



Tier 2 Contamination Investigation and Assessment

Wymondley Bury Lodge, St Mary's Church Road, Little Wymondley

26258-XPL-501

March 2026

Revision History

Rev.	Date	Purpose	Prepared	Checked	Approved
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Table of Contents

1	Introduction	3
1.1	General	3
1.2	Scope of Work	3
1.3	Technical Approach	3
1.4	Future Development	3
2	Site Information and Setting	4
2.1	Site Location	4
2.2	Site Description	4
2.3	Surrounding Land Use	4
2.4	Geology	4
2.5	Hydrogeology	4
2.6	Hydrology	4
2.7	Previous Reports	5
3	Ground Investigation	6
3.1	Site Work	6
3.2	Investigation Rationale	6
3.3	Sampling	6
3.4	Chemical Laboratory Analysis	6
4	Ground and Groundwater Conditions	7
4.1	Ground Conditions	7
4.1.1	Reworked Topsoil	7
4.1.2	Made Ground	7
4.1.3	Lowestoft Formation diamicton	7
4.2	Groundwater Conditions	7
4.3	Evidence of Potential Contamination	8
5	Assessment of Soil Chemical Data	9
5.1	Selection of Assessment Criteria	9
5.2	Generic Screening for Human Health	9
5.3	Asbestos	10
6	Contaminated Land Risk Assessment and Conceptual Site Model	11
6.1	Introduction	11
6.2	Conceptual Site Model	11
6.3	Risk Estimation	12

7	Remediation and Risk Management.....	15
7.1	Human Health Protection for Development.....	15
7.1.1	Soil Contamination.....	15
7.1.2	Water Supply Pipework.....	15
7.2	Human Health Protection for Construction.....	15
7.3	Remediation Strategy.....	15
7.4	Soil Disposal.....	16
8	Conclusions.....	17
9	Recommendations.....	18

Figures

Appendix A – Exploratory Hole Logs

Appendix B – Chemical Laboratory Test Results

Appendix C – Soil Screening Levels

Appendix D – Risk Definition

Executive Summary

Aspect	Summary
Introduction	This Tier 2 Contamination Investigation and Assessment report has been prepared for the client, Ms J Boxall and Mr A Gates. The report is for a residential development, entailing the construction of a new dwelling and garden land. The report follows a recommendation for further intrusive investigation in a previous desk study report by Lucion Ground Engineering in 2024.
Site description and history	The site comprised roughly grassed land containing a former building slab on the eastern boundary. The ground surface was generally level, except along the southern boundary where it rose up towards the southwest. The site contained two previous buildings, occupying roughly similar positions on the eastern boundary. The most recent building was demolished in 2024, leaving a concrete slab intact.
Published geology and hydrogeology	A superficial deposit of Lowestoft Formation (diamicton) is overlying a bedrock of Holywell Nodular Chalk Formation and New Pit Chalk Formation. The Lowestoft Formation diamicton is a Secondary Undifferentiated aquifer. The Chalk is a Principal aquifer. The site is within an outer catchment Source Protection Zone (SPZ2) for a potable water abstraction borehole 222m southwest. Abstraction is from a confined aquifer below the diamicton.
Hydrology	The nearest water features are a pond and drain approximately 15m south, but are upgradient of the site location. There are no sensitive surface water abstractions within 2km.
Ground conditions	The investigation encountered a surface layer of reworked topsoil (0.15-0.3m thick) or made ground (0.46->0.62m thick) across the site. These were clay matrix soils with gravel or cobbles of brick (including whole bricks), clay tile, clay pipe, mortar, flint or chalk. These were overlying Lowestoft Formation diamicton at depths below 0.46-0.6m. The diamicton was a firm, brown, silty CLAY with chalk gravel. A groundwater seepage was in TP3 at a depth of 0.67m.
Soil contamination	Concentrations of the PAH compounds benzo[b]fluoranthene, benzo[a]pyrene and dibenz[a,h]anthracene exceeded human health screening levels in the made ground soils only at TP2. Asbestos was not reported in samples of made ground.
Risk estimation	Risks to human health are Very Low to Moderate.
Recommendations	A Moderate Risk implies remediation is required for development. Given that the made ground encountered in TP2 was thin and no increase in site level is proposed, it is considered more practical to remove the made ground material down to natural soils at this location. The excavation could be infilled with clean soil from elsewhere on site or with imported, clean soil. The area of excavation should be a minimum of 1m surrounding the position of TP2 (i.e. minimum 2m wide x 0.46m deep excavation). Verification of the excavation and infill would normally be required. There would normally be a requirement for the submission of a remediation strategy document. However, given the small scale of the aforementioned

