contamination.

Unless otherwise stated, analytical testing was based initially on a screening suite of commonly identified inorganic and organic contaminants, taking into account the prevailing site conditions and the findings of the initial conceptual site model.

3.3 Determination of Chemical Analysis

The driver for determination of the analysis suite was the information obtained from the Preliminary Investigation Report and this intrusive investigation.

The chemical analyses were carried out on 1 sample of Topsoil, 2 samples of Made Ground and 2 samples of Weald Clay. The nature of the analyses is detailed in Table 3.1.

Table 3.1 Chemical Analyses Suites - Soil

Determinants	Soil Tested		
	MG	TS	WC
Metal suites: Arsenic, Boron (Water Soluble), Cadmium, Chromium (total & hexavalent), Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc	2	1	2
Organic Matter	2	1	2
pH	2	1	2
Polycyclic aromatic hydrocarbons (PAH) – (EPA 16)	2	1	2
Phenols – total monohydric	2	1	2
Extractable petroleum hydrocarbons (EPH) – Texas banding	2	1	2
Asbestos screening	2	1	2

The soil testing was carried out in compliance with the MCERTS performance standard, and the results are shown in Appendix C.2, test report L25/06983/SLT - 25-73119.

Section 4 Qualitative Risk Assessment

4.1 Assessment Criteria

The assessment criteria used to determine risks to human health are derived and explained within Appendix C.3.

4.2 Representative Contamination Criteria - Soil

In compiling this report reliance was placed on drawing number 1532-P-004 Dated January 2025 by Boher Architecture. The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

Based on the proposed development, the results of the chemical analysis have been compared against generic assessment criteria (GAC) for a '**Residential with home grown produce**' end use, as presented in SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination December 2014 (C4SL), derived for the protection of human health. Where this document has not published screening values for determinants, GACs derived for the same end use have been adopted from the following published guidance; DEFRA Soil Guideline Values (SGV) and LQM/CIEH/Suitable 4 Use Level (S4UL).

To assess the potential toxicity of organic determinants (Petroleum Hydrocarbons and Polyaromatic Hydrocarbons) to the human health, soils samples were analysed for Soil Organic Matter (SOM). The selected samples analysed recorded, SOM values of between 0.90% and 3.00% For each soil sample tested, the resultant SOM allowed for the correct comparison to be made with the appropriate guideline value for each organic determinant analysed.

4.3 Risk Assessment – Made Ground/Topsoil

None of the samples tested from the Made Ground or Topsoil recorded any exceedances of the relevant GAC that could be a potential risk to human health.

4.4 Risk Assessment – Weald Clay Formation

Table 4.1 outlines any samples that have exceeded their relevant assessment criteria. The full laboratory report is presented in Appendix C.2.

Table 4.1 Summary of GAC Exceedances – Weald Clay Formation

Location	Depth (m bgl)	Contaminant	Concentration	Guidance Level
WS5	0.80	Arsenic	47	37
Note(s): Units mg/kg				

The risk assessment has established potential pollutant linkage in relation to human health from a single elevated Arsenic concentration within the Weald Clay Formation. Recommendations in relation to this material are made in Section 4.9.

4.5 Asbestos

The test certificate for each sample submitted for contamination analysis during this investigation includes the results of an Asbestos Screen.

In each case 'Not detected' was reported.

This finding does not obviate the risk of asbestos being present on the site and the Client must seek advice from qualified and competent asbestos specialist during and prior to undertaking works to ensure compliance with appropriate legislation and guidance.

4.6 Risk to Groundwater

The site is located on a Secondary A aquifer, is not within a groundwater source protection zone and the closest groundwater abstraction is located 785m west from the site and is for spray irrigation.

The groundwater flow was anticipated to be in a westerly direction based on the overlying topography

The nearest surface water course is located approximately 33m to the northwest of the site.

4.7 Ground Gas Risk

The Desk Study (LS8495 dated 29th May 2025) identified a low to high risk of ground gas on site.

No further assessments were commissioned.

4.7.1 Radon

Radon protective measures **will not be required** within the proposed new development as less than 1% of homes are at or above the Action Level.

4.8 Generic Quantitative Risk Assessment

Quantitative risk assessments are undertaken for the soil. The CSM has been updated to take account of the assessments below and presented in Appendix C.1. The full laboratory chemical report is presented in Appendix C.2.

4.8.1 Soils

One of the samples tested showed concentrations in excess of the relevant C4SL for a residential land-use scenario with home grown produce. In WS5 at 0.80m bgl Arsenic was recorded at a concentration of 47mg/kg against the C4SL of 37mg/kg.

However, the Arsenic was encountered in natural soils at a depth of 0.80m, and as such is unlikely to be interacted with by site users. On that basis, the Tier 1 Quantitative risk assessment established that there was no risk to the human health receptors of future end-users. Construction workers should take appropriate H&S precautions as excavations may exceed 0.60m bgl.

4.8.2 Groundwater

Based on the shallow soils analysis and sensitivity of the site, the risk to controlled waters is very low (or low) and no further assessment is warranted.

4.8.3 Ground Gas

The Desk Study identified a low to high risk of ground gas on site. however, the client did not commission monitoring.

4.9 Recommendations

Soil chemical analysis recorded one sample with a substance level over its relevant guideline value. However, the sample was at a depth of 0.80m bgl and is not considered a risk to end-users.

In-situ testing recorded PID levels below 1ppm, so no further action is necessary.

Therefore, there was not a risk to the Human Health, Building Structures and Services and Groundwater receptors, and no further works are required, subject to local authority approval.

If any contamination is discovered during the construction process, work must stop until a method statement for dealing with the contamination has been issued.

4.10 Protection of Services

Contamination of the ground may pose a risk to human health by permeating potable water supply pipes. To fulfil their statutory obligations, UK water supply companies require robust evidence from developers to demonstrate either that the ground in which new plastic supply pipes will be laid is free from contaminants specified in UKWIR Report 10/WM/03/21 Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites (UKWIR, 2010), or that the proposed remedial strategy will mitigate any existing risk.

4.11 Duty of Care

Groundworkers must maintain a good standard of personal hygiene including the wearing of overalls, boots, gloves and eye protectors and the use of dust masks during periods of dry weather.

4.12 Excavated Material

Excavated material as waste must be defined or classified prior to any disposal, transport, recycling or re-use at or by an appropriately licensed or exempt carrier and/or off-site disposal facility. The requirements inherent in both Duty of Care and Health and Safety must also be complied with. In order to determine what is to happen, what is suitable, appropriate and most effective in the disposal of wastes, especially those subject to CDM waste management plan requirements, several factors must be considered, and competent advice must always be sought.

4.13 HazWasteOnline

Further consideration of results using HazWasteOnline™ can be undertaken on request to give an indication of potentially hazardous properties in the materials analysed.

4.14 Re-use of Excavated Material On-site

The re-use of on-site soils may be undertaken either under the Environmental Permitting Regulations 2007 (EPR), in which case soils other than uncontaminated soils are classed as waste, or under the CL:AIRE Voluntary Code of Practice (CoP) which was published in September 2008 and is accepted as an alternative regime to the EPR.

4.15 Imported Material

Any soil, which is to be imported onto the site, must undergo chemical analysis to permit classification prior to its importation and placement to ascertain its status with specific regard to contamination, i.e. to prove that it is suitable for the purpose for which it is intended.

4.16 Discovery Strategy

There may be areas of contamination not identified during the investigation. Such occurrences may also be discovered during the demolition and construction phases for the redevelopment of the site.

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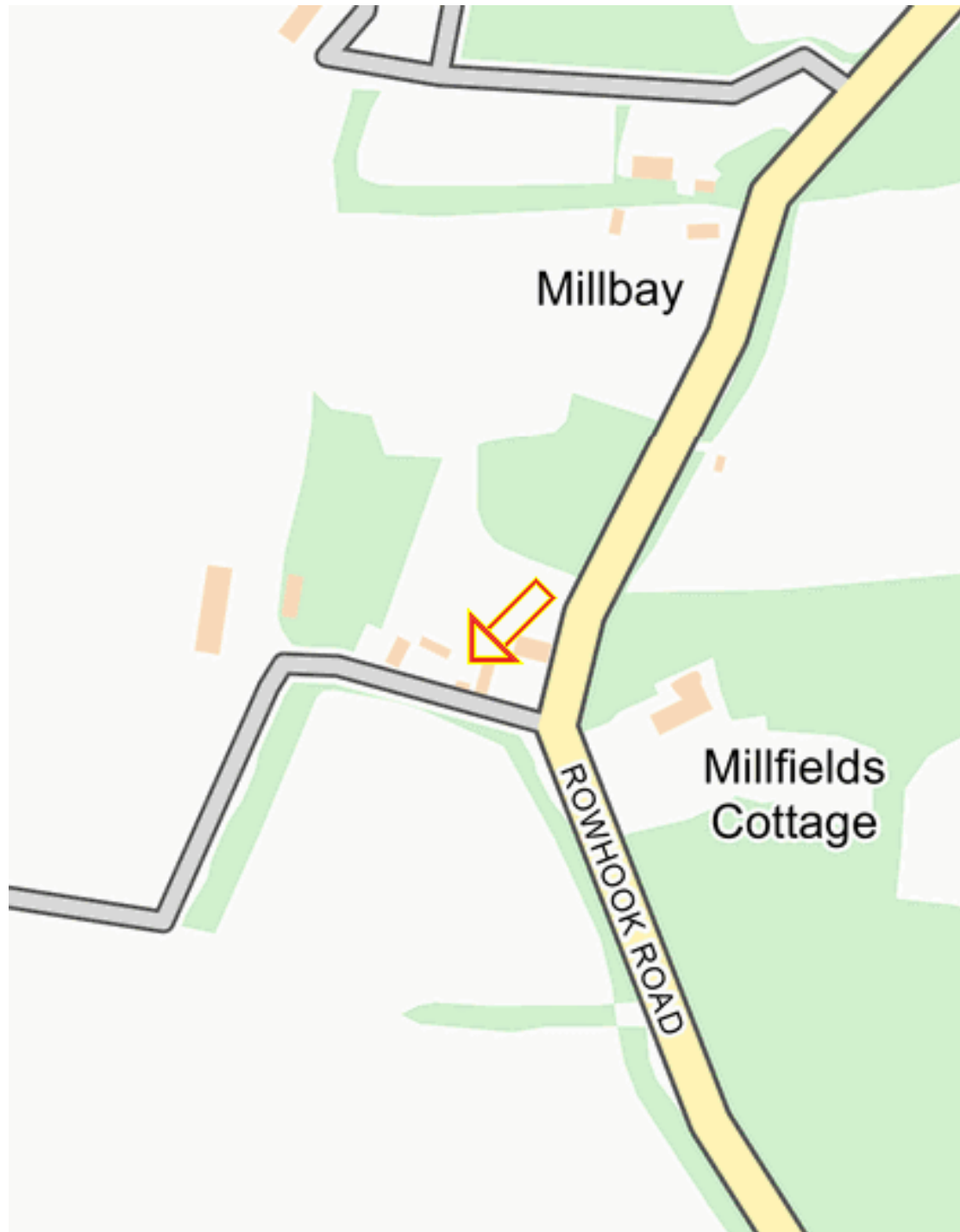


Figure 1 – Site Location Map



Job Number

22009

Project

Little Millfields, Horsham Road, Rowhook, West Sussex, RH12 3PZ

Client

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Figure 2 – Aerial Photograph



Job Number 22009	Project Little Millfields, Horsham Road, Rowhook, West Sussex, RH12 3PZ
Client Carlin Capital	Date August 2025



Figure 3 – Exploratory Hole Plan



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22009

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Little Millfields, Horsham Road, Rowhook, West Sussex, RH12 3PZ

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Carlin Capital

Date

August 2025

Appendix A Standards and Resources

The site works, soil descriptions and testing were undertaken in accordance with the following standards where applicable:

- BS 5930:2015 and BS EN ISO 22476-2 2005+A1:2011
- BS 10175:2011+A2:2017 - Investigation of potentially contaminated sites
- LCRM 2021 Environment Agency
- SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination December 2014
- Soil Guideline Value (SGV) (Environment Agency, 2009)
- Suitable 4 Use Level (S4UL) (Nathanail et al, 2015)
- Google Earth
- British Geological Survey Website & iGeology App

Appendix B Field Work

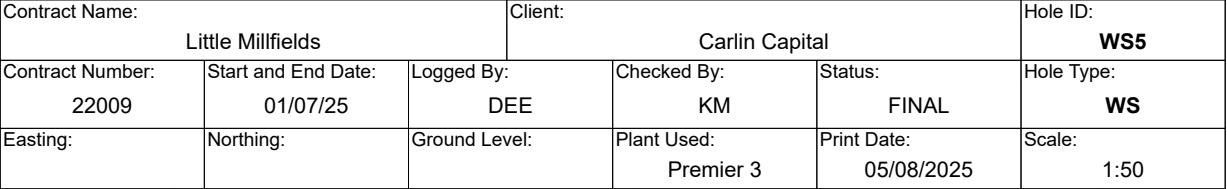
Appendix B.1 Engineers Logs

soils L I M I T E D	Contract Name: Little Millfields				Client: Carlin Capital				Hole ID: WS1					
	Contract Number: 22009		Start and End Date: 01/07/25		Logged By: AN		Checked By: KM		Status: FINAL		Hole Type: WS			
	Easting:		Northing:		Ground Level:		Plant Used: Premier 3		Print Date: 05/08/2025		Scale: 1:50			
Weather:			Termination: reached depth					Sheet 1 of 1						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation	
0.00 - 0.30	ES	0.4ppm		(0.30)		Soft dark grey slightly sandy, slightly gravelly, slightly silty CLAY. Sand is finer. Gravel is angular to subangular, fine to coarse flint with fragments of brick and concrete. MADE GROUND								
0.00	PID													
0.30 - 0.50	ES													
0.30	PID	0.3ppm		0.50		Firm yellowish brown mottled dark brown slightly sandy CLAY. Sand is fine . Rare angular fine to medium brick gravel . MADE GROUND								
0.80	ES													
	PID													
		0.5ppm				Firm to stiff yellowish brown mottled light grey becoming orangish brown mottled light grey CLAY. Rare desiccated rootlets. WEALD CLAY						1		
1.30	ES													
1.80	ES													
						End of Borehole at 2.00m						2		
												3		
												4		
												5		
												6		
												7		
												8		
												9		
												10		
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Desiccated rootlets observed to 2.00m bgl.					
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
												0	0.00	Groundwater not encountered
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

	Contract Name: Little Millfields				Client: Carlin Capital				Hole ID: WS2					
	Contract Number: 22009		Start and End Date: 01/07/25		Logged By: AN		Checked By: KM		Status: FINAL		Hole Type: WS			
	Easting:		Northing:		Ground Level:		Plant Used: Premier 3		Print Date: 05/08/2025		Scale: 1:50			
Weather:			Termination: reached depth					Sheet 1 of 1						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/ Installation	
0.20	ES PID	0.5ppm		0.10 (0.30)		Concrete Soft dark grey slightly sandy, slightly silty CLAY. Sand is finer . Rare angular coarse brick and metal. MADE GROUND								
0.50	ES PID	0.7ppm		0.40 (0.30)		Soft greenish grey slightly sandy CLAY. Sand is fine to medium. WEALD CLAY FORMATION								
0.80	ES PID	0.5ppm		0.70		Firm to stiff yellowish brown mottled light grey becoming orangish brown mottled light grey CLAY. Rare desiccated rootlets. WEALD CLAY FORMATION						1		
1.30	ES			(1.30)										
1.80	ES			2.00										
						End of Borehole at 2.00m						2		
												3		
												4		
												5		
												6		
												7		
												8		
												9		
												10		
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Desiccated rootlets observed to 2.00m bgl.					
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
												0	0.00	Groundwater not encountered
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

soils L I M I T E D	Contract Name: Little Millfields				Client: Carlin Capital				Hole ID: WS3					
	Contract Number: 22009		Start and End Date: 01/07/25		Logged By: AN		Checked By: KM		Status: FINAL		Hole Type: WS			
	Easting:		Northing:		Ground Level:		Plant Used: Premier 3		Print Date: 05/08/2025		Scale: 1:50			
Weather:			Termination: reached depth									Sheet 1 of 1		
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation	
0.20	ES PID	0.3ppm		0.10 (0.30)		Concrete								
0.50	ES PID	0.5ppm		0.40 (0.35)		Soft dark brown slightly sandy , slightly gravelly SILT . Sand is fine to coarse. Gravel is Angular to subangular, fine to coarse flint with brick, glass and metal. MADE GROUND								
0.80	ES PID	0.4ppm		0.75		Stiff brown mottled reddish brown slightly sandy CLAY. Sand is fine. WEALD CLAY FORMATION								
				1.00		Soft light grey mottled yellowish brown and dark grey slightly sandy CLAY. Sand is fine. WEALD CLAY FORMATION						1		
1.30	ES			(1.00)		Firm to stiff yellowish brown mottled light grey CLAY. Rare desiccated rootlets. WEALD CLAY FORMATION								
1.80	ES			2.00		End of Borehole at 2.00m						2		
												3		
												4		
												5		
												6		
												7		
												8		
												9		
												10		
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Desiccated rootlets observed to 2.00m bgl.					
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
												0	0.00	Groundwater not encountered
									Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.					

	Contract Name: Little Millfields				Client: Carlin Capital				Hole ID: WS4					
	Contract Number: 22009		Start and End Date: 01/07/25		Logged By: DEE		Checked By: KM		Status: FINAL		Hole Type: WS			
	Easting:		Northing:		Ground Level:		Plant Used: Premier 3		Print Date: 05/08/2025		Scale: 1:50			
Weather:			Termination: reached depth					Sheet 1 of 1						
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation	
0.10	ES PID	0.3ppm		(0.40)		Stiff greyish brown slightly sandy, slightly gravelly desiccated CLAY. Gravel is angular, fine to medium brick, clinker, and charcoal. Frequent rootlets. MADE GROUND.								
0.50	ES PID	0.4ppm		0.40		Stiff multicoloured, slightly gravelly, slightly sandy CLAY. Sand is fine to medium. Gravel is angular to sub-angular, fine to medium sandstone lithorelicts and ferruginous nodules. Occasional rootlets. WEALD CLAY FORMATION								
0.70	ES PID	0.4ppm		0.60		Stiff light brownish grey mottled brown, slightly sandy silty CLAY. Sand is fine to medium. Occasional fine black speckles and mottling (odourless, organic). Occasional rootlets. WEALD CLAY FORMATION						1		
1.30	D			(0.60)		Stiff brown mottled yellowish brown and grey, slightly sandy silty CLAY. Sand is fine to medium. Occasional fine black speckles and mottling (odourless, organic). Rare desiccated rootlets.. WEALD CLAY FORMATION								
1.80	D			1.20										
				(0.80)										
				2.00		End of Borehole at 2.00m						2		
												3		
												4		
												5		
												6		
												7		
												8		
												9		
												10		
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Desiccated rootlets observed to 2.00m bgl.					
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
												0	0.00	Groundwater not encountered
									Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.					



Weather:	Termination: reached depth	Sheet 1 of 1
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[illegible]

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks: Desiccated rootlets observed to 2.00m bgl.					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
												0	0.00	Groundwater not encountered
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

soils L I M I T E D	Contract Name: Little Millfields				Client: Carlin Capital				Hole ID: WS6											
	Contract Number: 22009		Start and End Date: 01/07/25		Logged By: DEE		Checked By: KM		Status: FINAL		Hole Type: WS									
	Easting:		Northing:		Ground Level:		Plant Used: Premier 3		Print Date: 05/08/2025		Scale: 1:50									
Weather:			Termination: reached depth								Sheet 1 of 1									
Samples & In Situ Testing					Strata Details							Groundwater								
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation							
0.10	ES					Very stiff greyish brown slightly sandy, desiccated CLAY. Sand is fine to medium. Frequent rootlets. Rare fine orange sand inclusions. TOPSOIL.														
0.30	PID	0.3ppm		0.20											Very stiff multicoloured, slightly silty sandy CLAY. Sand is fine to medium. Occasional rootlets. WEALD CLAY FORMATION					
0.60	ES	0.4ppm		(0.80)																
	PID	0.3ppm				Stiff light brownish grey mottled brown and yellowish brown, silty CLAY. Occasional fine black speckles and mottling (odourless, organic). Occasional rootlets. Rare fine sand. WEALD CLAY FORMATION						1								
1.00	ES	0.3ppm		1.00																
	PID			(0.35)		Very stiff multicoloured silty CLAY. Occasional fine black speckles and mottling (odourless, organic). Occasional desiccated rootlets. Occasional angular to sub-angular fine to medium mudstone lithorelicts. Rare fine sand. WEALD CLAY FORMATION														
1.40	D			1.35																
				(0.35)		Sub-angular medium mudstone/ironstone nodule.														
1.80	D			1.70																
				(0.30)		Very stiff brown mottled yellowish brown and grey, slightly sandy silty fissured CLAY. Sand is fine. Occasional fine black speckles and mottling (odourless, organic). Rare fine sand. WEALD CLAY FORMATION						2								
				2.00																
						End of Borehole at 2.00m														
												3								
												4								
												5								
												6								
												7								
												8								
												9								
												10								
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:											
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)	Desiccated rootlets observed to 1.60m bgl.											
Chiselling					Installation				Water Strikes											
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks						
												0	0.00	Groundwater not encountered						
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.																				