<i>Aspect</i>	<i>Summary</i>
	excavation, the LPA may accept the recommendations of this report in lieu of a remediation strategy but this should be checked with them first. Water supply pipework laid in made ground soils should be of barrier pipe construction. If, during construction works, previously unknown contamination is found or suspected on site then a scheme of investigation and appropriate course of action should be agreed with the LPA.

1 Introduction

1.1 General

This Tier 2 contamination investigation and assessment report has been prepared by Xplor Environmental Ltd (Xplor) for the client, Ms J Boxall and Mr A Gates.

1.2 Scope of Work

The terms of reference for the work were set out in the Xplor fee proposal reference 26258-XPL-101 dated 12 January 2026 and was for a Tier 2 contamination investigation and assessment.

1.3 Technical Approach

The report has been prepared using data from a ground investigation, involving sampling from trial pits and laboratory testing.

It follows a recommendation for further intrusive investigation made in a previous desk study report by Lucion Ground Engineering in 2024

The process of assessment satisfies the Environment Agency guidance, Land Contamination Risk Management (LCRM, 2023) for a Tier 2 contamination risk assessment. A competent person has been involved in the preparation and checking of the report.

1.4 Future Development

The assessment is based on a residential development, entailing the construction of a new dwelling and garden land.

2 Site Information and Setting

2.1 Site Location

The site is land adjacent to Wymondley Bury Lodge, St Mary's Church Road, Little Wymondley, Hertfordshire, SG4 7JN.

The National Grid Reference for the site is 521706 227143. A location plan is presented as Figure 1.

2.2 Site Description

The site comprised roughly grassed land containing a former building concrete slab on the eastern boundary. The ground surface was generally level, except along the southern boundary where it rose up towards the southwest.

2.3 Surrounding Land Use

- North: dwellings and garden land.
- East: dwellings and garden land.
- South: woodland.
- West: stable block and paddock.

2.4 Geology

British Geological Survey (BGS) mapping at 1:10,000 scale indicates the site is underlain by a superficial deposit of Lowestoft Formation (diamicton). A layer of glacial sand and gravel may be present below the base of the diamicton.

The bedrock is of Holywell Nodular Chalk Formation and New Pit Chalk Formation. The superficial deposits in this area infill a glacial channel, such that the chalk may exist at depths of up to 30m.

2.5 Hydrogeology

The Lowestoft Formation diamicton is a Secondary Undifferentiated aquifer. The Chalk is a Principal aquifer but confined at this location by the diamicton.

The site is within an outer catchment Source Protection Zone (SPZ2).

There are 4nr record entries of groundwater abstractions within 2km. The active abstraction is 222m southwest and is a potable water supply operated by Affinity Water Ltd. Abstraction will be from a confined aquifer.

2.6 Hydrology

The nearest water features are a pond and drain approximately 15m south, but are upgradient of the site location.

There is 1nr record entry of surface water abstractions within 2km. However, this is listed as historical and may no longer be longer be active.

2.7 Previous Reports

Lucion Ground Engineering Ltd prepared a Tier 1 contamination assessment in December 2024 (document reference 122194), based on a desk study and site walkover. The relevant findings of the report are summarised below:

- The site has contained two previous buildings, occupying roughly similar positions on the eastern boundary. The most recent building was demolished in 2024, leaving a concrete slab intact.
- The only source of potential contamination identified from the desk study was made ground imported onto site, which was expected to be less than 1m thick.
- The potential for linkage with contaminant sources was estimated to be Unlikely to Low Likelihood.
- Ground investigation was considered to be prudent to check near surface soils for potential contaminants.