Appendix C Chemical Laboratory Analyses

Appendix C.1 Conceptual Site Model

Table C.1.1 CSM Revised Pre-Chemical Analyses from Land Science Report (LS8495)

Source	Exposure Pathway	Receptor	Overall Rating	Proposed Investigation
On Site (Soils) - Made Ground - Agricultural land - Storage of building materials on site	Dermal Contact with soil and soil borne dust	End users	High	- Shallow boreholes, or trial pits, to assess the composition and depth of any Made Ground and any field evidence of contamination into the underlying soils. - Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis. The main analytical suite is identified below. - Soil samples should be screened for vapours using a Photoionisation Detector (PID). - Positions should be located adjacent to the site boundaries in west to evaluate the potential for contamination to have migrated laterally onto site and impact on proposed end users. - Samples of any perched water should be collected for laboratory testing
	Ingestion of soil and soil borne dust	End users	High	
	Inhalation of soil borne dust	End users	High	
	Consumption of home grown produce	End users	High	
	Inhalation of soil borne dust	Adjacent Land	Moderate	
	Plant uptake phytotoxic effects	Planting	High	
	Chemical attack	Concrete	Unlikely	
	Chemical attack	Pipework	High	
	Leaching out, migration to water table	Groundwater	Moderate	
	Leaching out, migration to water bodies	Surface water	Unlikely	
Source	Exposure Pathway	Receptor	Overall Rating	Proposed Investigation
On Site (Groundwater) - Made Ground - Agricultural land - Storage of building materials on site	Direct contact	End users	Unlikely	- Shallow boreholes, or trial pits, to assess the composition and depth of any Made Ground and any field evidence of contamination into the underlying soils. - Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis. The main analytical suite is identified below. - Soil samples should be screened for vapours using a Photoionisation Detector (PID). - Positions should be located adjacent to the site boundaries in west to evaluate the potential for contamination to have migrated laterally onto site and impact on proposed end users. - Samples of any perched water should be collected for laboratory testing
	Direct contact	Adjacent land	Unlikely	
	Plant uptake, phytotoxic effects	Planting	Low	
	Chemical attack	Concrete	Unlikely	
	Chemical attack	Pipework	Moderate	
	Migration to controlled water receptor	Groundwater	Low	
	Lateral migration to water bodied	Surface water	Unlikely	
Source	Exposure Pathway	Receptor	Overall Rating	Proposed Investigation
On Site (Vapours) - Made Ground - Agricultural land - Storage of building materials on site	Inhalation, ignition	End users	Moderate	- Shallow boreholes, or trial pits, to assess the composition and depth of any Made Ground and any field evidence of contamination into the underlying soils. - Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis. The main analytical suite is identified below. - Soil samples should be screened for vapours using a Photoionisation Detector (PID). - Positions should be located adjacent to the site boundaries in west to evaluate the potential for contamination to have migrated laterally onto site and impact on proposed end users. - Samples of any perched water should be collected for laboratory testing
	Inhalation, ignition	Adjacent land	Moderate	
	Root asphyxiation, phytotoxic effects	Planting	Moderate	
	Chemical attack	Pipework	Moderate	
Source	Exposure Pathway	Receptor	Overall Rating	Proposed Investigation
On Site (Ground Gases) - Made Ground - Agricultural land - Storage of building materials on site	Inhalation, ignition	End users	Moderate	- Shallow boreholes, or trial pits, to assess the composition and depth of any Made Ground and any field evidence of contamination into the underlying soils. - Selected samples (including materials bearing field evidence of contamination) should be sent for laboratory analysis. The main analytical suite is identified below. - Soil samples should be screened for vapours using a Photoionisation Detector (PID). - Positions should be located adjacent to the site boundaries in west to evaluate the potential for contamination to have migrated laterally onto site and impact on proposed end users. - Samples of any perched water should be collected for laboratory testing
	Inhalation, ignition		High	
	Root asphyxiation, phytotoxic effects		Low	

Table C.1.2 CSM Revised Post-Chemical Analyses

Source	Exposure Pathway	Receptor	Overall Rating	Further works	
				No further works required, subject to emplacement of a discovery strategy.	
On Site (Soils)	Dermal Contact with soil and soil borne dust	End users	None		
	Ingestion of soil and soil borne dust	End users	None		
- Made Ground	Inhalation of soil borne dust	End users	None		
- Agricultural land	Consumption of home grown produce	End users	None		
- Storage of building materials on site	Inhalation of soil borne dust	Adjacent Land	None		
	Plant uptake phytotoxic effects	Planting	None		
	Chemical attack	Concrete	None		
	Chemical attack	Pipework	None		
	Leaching out, migration to water table	Groundwater	None		
	Leaching out, migration to water bodies	Surface water	None		
Source	Exposure Pathway	Receptor	Overall Rating	Further works	
				No further works required, subject to emplacement of a discovery strategy.	
On Site (Groundwater)	Direct contact	End users	None		
	Direct contact	Adjacent land	None		
- Made Ground	Plant uptake, phytotoxic effects	Planting	None		
- Agricultural land	Chemical attack	Concrete	None		
- Storage of building materials on site	Chemical attack	Pipework	None		
	Migration to controlled water receptor	Groundwater	None		
	Lateral migration to water bodied	Surface water	None		
Source	Exposure Pathway	Receptor	Overall Rating	Comments	
				PID screening did not identify any vapours from the samples taken	
On Site (Vapours)	Inhalation, ignition	End users	None		
	Inhalation, ignition	Adjacent land	None		
- Made Ground	Root asphyxiation, phytotoxic effects	Planting	None		
- Agricultural land	Chemical attack	Pipework	None		
- Storage of building materials on site					
Source	Exposure Pathway	Receptor	Overall Rating	Comments	Proposed Investigation
				Limited Made Ground and no putrescible of organic material noted during site investigation. Therefore a low risk of ground gas has been noted.	
On Site (Ground Gases)	Inhalation, ignition	End users	Low		
	Inhalation, ignition		Low		
- Made Ground	Root asphyxiation, phytotoxic effects		Low		
- Agricultural land					
- Storage of building materials on site					

Appendix C.2 Chemical Laboratory Results



4161



SOILS LIMITED
 Newton House
 Cross Road
 Surrey
 KT20 5SR

Analytical Test Report: L25/06983/SLT - 25-73119

Your Project Reference:	Little millfield 22009/KM		
Your Order Number:	22009	Samples Received / Instructed:	11/07/2025 / 11/07/2025
Report Issue Number:	1	Sample Tested:	11/07 to 23/07/2025
Samples Analysed:	6 sample(s)	Report issued:	23/07/2025

Sig



James Gane
 Analytical Services Manager
 CTS

Notes:
General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report with the exception of the asbestos test portion which is held for 6 months unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Asbestos

Please note: Where further analysis is required samples identified as containing asbestos are screened and tested on an as received basis. No correction is made for moisture content and other than the asbestos test(s) these results are not covered by our accreditation

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

This report shall not be reproduce except in full

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited, subUKAS - Subcontracted to a laboratory UKAS accredited for this test, subMCERTS - Subcontracted to a laboratory MCERTS accredited for this test

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

UKAS accreditation on waters only covers the Ground water and Surface water matrices

Date of Issue: 21.05.25

Issued by: J. Gane

Issue No: 4

Rev No: 27

L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Analytical Test Results - Solid

Lab Reference			545587	545588	545589	545590	545591	545592
Client Sample ID			-	-	-	-	-	-
Client Sample Location			WS1	WS2	WS3	WS4	WS5	WS6
Client Sample Type			ES	ES	ES	ES	ES	ES
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			0.30	0.50	0.50	0.50	0.80	0.10
Depth - Bottom (m)			0.30	0.50	0.50	0.50	0.80	0.10
Date of Sampling			07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Clay	Clay	Sand	Clay	Clay	Sand
Determinant	Units	Accreditation						
Arsenic	(mg/kg)	MCERTS	< 10	< 10	< 10	< 10	47	< 10
Boron (w/s)	(mg/kg)	u	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Cadmium	(mg/kg)	MCERTS	0.6	0.5	0.6	0.5	1.1	0.4
Chromium (Total)	(mg/kg)	UKAS	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0
Copper	(mg/kg)	MCERTS	13	6.4	17	20	38	12
Lead	(mg/kg)	MCERTS	32	16	68	16	26	45
Mercury	(mg/kg)	UKAS	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5
Nickel	(mg/kg)	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	56	< 1.0
Selenium	(mg/kg)	u	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Vanadium	(mg/kg)	UKAS	24	21	24	34	36	21
Zinc	(mg/kg)	MCERTS	69	36	140	41	120	110
Total Phenols	(mg/kg)	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
pH	pH Units	MCERTS	8.1	7.6	7.8	7.8	7.3	7.3
Acenaphthene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Acenaphthylene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Anthracene	(mg/kg)	UKAS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Benzo (a) anthracene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.07
Benzo (a) pyrene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.07
Benzo (b) fluoranthene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.10
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Benzo (k) fluoranthene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
Chrysene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.08
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Fluoranthene	(mg/kg)	MCERTS	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.12
Fluorene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Naphthalene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Phenanthrene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.03
Pyrene	(mg/kg)	MCERTS	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.12
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	0.38	< 0.32	< 0.32	< 0.32	< 0.32	0.85
SOM (via TOC)	(%)	UKAS	1.3	< 0.9	2.3	< 0.9	< 0.9	3.0
Asbestos	-	UKAS	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected



4161



A PHENNA GROUP COMPANY

7 - 11 Harding Street
Leicester
LE1 4DH

L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Analytical Test Results - VPH / EPH

Lab Reference	545587	545588	545589	545590	545591	545592
Client Sample ID	-	-	-	-	-	-
Client Sample Location	WS1	WS2	WS3	WS4	WS5	WS6
Client Sample Type	ES	ES	ES	ES	ES	ES
Client Sample Number	-	-	-	-	-	-
Depth - Top (m)	0.30	0.50	0.50	0.50	0.80	0.10
Depth - Bottom (m)	0..30	0.50	0.50	0.50	0.80	0.10
Date of Sampling	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025
Time of Sampling	-	-	-	-	-	-
Sample Matrix	Clay	Clay	Sand	Clay	Clay	Sand
Determinant	Units	Accreditation				
GRO (>C ₅ to C ₈) [HS_MS_1D_AL+AD]	(mg/kg)	u	< 0.16	< 0.16	< 0.16	< 0.16
GRO (>C ₈ to C ₁₀) [EH_1D_Total]	(mg/kg)	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Total TPH (>C ₁₀ to C ₁₂) [EH_1D_Total]	(mg/kg)	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Total TPH (>C ₁₂ to C ₁₆) [EH_1D_Total]	(mg/kg)	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Total TPH (>C ₁₆ to C ₂₁) [EH_1D_Total]	(mg/kg)	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
MRO (>C ₂₁ to C ₄₀) [EH_1D_Total]	(mg/kg)	MCERTS	21	< 15.0	50	< 15.0
Total TPH (C ₆ -C ₄₀) [EH+HS_1D_Total]	(mg/kg)	u	28	22	60	17
					20	55



L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Sample Descriptions

7 - 11 Harding Street
Leicester
LE1 4DH

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)
545587	-	WS1	ES	-	Made Ground- brown slightly gravelly slightly sandy silty clay with rare brick fragments ceramic	18	2.1
545588	-	WS2	ES	-	Brown slightly gravelly sandy silty clay	19	3.8
545589	-	WS3	ES	-	Brown slightly clayey silty sand	18	< 0.1
545590	-	WS4	ES	-	Yellowish brown slightly gravelly sandy silty clay with rare rootlets	14	0.4
545591	-	WS5	ES	-	Greyish brown silty clay	21	< 0.1
545592	-	WS6	ES	-	Brown silty sand with occasional rootlets	16	< 0.1



L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
545587	-	WS1	ES	-	VPH/BTEX - Sample taken from container with head space.
545588	-	WS2	ES	-	VPH/BTEX - Sample taken from container with headspace.
545589	-	WS3	ES	-	VPH/BTEX - Sample taken from container with headspace.
545590	-	WS4	ES	-	VPH/BTEX - Sample taken from container with headspace.
545591	-	WS5	ES	-	VPH/BTEX - Sample taken from container with headspace.
545592	-	WS6	ES	-	VPH/BTEX - Sample taken from container with headspace.



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L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
SKALARHCS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Determination of hexavalent chromium in soil using Skalar segmented flow analyser
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Determination of metals in soils via ICP
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Determination of Polyaromatic hydrocarbons in soil via GC-MS
SKALARPHS	MS - CL - Phenols by Skalar	As received	Passing 10mm test sieve	Determination of total phenols in soil using Skalar segmented flow analyser
TOCS	MS - CL - TOC Eltra	Air Dried	Passing 10mm test sieve	Determination of Total Organic Carbon in soils
TPHS	MS - CL - TPH (GC-FID)	As received	Passing 10mm test sieve	Determination of Total Petroleum Hydrocarbons in soil using GC-FID
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Determination of VPH in soils via Headspace-GC-MS
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Determination of Water soluble Boron in soils via ICP
ASB	MS - AS - Asbestos	-	-	Fibre identification is in accordance with in house documented methods which are based on the procedure documented in the HSE Document HSG 248 "Asbestos: The analysts guide for sampling, analysis and clearance procedures"
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis



L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided

W - No time of sampling provided for water sample

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
545587	-	WS1	ES	-	MS - CL - pH in Soils	R
545587	-	WS1	ES	-	MS - CL - VPH	RX
545588	-	WS2	ES	-	MS - CL - pH in Soils	R
545588	-	WS2	ES	-	MS - CL - VPH	RX
545589	-	WS3	ES	-	MS - CL - pH in Soils	R
545589	-	WS3	ES	-	MS - CL - VPH	RX
545590	-	WS4	ES	-	MS - CL - pH in Soils	R
545590	-	WS4	ES	-	MS - CL - VPH	RX
545591	-	WS5	ES	-	MS - CL - pH in Soils	R
545591	-	WS5	ES	-	MS - CL - VPH	RX
545592	-	WS6	ES	-	MS - CL - pH in Soils	R
545592	-	WS6	ES	-	MS - CL - VPH	RX



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L25/06983/SLT - 25-73119

Project Reference - Little millfield 22009/KM

HWOL TPH Acronym Index

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathmatically subtracted
#2	EH_Total but with fatty acids mathmatically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumlative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Appendix C.3 General Assessment Criteria

HUMAN HEALTH RISK ASSESSMENT

Introduction

The statutory definition of contaminated land was initially defined in the Environmental Protection Act 1990, ref. 1.1, which was introduced by the Environment Act 1995, ref. 1.2, and retained in the Environment Act 2021, ref 1.3, as;

‘Land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) pollution of controlled waters is being, or is likely to be, caused.’

The UK guidance on the assessment of contaminated land has developed as a direct result of the introduction of these Acts. The technical guidance supporting the original legislation was summarised in a number of key documents collectively known as the Contaminated Land Reports (CLRs). These have since been replaced or superseded by Land Contamination Risk Management (LCRM) 2021, ref 1.4 produced and administrated by the Environment Agency online through the .GOV.uk website <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm> .

However, the basic definitions, methodology and guidance remain essentially the same utilizing the UK Contaminated Land Exposure Assessment Models (CLEA) as within the original CLR and planning guidance it replaces or supersedes.

In establishing whether a site fulfils the statutory definition of ‘contaminated land’ it remains necessary to identify, whether a pollutant linkage exists in respect of the land in question and whether the pollutant linkage:

- is resulting in significant harm being caused to the identified receptor in the pollutant linkage,
- presents a significant possibility of significant harm being caused to that receptor,
- is resulting in the pollution of the controlled waters which constitute the receptor, or
- is likely to result in such pollution.

A ‘pollutant linkage’ may therefore be defined as the confirmation of a link between a contaminant ‘source’ and a vulnerable at risk ‘receptor’ by means of a ‘pathway’ and that the risk is potentially significant. If there is no complete linkage, risk defaults to low to negligible and can never be potentially significant.

Assessment Methodology

A four-stage assessment process is followed for identifying potential pollutant linkages on a site. These stages are summarised in the table below:

No.	Process	Description
1	Hazard Identification	Establishing contaminant sources, pathways and receptors (the conceptual model).
2	Hazard Assessment	Analysing the potential for unacceptable risks (what linkages could be present, what could be the effects).
3	Risk Estimation	Trying to establish the magnitude and probability of the possible consequences (what degree of harm might result and to what receptors, and how likely is it).
4	Risk Evaluation	Deciding whether the risk is unacceptable in the context of existing and future proposals.

Stages 1 and 2 develop an initial '*conceptual model*' based upon information collated from desk-based available and existing site information and a walkover of the site as recommended in BS10175 and LCRM. The formation of any conceptual model is an iterative process and as such it should be updated and refined throughout each phase of the project to reflect any additional information obtained and unknowns being resolved and identify the potential contaminants of concern at the site, i.e. those with the potential to cause significant harm to identified receptors.

The extent of the desk studies and enquiries to be conducted should be in general accordance with BS10175 and other UK guidance to produce an initial conceptual model highlighting the known potential risks, remaining unknowns and contaminants of concern. The information from these enquiries is presented in a desk study or preliminary report with recommendations, if necessary, for further work based upon the conceptual model findings and any identified or unresolved unknowns.

If potential pollutant linkages or potentially significant unknowns are identified within the initial conceptual model, further site investigation and report will be recommended and usually required under planning. Such investigation should be based on and driven by the findings of the initial conceptual model and planned in general accordance with BS10175, LCRM and other current UK guidance where relevant. The number of exploratory holes and samples collected for analysis should be consistent with the size, extent and nature of the site, the identified contaminants of concern and the level of initial risk identified in the initial conceptual model. This will enable a contamination risk assessment to be conducted in accordance with current UK requirements, at which point the conceptual model can be updated and any relevant pollutant linkages can be further quantified and any remaining unknowns resolved. As previously this is an iterative process that may highlight or require additional investigation to resolve to the satisfaction of the regulator.

A two-stage investigation process may therefore be more appropriate where time constraints are less of an issue with the first intrusive investigation being conducted as an initial or screening assessment to confirm or validate the presence of potential sources on site identified in the initial conceptual model and to investigate if additional unknown sources not previously identified are present. This helps to define the scope, extent and requirements of a second more refined and targeted investigation to delineate wherever possible the extent of the identified contamination, contaminants of concern and/or remaining unknowns.

All site works should be undertaken in general accordance with the British Standards BS 10175, ref. 5, for environmental only investigations and BS 5930:2015, ref. 1.6, in the case of combined Geoenvironmental and/or Geotechnical investigations.

The results of analysis are compared initially against generic guidance values which are dependent on the proposed end-use of the development and which must ultimately be based on traceable, scientifically valid and justified exposure and chemical data using the UKCLEA methodology.

The end-use and therefore potential exposure pathways may be defined as one of the following under current UK guidance;

- Residential with homegrown produce i.e. typical low rise and low-density housing with gardens where vegetables and fruits may be grown for home consumption.
- Residential without homegrown produce i.e. low-density housing where no gardens are present where vegetables and fruits could be grown for home consumption.
- Allotments – i.e. areas where vegetables and fruits are grown for home consumption but are not specifically associated with a residential property.
- Public open space residential – i.e. grassed areas adjacent and/or directly related to high density housing and other common or communal open areas on which underlying soils could be exposed but on which vegetables and fruits are not grown for consumption.
- Public open space – i.e. areas such as parks, playing fields and other recreational areas to which public access is possible but otherwise to which there is no direct residential linkage.
- Commercial – i.e. industrial premises where there is limited exposure to soil and residents are not present on site.

Standard Land-use Scenarios

The standard land-use scenarios used to develop exposure models are further detailed in the following sections:

Residential with homegrown produce

Generic scenario assumes a house built on a ground bearing slab with a private garden having a lawn, flowerbeds and a small fruit and vegetable patch.

-
- Critical receptor is assumed to be a young female child (zero to six years old)
 - Exposure pathways include direct soil and indoor dust ingestion, consumption of home-grown produce and any adhering soil, skin contact with soils and indoor dust and inhalation of indoor and outdoor dust and vapours.
-

A sub-set of the Residential land-use is **Residential without Homegrown produce**. The generic scenario assumes low density housing with communal landscaped gardens where the consumption of homegrown vegetables will not occur and the pathways of direct ingestion and produce inputs are suitably moderated.

Allotments

Areas of open space commonly made available to local users but remote from residential properties, but on which tenants may grow fruit and vegetables for their own consumption. Typically, there are a number of plots to a site which may have a total area of up to 1 hectare. The tenants are assumed to be adults and that young children make only occasional accompanied visits.

Although some allotment holders may choose to keep animals on allotments, potential exposure to animal products is not currently considered within the CLEA model.

-
- Critical receptor is a young female child (zero to six years old)
 - Exposure pathways include direct soil ingestion, consumption of homegrown produce and any adhering soil, skin contact with soils and inhalation of outdoor dust and vapours but at reduced exposure levels reflecting non-residential status.
-

Commercial

This generic scenario assumes a typical commercial or light industrial property at which employees spend most time indoors and are involved in office-based or relatively light physical work.

-
- Critical receptor is a working female adult (aged 16 to 65 years old).
 - Exposure duration is over working lifetime
 - Exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and dusts and inhalation of dust and vapours but exposure reduced to reflect non-residential nature and general lack of open spaces.
-

Public Open Space within Residential Area

This generic scenario refers to any grassed area up to 0.05 ha that is associated with residential properties but is not for their exclusive use and on which no fruit or vegetables are grown for home consumption.

-
- Grassed area of up to 0.05 ha and a considerable proportion of this (up to 50%) may be bare soil which can be interacted with directly
 - Predominantly used by children for play and/or access
 - Sufficiently close proximity to home for tracking back of soil to occur, thus indoor exposure pathways apply
-

-
- older children chosen as the critical receptor on basis that they will use site most frequently (age class 4-9 years)
-
- ingestion rate assumed to be 75 mg.day⁻¹
-

Public Open Space Park

This generic scenario refers to any public park or grassed space that is more than 0.5ha in area:

-
- Public park (>0.5 ha), predominantly grassed and may also contain children's play equipment and border areas of soil containing flowers or shrubs (75% assumed cover)
-
- Female child age classes 1-6
-
- Soil ingestion rate of 50 mg.day⁻¹
-
- Occupancy period outdoors = 2 hours.day⁻¹
-
- Exposure frequency of 170 days.year⁻¹ for age classes 2-18 and 85 days.year⁻¹ for age class 1
-
- Outdoor exposure pathways only (no tracking back of soils).
-

Human Health Generic Quantitative Risk Assessment (GQRA) involves the comparison of contaminant concentrations measured in soil at the site with Generic Assessment Criteria (GAC) generated using the CLEA model based on the exposure and land use scenario assumptions noted above.

GAC's are deliberately conservative values adopted to ensure that they are applicable to the majority of possible contaminated sites and below which there is considered a low to negligible risk to identified human health receptors, i.e. there can be no harm. These values may be published Contaminated Land Exposure Assessment Model (CLEA) derived GAC's derived by a competent third party or the Environment Agency / DEFRA. It is imperative to the risk assessor to understand the uncertainties and limitations associated with these GAC's to ensure that they are used appropriately.

Where the adoption of a GAC is not appropriate, for instance when the intended land-use is at variance the CLEA standard land-uses or the contaminant is susceptible to wide variation depending on factors such as form and bioavailability, then a Detailed Quantitative Risk Assessment (DQRA) may be undertaken to develop site specific or remediation values for relevant soil contaminants based on site and contaminant specific conditions.