3 Ground Investigation

3.1 Site Work

Site work was carried out on 28 January 2026 and was as described in table 3.1.

Table 3.1 Summary of Exploratory Holes

Type	Location	Depth
Hand excavated trial pits	HP1 to HP4	0.6 – 0.92m

The exploratory hole logs are presented in Appendix A and their locations are shown on Figure 2.

3.2 Investigation Rationale

The investigation targeted the sources of potential contamination and development layout as described in table 3.2.

Table 3.2 Investigation Rationale

Location	Target
HP1	Future garden area and location of building shown on historical maps.
HP2	Future garden area.
HP3	Future garden and raised bank on southern boundary.
HP4	Future garden area and raised bank on southern boundary.

3.3 Sampling

Soil samples were recovered from the exploratory holes and stored/transported in containers appropriate for the laboratory testing undertaken.

Sample depths are recorded on the exploratory hole logs.

3.4 Chemical Laboratory Analysis

Table 3.3 lists the chemical laboratory testing carried out. Chemical analysis was undertaken by UKAS-accredited i2 Analytical Ltd and the test results are provided in Appendix B.

Table 3.3 Chemical Analysis

Test	Soil
Xplor brownfield suite: metals, speciated polycyclic aromatic hydrocarbons, aliphatic/aromatic hydrocarbons, MTBE, BTEX, total/free cyanide and total phenols	5
Asbestos screening/identification	5

4 Ground and Groundwater Conditions

4.1 Ground Conditions

The following general strata sequence, where present, was encountered in the exploratory holes.

Table 4.1 Strata Sequence

Stratum	Depth, m		Thickness, m
	Top	Base	
Reworked topsoil	0.0	0.15 – 0.3	0.15 – 0.3
Made ground	0.15 – 0.3	0.46 - >0.92	0.22 - >0.62
Lowestoft Formation diamicton	0.46 – 0.6	>0.8	>0.3

Features, structures or certain ground conditions may be present between exploratory hole locations, which are different to those encountered during the investigation.

4.1.1 Reworked Topsoil

Present from the surface in all holes except TP4, the reworked topsoil was typically a brown, dark brown or greyish brown, silty CLAY with a variable content of fine to coarse gravel.

The gravel was angular to subrounded red brick, flint or chalk.

4.1.2 Made Ground

Present in all holes beneath the reworked topsoil, and from the surface in TP4, was soft to firm, light brown and brown, silty CLAY with a variable content of fine to coarse gravel and cobbles. The gravel was angular to subrounded red brick, clay tile, clay pipe, mortar, flint or chalk. The cobbles were of mortar and whole bricks.

At the base of TP4, was a firm, light brown, silty, slightly fine sandy CLAY with occasional gravel of fine to medium, subangular to subrounded flint.

Both TP3 and TP4 were excavated on the flank of the raised bank on the southern boundary and were terminated in this stratum due to increasingly slower progress in firm soils.

4.1.3 Lowestoft Formation diamicton

In TP1 and TP2, was a firm, brown, silty CLAY with a gravel of fine to medium, subangular to subrounded chalk. This is indicative of a diamicton.

TP1 and TP2 were terminated in this stratum.

4.2 Groundwater Conditions

A seepage was present at 0.67m depth in TP3 and a standing water level was at 0.87m on completion.

4.3 Evidence of Potential Contamination

Apart from the presence of reworked topsoil and made ground, there was no other visible or olfactory evidence of contamination in any of the trial pits.

5 Assessment of Soil Chemical Data

This section presents a human health generic risk assessment to identify potential sources of soil contamination requiring further evaluation. The assessment involved a comparison of chemical laboratory test results to screening levels that were appropriate to the site and its future use.

5.1 Selection of Assessment Criteria

The soil screening values used in this assessment are the Suitable for Use Levels (S4ULs) published in 2015 by Land Quality Management Ltd (LQM) and the Chartered Institute of Environmental Health (CIEH). Category 4 Screening Levels (C4SL) have been used for lead, naphthalene and inorganic mercury. A full list of screening levels used is presented in Appendix C.

The future development will be residential with a private garden for which the assessment criteria was residential with home produce (RwHP).