In 2014, the publication of Category 4 Screening Levels (C4SL), refs 1.8 and 1.9, as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3) ref 1.7 used in the generation of SGVs. C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern. Where a C4SL has been published, Soils Limited has adopted them as GAC for these six substances.

For all other substances the soils will be compared to Suitable For Use Levels (S4ULs) published by LQM, ref. 1.10, which were developed for around 85 substances and are

intended to enable a screening assessment of the risks posed by soil quality on development sites. The updated LQM/CIEH GAC publication was developed to accommodate recent developments in the understanding of chemical, toxicological and routine exposure to soil-based contaminants.

Where no S4UL or C4SL is available, assessment criteria may be generated using the Contaminated Land Exposure Assessment (CLEA) Software Version 1.07, ref. 1.11, Toxicological and physico-chemical/fate and transport data used to generate the criteria has been derived from a hierarchy of data sources as follows:

1. Environment Agency or Department of Environment Food and Rural Affairs (DEFRA) documents;
2. Other documents produced by UK Government or state organisations;
3. European institution documents;
4. International organisation documents;
5. Foreign government institutions.

In the case of the majority of contaminants considered, the toxicological data has been drawn originally from the relevant CLR 9 TOX report, or updated toxicological data published by the Environment Agency (2009), where available. Where no TOX report is available reference has been made to appropriately determined health criteria values, derived from the above-noted hierarchy, as this is considered to represent appropriate peer reviewed data sources. Similarly, fate and transport data should also be determined by reference to appropriate sources and the CLEA model assumptions.

Chemical laboratory test results are processed as follows. A statistical analysis of the results is conducted, as detailed in CIEH and CL:AIRE 'Guidance on Comparing Soil Contamination Data with a Critical Concentration', ref. 1.12. Individual concentrations are then compared to the selected guideline values to identify and isolate concentrations of contaminants that are in excess of the selected screening low or no risk criteria.

Where the risk estimation identifies significant concentrations of one or more contaminants, further risk evaluation needs to be undertaken often as a site specific DQRA in line with current guidance to determine and confirm if the identified exceedances are significant in the context of the proposed development or activity.

References

- 1.1 The Environmental Protection Act, Part IIA, Section 78, DoE 1990.
- 1.2 Environment Act 1995, Section 57, DoE 1995.
- 1.3 Environment Act 2021 OEP 2021.
- 1.4 Land Contamination Risk Management Gov.UK (EA) 2021
- 1.5 BS 10175: 2011+A2:2017 '*Investigation of potentially contaminated sites. Code of practice*', British Standards Institute, 2017
- 1.6 BS 5930: 2015+A1:2020 '*Code of practice for ground investigations*', British Standards Institute, 2015
- 1.7 Science Report SC050021/SR3 '*Updated technical background to the CLEA model*', Environment Agency, 2008
- 1.8 DEFRA SP1010: Development of Category 4 Screening Levels for the Assessment of Land Affected by Contamination, published March 2014.
- 1.9 Contaminated Land: Applications in Real Environment (CL:AIRE) (2014). '*Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination*', Revision 2, DEFRA research project SP1010.
- 1.10 The LQM/S4ULs for Human Health Risk Assessment, Nathanail P, McCaffery C, Gillett A, Ogden R, and Nathanail J, Land Quality Press, Nottingham, published 2015.
- 1.11 CLEA '*Software Version 1.071*' (downloaded from the CL:AIRE website , <https://www.claire.co.uk/home/news/44-risk-assessment/178-soil-guideline-values>)
- 1.12 CIEH '*Guidance on Comparing Soil Contamination Data with a Critical Concentration*', Chartered Institute of Environmental Health (CIEH) and Contaminated Land: Applications in Real Environments (CL:AIRE), May 2008.

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)											Name	Authority	Date
			With			Without			Allotments			Commercial			Residential						Park				
			SOM	1.0	2.5	6	1	2.5							6	1	2.5	6	1	2.5	6	1			
Type	Contaminants	Species	Year																						
Metals	Antimony		2010					550						7500								EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE	2010	
	Arsenic		2014			37		40			49			640		79		168				C4SL	DEFRA	2014	
			2015			37		40			40			640		79		170				S4UL	LQM/CIEH	2015	
	Barium		2010					1300						22000								EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE	2010	
	Beryllium		2015			1.7		1.7			35			12		2.2		63				S4UL	LQM/CIEH	2015	
	Boron		2015			290		11000			45			240000		21000		46000				S4UL	LQM/CIEH	2015	
	Cadmium		2015			11		85			1.9			190		120		532				S4UL	LQM/CIEH	2015	
	Chromium	III	2014			26		149			4.9			410		220		880				C4SL	DEFRA	2014	
			2015			910		910		18000		8600		1500		33000		S4UL	LQM/CIEH	2015					
			2014			21		21		170		49		23		250		C4SL	DEFRA	2014					
		VI	2015			6		6			1.8			33		7.7		220				S4UL	LQM/CIEH	2015	
	Copper		2015			2400		7100			520			68000		12000		44000				S4UL	LQM/CIEH	2015	
	Lead		2014*			82-210		130-310			30-84			1100-6000		270-760		580-1400				C4SL	DEFRA	2014	
	Mercury	Elemental	2012			1.0		1.0			26			26				210				DEFRA	2012		
			2015			1.2		1.2		21		58		16		30		S4UL	LQM/CIEH	2015					
		Inorganic	2012			170		170			80			36000				SGV	DEFRA	2012					
			2015			40		56		19		1100		120		240		S4UL	LQM/CIEH	2015					
		Methyl	2012			11		11			8			410				SGV	DEFRA	2012					
			2015			11		15			6			320		40		68				S4UL	LQM/CIEH	2015	
	Molybdenum		2010					670						17000				EIC/AGS/ CL:AIRE	EIC/AGS/ CL:AIRE	2010					
	Nickel		2012			130		130			230			1800				SGV	DEFRA	2012					
			2015			130		180			53			980		230		800				S4UL	LQM/CIEH	2015	
	Selenium		2012			350		595			120			13000				SGV	DEFRA	2012					
			2015			250		430			88			12000		1100		1800				S4UL	LQM/CIEH	2015	
	Vanadium		2015			410		1200			91			9000		2000		5000				S4UL	LQM/CIEH	2015	
	Zinc		2015			3700		40000			620			730000		81000		170000				S4UL	LQM/CIEH	2015	
BTEX & MTBE	Benzene		2012			0.33		0.33			0.07			95				SGV	DEFRA	2012					
			2014			0.87		3.3			0.18			98		140		230				C4SL	DEFRA	2014	
			2015	0.087	0.17	0.37	0.38	0.7	1.4	0.017	0.034	0.075	27	47	90	72	72	73	90	100	110	S4UL	LQM/CIEH	2015	
	Toluene		2012			610		610			120			4400				SGV	DEFRA	2012					
			2015	130	290	660	880	1900	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000	S4UL	LQM/CIEH	2015	
	Ethylbenzene		2012			350		350			90			2800				SGV	DEFRA	2012					
			2015	47	110	260	83	190	440	16	39	91	5700	13000	27000	24000	24000	25000	17000	22000	27000	S4UL	LQM/CIEH	2015	
	Xylenes	o-xylene	2012			250		250			160			2600				SGV	DEFRA	2012					
			2015	60	140	330	88	210	480	28	67	160	6600	15000	33000	41000	42000	43000	17000	24000	33000	S4UL	LQM/CIEH	2015	
		m-xylene	2012			240		240			180			3500				SGV	DEFRA	2012					
			2015	59	140	320	82	190	450	31	74	170	6200	14000	31000	41000	42000	43000	17000	24000	32000	S4UL	LQM/CIEH	2015	
		p-xylene	2012			230		230			160			3200				SGV	DEFRA	2012					
			2015	56	130	310	79	180	430	29	69	160	5900	14000	30000	41000	42000	43000	17000	23000	31000	S4UL	LQM/CIEH	2015	
Petroleum Hydrocarbons Fractions	Aliphatic >C5 - C6		2015	42	78	160	42	78	160	730	1700	3900	3200	5900	12000	570000	590000	600000	95000	5900	12000	S4UL	LQM/CIEH	2015	
	Aliphatic >C6 - C8		2015	100	230	530	100	230	530	2300	5600	13000	7800	17000	40000	600000	610000	620000	150000	17000	40000	S4UL	LQM/CIEH	2015	
	Aliphatic >C8 - C10		2015	27	65	150	27	65	150	320	770	1700	2000	4800	11000	13000	13000	13000	14000	4800	11000	S4UL	LQM/CIEH	2015	
	Aliphatic >C10 - C12		2015	130	330	760	130	330	770	2200	4400	7300	9700	23000	47000	13000	13000	13000	21000	23000	47000	S4UL	LQM/CIEH	2015	
	Aliphatic >C12 - C16		2015	1100	2400	4300	1100	2400	4400	11000	13000	13000	59000	82000	90000	13000	13000	13000	25000	82000	90000	S4UL	LQM/CIEH	2015	
	Aliphatic >C16 - C35		2015	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	170000	180000	S4UL	LQM/CIEH	2015	
	Aliphatic >C35 - C44		2015	65000	92000	140000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	170000	180000	S4UL	LQM/CIEH	2015	
	Aromatic >C5 - C7		2015	70	140	300	370	690	1400	13	27	57	26000	46000	86000	56000	56000	56000	76000	84000	92000	S4UL	LQM/CIEH	2015	
	Aromatic >C7 - C8		2015	130	290	660	860	1800	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000	S4UL	LQM/CIEH	2015	

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)									Name	Authority	Date	
			With			Without			Allotments			Commercial			Residential			Park						
			SOM	1.0	2.5	6	1	2.5							6	1	2.5	6	1	2.5				6
Type	Contaminants	Species	Year																					
	Aromatic >C8 - C10		2015	34	83	190	47	110	270	8.6	21	51	3500	8100	17000	5000	5000	5000	7200	8500	9200	S4UL	LQM/CIEH	2015
	Aromatic >C10 - C12		2015	74	180	380	250	590	1200	13	31	74	16000	28000	34000	5000	5000	5000	9200	9700	10000	S4UL	LQM/CIEH	2015
	Aromatic >C12 - C16		2015	140	330	660	1800	2300	2500	23	57	130	36000	37000	38000	5100	5100	5000	10000	10000	10000	S4UL	LQM/CIEH	2015
	Aromatic >C16 - C21		2015	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000	3800	3800	3800	7600	7700	7800	S4UL	LQM/CIEH	2015
	Aromatic >C21 - C35		2015	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	S4UL	LQM/CIEH	2015
	Aromatic >C34 - C44		2015	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900	S4UL	LQM/CIEH	2015
	Aliphatic + Aromatic >C44 - C70			1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000	3800	28000	28000	7800	7800	7900	S4UL	LQM/CIEH	2015
Polycyclic Aromatic Hydrocarbons (PAH' s) (mg/kg)	Acenaphthene		2015	210	510	1100	3000	4700	6000	34	85	200	84000	97000	100000	15000	15000	15000	29000	29000	29000	S4UL	LQM/CIEH	2015
	Acenaphthylene		2015	170	420	920	2900	4600	6000	28	69	160	83000	97000	100000	15000	15000	15000	29000	29000	29000	S4UL	LQM/CIEH	2015
	Anthracene		2015	2400	5400	11000	31000	35000	37000	380	950	2200	520000	54000	540000	74000	74000	74000	150000	150000	150000	S4UL	LQM/CIEH	2015
	Benzo(a)anthracene		2015	7.2	11	13	11	14	15	2.9	6.5	13	170	170	180	29	29	29	49	56	62	S4UL	LQM/CIEH	2015
	Benzo(a)pyrene		2014			5			5.3			5.7			76			10		21	C4SL	DEFRA	2014	
			2015	2.2	2.7	3	3.2	3.2	3.2	0.79	2	3.5	35	35	36	5.7	5.7	5.7	11	12	13	S4UL	LQM/CIEH	2015
	Benzo(b)fluoranthene		2015	2.6	3.3	3.7	3.9	4.0	4.0	0.99	2.1	3.9	44	44	45	7.1	7.2	7.2	13	15	16	S4UL	LQM/CIEH	2015
	Benzo(ghi)perylene		2015	320	340	350	360	360	360	290	470	640	3900	4000	4000	640	640	640	1400	1500	1600	S4UL	LQM/CIEH	2015
	Benzo(k)fluoranthene		2015	77	93	100	110	110	110	37	75	130	1200	1200	1200	190	190	190	370	410	440	S4UL	LQM/CIEH	2015
	Chrysene		2015	15	22	27	30	31	32	4.1	9.4	19	350	350	350	57	57	57	93	110	120	S4UL	LQM/CIEH	2015
	Dibenz(a,h)anthracene		2015	0.24	0.28	0.3	0.31	0.32	0.32	0.14	0.27	0.43	3.5	3.6	3.6	0.57	0.57	0.58	1.1	1.3	1.4	S4UL	LQM/CIEH	2015
	Fluoranthene		2015	280	560	890	1500	1600	1600	52	130	290	23000	23000	23000	3100	3100	3100	6300	6300	6400	S4UL	LQM/CIEH	2015
	Fluorene		2015	170	400	860	2800	3800	4500	27	67	160	63000	68000	71000	9900	9900	9900	20000	20000	20000	S4UL	LQM/CIEH	2015
	Indeno(1,2,3-cd)pyrene		2015	27	36	41	45	46	46	9.5	21	39	500	510	510	82	82	82	150	170	180	S4UL	LQM/CIEH	2015
	Naphthalene		2015	2.3	5.6	13	2.3	5.6	13	4.1	10	24	190	460	1100	4900	4900	4900	1200	1900	3000	S4UL	LQM/CIEH	2015
	Phenanthrene		2015	95	220	440	1300	1500	1500	15	38	90	22000	22000	23000	3100	3100	3100	6200	6200	6300	S4UL	LQM/CIEH	2015
	Pyrene		2015	620	1200	2000	3700	3800	3800	110	270	620	54000	54000	54000	7400	7400	7400	15000	15000	15000	S4UL	LQM/CIEH	2015
	Coal Tar (Bap as surrogate matter)		2015	0.79	0.98	1.1	1.2	1.2	1.2	0.32	0.67	1.2	15	15	15	2.2	2.2	2.2	4.4	4.7	4.8	S4UL	LQM/CIEH	2015
Chloroalkanes & alkenes	1,2 Dichloroethane		2015	0.0071	0.011	0.019	0.0092	0.013	0.023	0.0046	0.0083	0.016	0.67	0.97	1.7	29	29	29	21	24	28	S4UL	LQM/CIEH	2015
	1,1,1 Trichloroethane		2015	8.8	18	39	9	18	40	48	110	240	660	1300	3000	140000	140000	140000	57000	76000	100000	S4UL	LQM/CIEH	2015
	1,1,2,2 Tetrachloroethane		2015	1.6	3.4	7.5	3.9	8	17	0.41	0.89	2	270	550	1100	1400	1400	1400	1800	2100	2300	S4UL	LQM/CIEH	2015
	1,1,1,2 Tetrachloroethane		2015	1.2	2.8	6.4	1.5	3.5	8.2	0.79	1.9	4.4	110	250	560	1400	1400	1400	1500	1800	2100	S4UL	LQM/CIEH	2015
	Tetrachloroethene (PCE)		2015	0.18	0.39	0.9	0.18	0.4	0.92	0.65	1.5	3.6	19	42	95	1400	1400	1400	810	1100	1500	S4UL	LQM/CIEH	2015
			2021	0.31	0.7	1.6	0.32	0.71	1.6	2	4.8	11	24	55	130	3200	3300	3400	1400	1900	2500	C4SL	CLAIRE	2021
	Tetrachloromethane (Carbon Tetrachloride)		2015	0.026	0.056	0.13	0.026	0.056	0.13	0.45	1	2.4	2.9	6.3	14	890	920	950	190	270	400	S4UL	LQM/CIEH	2015
	Trichloroethene (TCE)		2015	0.016	0.034	0.075	0.017	0.036	0.08	0.041	0.091	0.21	1.2	2.6	5.7	120	120	120	70	91	120	S4UL	LQM/CIEH	2015
			2021	0.0093	0.02	0.043	0.0097	0.02	0.045	0.032	0.072	0.16	0.73	1.5	3.4	76	78	79	41	54	69	C4SL	CLAIRE	2021
	Trichloromethane (Chloroform)		2015	0.91	1.7	3.4	1.2	2.1	4.2	0.42	0.83	1.7	99	170	350	2500	2500	2500	2600	2800	3100	S4UL	LQM/CIEH	2015
	Vinyl Chloride (Cloroethene)		2015	0.00064	0.00087	0.0014	0.00077	0.001	0.0015	0.00055	0.001	0.0018	0.059	0.077	0.12	3.5	3.5	3.5	4.8	5	5.4	S4UL	LQM/CIEH	2015
			2021	0.0064	0.01	0.017	0.015	0.019	0.029	0.0017	0.0031	0.0058	1.1	1.4	2.2	7.8	7.8	7.8	18	19	19	C4SL	CLAIRE	2021
Explosives	2,4,6 Trinitrotoluene		2015	1.6	3.7	8.1	65	66	66	0.24	0.58	1.4	1000	1000	1000	130	130	130	260	270	270	S4UL	LQM/CIEH	2015
	RDX (Hexogen/Cyclonite/1,3,5-trinitro-1,3,5-triazacyclohexane)		2015	120	250	540	13000	13000	13000	17	38	85	210000	210000	210000	26000	26000	27000	49000	51000	53000	S4UL	LQM/CIEH	2015
	HMX (Octogen/1,3,5,7-tetrenitro-1,3,5,7-tetrazacyclo-octane)		2015	5.7	13	26	6700	6700	6700	0.86	1.9	3.9	110000	110000	110000	13000	13000	13000	23000	23000	24000	S4UL	LQM/CIEH	2015
Pesticides	Aldrin		2015	5.7	6.6	7.1	7.3	7.4	7.5	3.2	6.1	9.6	170	170	170	18	18	18	30	31	31	S4UL	LQM/CIEH	2015
	Dieldrin		2015	0.97	2	3.5	7	7.3	7.4	0.17	0.41	0.96	170											

Land Use			Residential With or Without Plant Uptake									Public Open Space (POS)									Name	Authority	Date	
			With			Without			Allotments			Commercial			Residential			Park						
			SOM	1.0	2.5	6	1	2.5							6	1	2.5	6	1	2.5				6
Type	Contaminants	Species	Year																					
Chlorobenzenes	Chlorobenzene		2015	0.46	1	2.4	0.46	1	2.4	5.9	14	32	56	130	290	11000	13000	14000	1300	2000	2900	S4UL	LQM/CIEH	2015
	1,2-Dichlorobenzene		2015	23	55	130	24	57	130	94	230	540	2000	4800	11000	90000	95000	98000	24000	36000	51000	S4UL	LQM/CIEH	2015
	1,3-Dichlorobenzene		2015	0.4	1	2.3	0.44	1.1	2.5	0.25	0.6	1.5	30	73	170	300	300	300	390	440	470	S4UL	LQM/CIEH	2015
	1,4-Dichlorobenzene		2015	61	150	350	61	150	350	15	37	88	4400	10000	25000	17000	17000	1700	36000	36000	36000	S4UL	LQM/CIEH	2015
	1,2,3,-Trichlorobenzene		2015	1.5	3.6	8.6	1.5	3.7	8.8	4.7	12	28	102	250	590	1800	1800	1800	770	1100	1600	S4UL	LQM/CIEH	2015
	1,2,4,-Trichlorobenzene		2015	2.6	6.4	15	2.6	6.4	15	55	140	320	220	530	1300	15000	17000	19000	1700	2600	4000	S4UL	LQM/CIEH	2015
	1,3,5,-Trichlorobenzene		2015	0.33	0.81	1.9	0.33	0.81	1.9	4.7	12	28	23	55	130	1700	1700	1800	380	580	860	S4UL	LQM/CIEH	2015
	1,2,3,4,-Tetrachlorobenzene		2015	15	36	78	24	56	120	4.4	11	26	1700	3080	4400	830	830	830	1500	1600	1600	S4UL	LQM/CIEH	2015
	1,2,3,5,- Tetrachlobenzene		2015	0.66	1.6	3.7	0.75	1.9	4.3	0.38	0.9	2.2	49	120	240	78	79	79	110	120	130	S4UL	LQM/CIEH	2015
	1,2,4, 5,- Tetrachlobenzene		2015	0.33	0.77	1.6	0.73	1.7	3.5	0.06	0.16	0.37	42	72	96	13	13	13	25	26	26	S4UL	LQM/CIEH	2015
	Pentachlorobenzene		2015	5.8	12	22	19	30	38	1.2	3.1	7	640	770	830	100	100	100	190	190	190	S4UL	LQM/CIEH	2015
	Hexachlorobenzene		2015	1.8	3.3	4.9	4.1	5.7	6.7	0.47	1.1	2.5	110	120	120	16	16	16	30	30	30	S4UL	LQM/CIEH	2015
Phenols & Chlorophenols	Phenols		2012			420			420			280			3200							SGV	DEFRA	2012
			2015	120	200	380	440	690	1200	23	42	83	440	690	1300	440	690	1300	440	690	1300	S4UL	LQM/CIEH	2015
	Chlorophenols (4 Congeners)		2015	0.87	2	4.5	94	150	210	0.13	0.3	0.7	3500	4000	4300	620	620	620	1100	1100	1100	S4UL	LQM/CIEH	2015
	Pentachlorophenols		2015	0.22	0.52	1.2	27	29	31	0.03	0.08	0.19	400	400	400	60	60	60	110	120	120	S4UL	LQM/CIEH	2015
Others	Carbon Disulphide		2015	0.14	0.29	0.62	0.14	0.29	0.62	4.8	10	23	11	22	47	11000	11000	12000	1300	1900	2700	S4UL	LQM/CIEH	2015
	Hexachloro-1,3-Butadiene		2015	0.29	0.7	1.6	0.32	0.78	1.8	0.25	0.61	1.4	31	66	120	25	25	25	48	50	51	S4UL	LQM/CIEH	2015
	Sum of PCDDs, PCDFs and dioxin-like PCB's.		2012			8			8			8			240							SGV	DEFRA	2012
NOTE																								
	Priority	Guideline (mg kg ⁻¹)																						
	1	Site Specific Assessment Criteria (SSAC) (Soils Limited)																						
	2	2014: Category 4 Screening Level (C4SL) (Contaminated Land: Application in Real Environment (CL:ARE), 2014 and 2021) * Use upper range value for Lead unless otherwise indicated																						
	3	2012: Soil Guideline Value (SGV) (Environment Agency, 2009)																						
	4	2015: Suitable 4 Use Level (S4UL) (Nathanail et al, 2015)																						
For Generic Risk Assessment, the values in Bold should have priority unless site specific, Client or regulatory requirements dictate otherwise – which must be justified																								
Table reviewed January 2024																								

Appendix D Information Provided by the Client

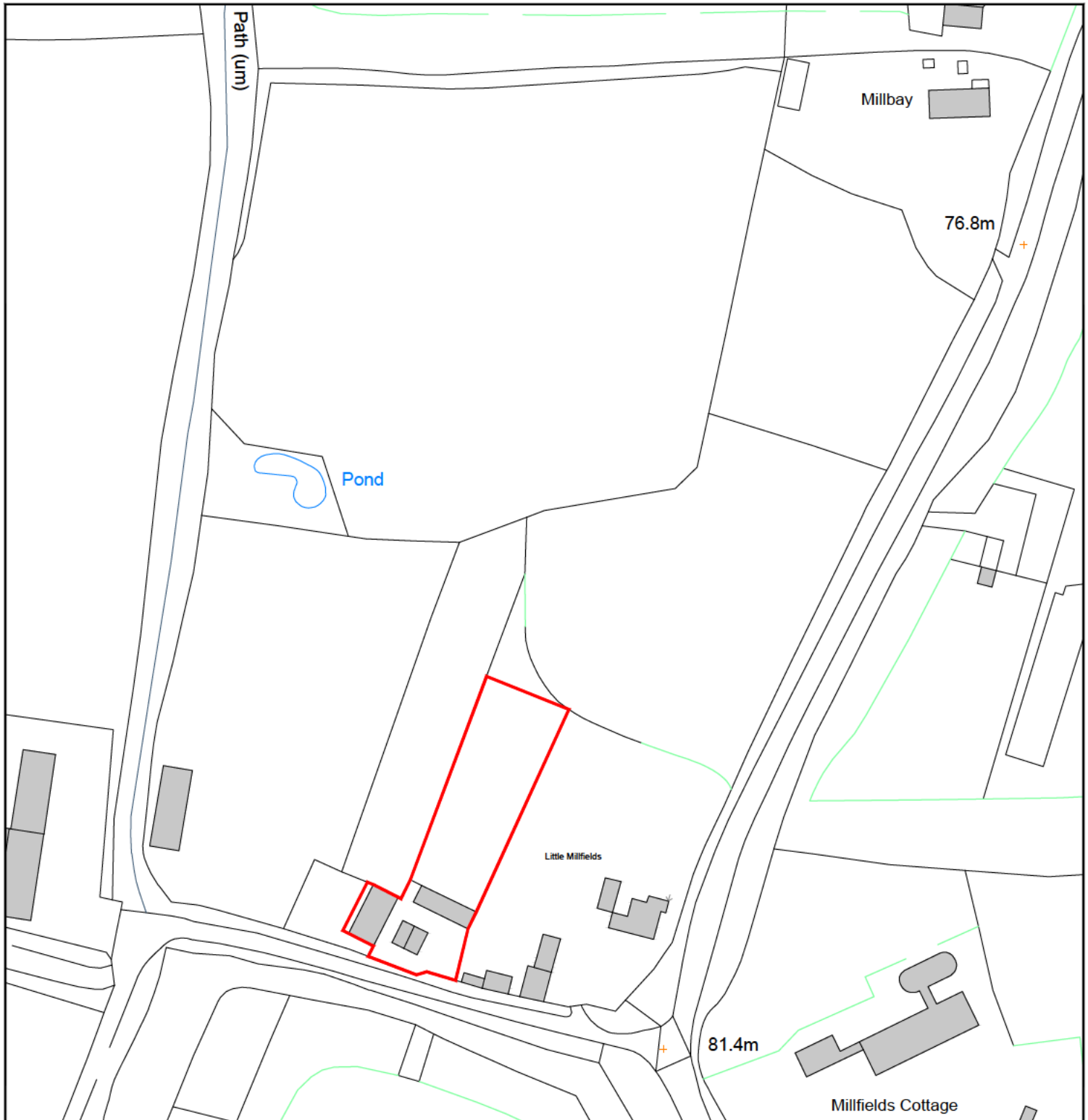


 SITE
BOUNDARY

Ordnance Survey AC0000808122
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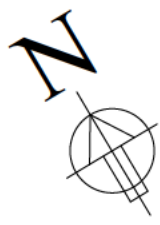


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Scale 1:1250

CLIENT	PROJECT	TITLE	STATUS	DRAWN BY	REVIEWED BY
Mr Paul Roger	Little Millfields Horsham road Rowhook Horsham. RH12 3PZ	Location Plan	Planning	CB	CB
			DATE	SCALE	● A4 DRAWING NUMBER
			July 2025	1:1250	1532 P 000

01730 816336
07949 682974
info@boherarchitecture.com
www.boherarchitecture.com
Challenger House, Rumbolds Hill
Midhurst, GU29 9BY





Approximate total gross internal
floor space - 50.4 m²
543 ft²

CAD DETAILS

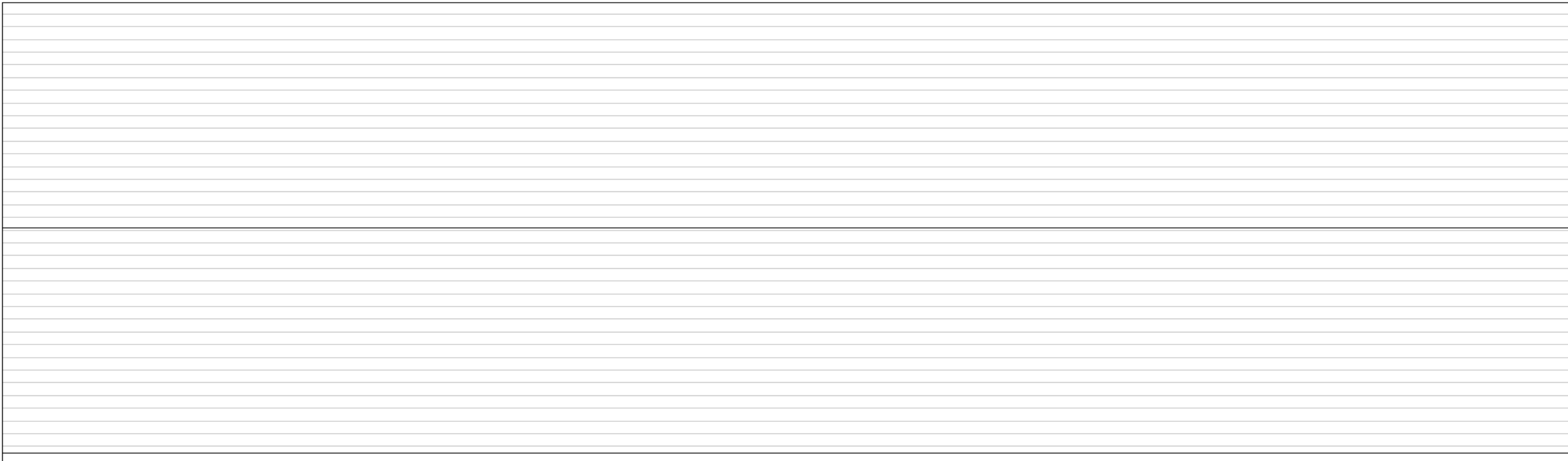
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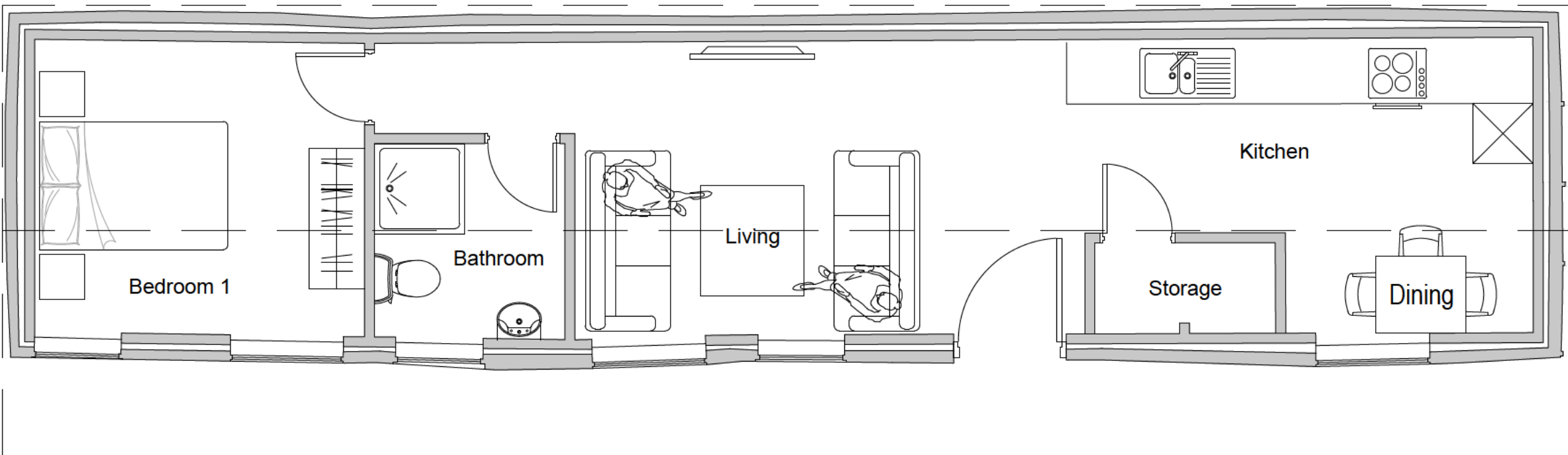
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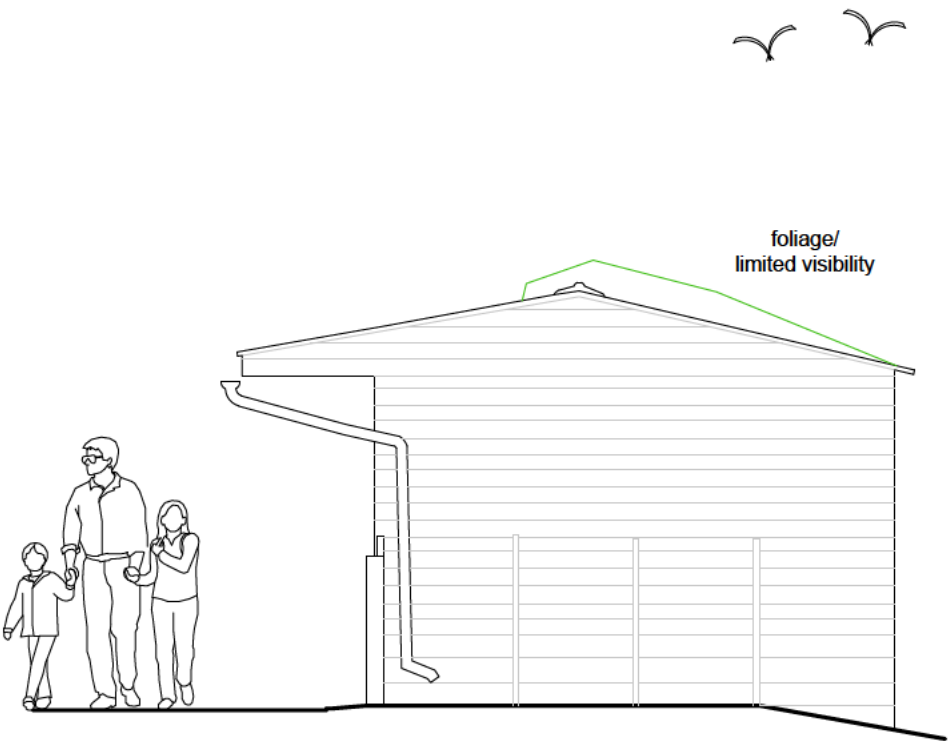
REV: DATE: REVISION: BY: RWM



ROOF PLAN

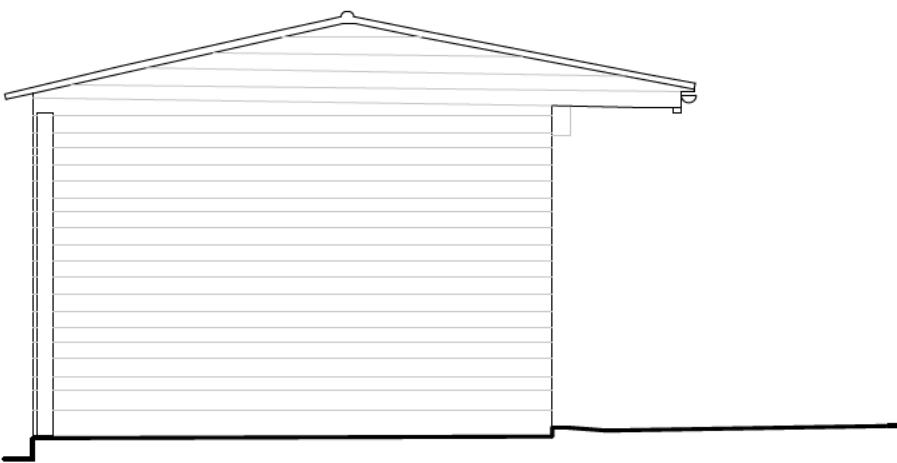


GROUND FLOOR



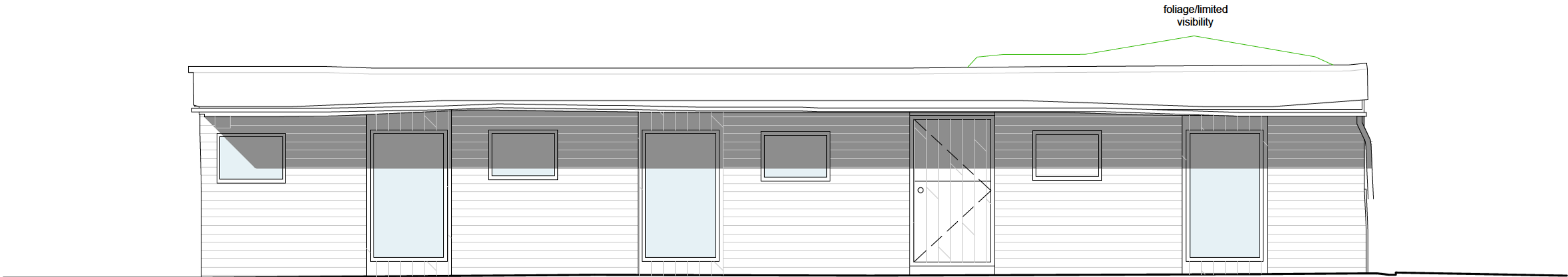
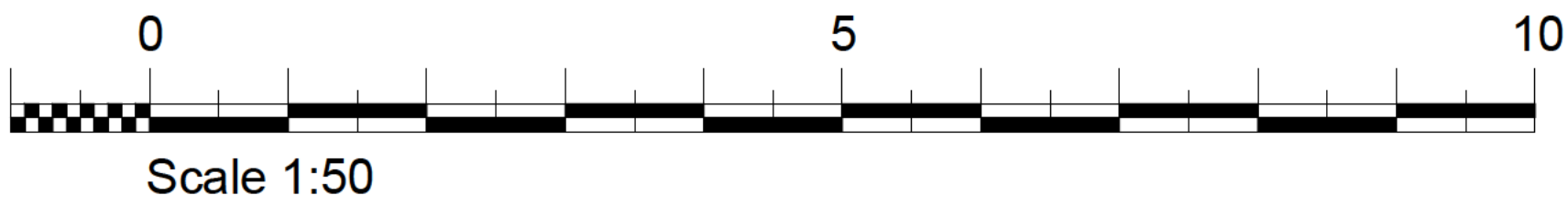
Side Elevation (south east)

DATUM 81.00m



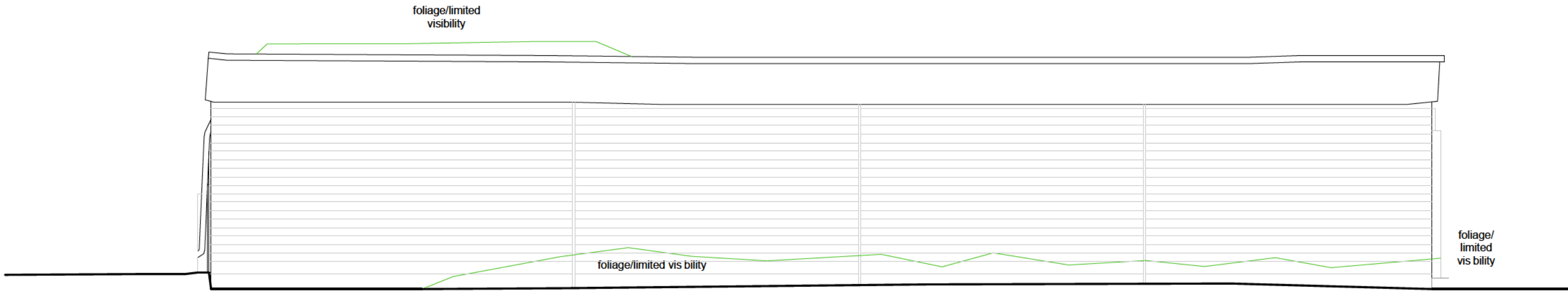
Side Elevation (north west)

DATUM 81.00m



Front Elevation (south west)

DATUM 81.00m



Rear Elevation (north east)

DATUM 81.00m

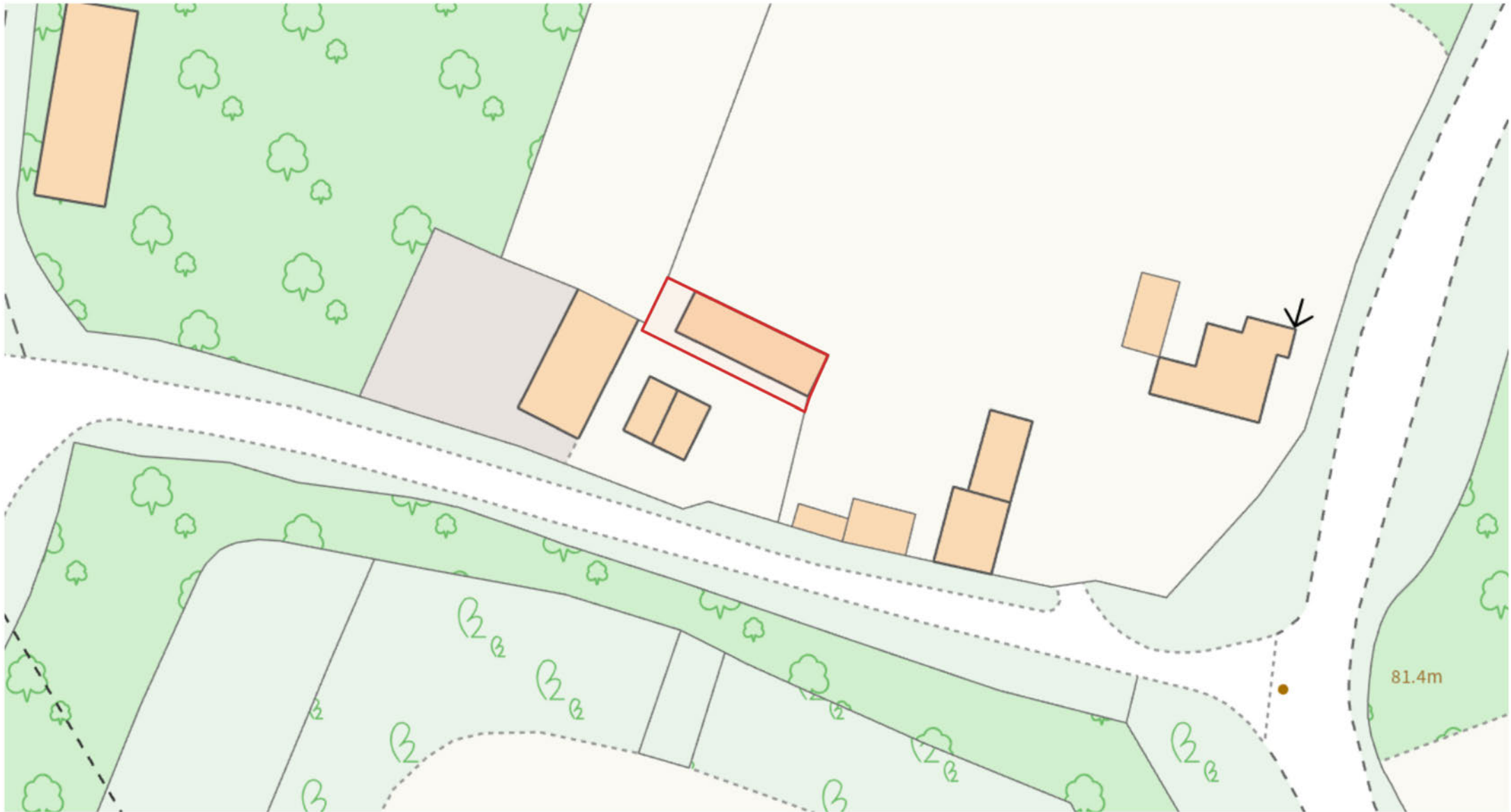
CLIENT	PROJECT	TITLE	STATUS	DRAWN BY	REVIEWED BY
Mr Paul Roger	Little Millfields Horsham Road Rowhook Horsham. RH12 3PZ	Proposed Floor Plans & Elevations Block Plan	Planning	CB	CB
			DATE	SCALE	DRAWING NUMBER
			Jan. 2025	1:50	1532 P 004

01730 816336
07949 682974
info@boherarchitecture.com
www.boherarchitecture.com

BOHER
ARCHITECTURE

Challenger House, Rumbolds Hill
Midhurst, GU29 9BY

Site Plan
Building to west of Little Millfields,
Rowhook Road, Rowhook



Soils Limited
Geotechnical & Environmental Consultants

Newton House
Cross Road, Tadworth
Surrey KT20 5SR

T 01737 814221
W soilslimited.co.uk