Screening levels are conservative and assume a soil organic matter (SOM) content of 1%.

5.2 Generic Screening for Human Health

Table 5.1 provides a summary of contaminant concentrations and their comparison to the adopted soil screening levels.

Table 5.1 Summary of Soil Contaminant Test Results

Contaminant	Unit	Screening level	Concentration range	Exceedances
Total cyanide	mg/kg	20	<1	-
Free cyanide	mg/kg	50	<1	-
Total phenols	mg/kg	120	<1	-
Arsenic	mg/kg	37	13 – 23	-
Cadmium	mg/kg	11	<0.2 – 0.9	-
Chromium	mg/kg	910	26 – 55	-
Copper	mg/kg	2,400	20 – 53	-
Lead	mg/kg	200	29 – 180	-
Mercury	mg/kg	200	<0.3	-
Nickel	mg/kg	180	19 – 30	-
Selenium	mg/kg	250	<1	-
Zinc	mg/kg	3,700	70 – 320	-
Naphthalene	mg/kg	15	<0.05 – 0.18	-
Acenaphthylene	mg/kg	170	<0.05 – 0.52	-
Acenaphthene	mg/kg	210	<0.05 – 0.52	-
Fluorene	mg/kg	170	<0.05 – 0.44	-
Phenanthrene	mg/kg	95	0.05 – 5.5	-
Anthracene	mg/kg	2,400	<0.05 – 1.8	-
Fluoranthene	mg/kg	280	0.13 – 17	-
Pyrene	mg/kg	620	0.12 – 16	-
Benzo[a]anthracene	mg/kg	7.2	0.08 – 8.6	-
Chrysene	mg/kg	15	0.09 – 8.5	-
Benzo[b]fluoranthene	mg/kg	2.6	0.09 - 13	13 (TP2, 0-0.2m)

Benzo[k]fluoranthene	mg/kg	77	0.07 – 4.8	-
Benzo[a]pyrene	mg/kg	2.2	0.08 - 11	11 (TP2, 0-0.2m)
Indeno[1,2,3-c,d]pyrene	mg/kg	27	<0.05 – 6	-
Dibenz[a,h]anthracene	mg/kg	0.24	<0.05 – 1.4	1.4 (TP2, 0-0.2m)
Benzo[g,h,i]perylene	mg/kg	320	<0.05 – 6.2	-
TPH Aliphatic >EC5 - EC6	mg/kg	42	<0.01	-
TPH Aliphatic >EC6 - EC8	mg/kg	100	<0.01	-
TPH Aliphatic >EC8 - EC10	mg/kg	27	<0.01	-
TPH Aliphatic >EC10 - EC12	mg/kg	130	<1	-
TPH Aliphatic >EC12 - EC16	mg/kg	1,100	<2	-
TPH Aliphatic >EC16 - EC21	mg/kg	65,000	<8	-
TPH Aliphatic >EC21 - EC35	mg/kg	65,000	<8 – 120	-
TPH Aromatic >EC5 - EC7	mg/kg	70	<0.01	-
TPH Aromatic >EC7 - EC8	mg/kg	130	<0.01	-
TPH Aromatic >EC8 - EC10	mg/kg	34	<0.01	-
TPH Aromatic >EC10 - EC12	mg/kg	74	<1	-
TPH Aromatic >EC12 - EC16	mg/kg	140	<2 – 2.5	-
TPH Aliphatic >EC16 - EC21	mg/kg	260	<10 – 41	-
TPH Aromatic >EC21 - EC35	mg/kg	1,100	<10 – 360	-
MTBE	µg/kg	60	<5	-
Benzene	µg/kg	87	<5	-
Toluene	µg/kg	130,000	<5	-
Ethylbenzene	µg/kg	47,000	<5	-
p&m-Xylene	µg/kg	56,000	<8	-
o-Xylene	µg/kg	60,000	<5	-

5.3 Asbestos

Asbestos fibres were not reported in any made ground samples tested for asbestos.

6 Contaminated Land Risk Assessment and Conceptual Site Model

6.1 Introduction

Risk assessment is a process by which the risks posed by hazards to receptors are estimated. In the context of this report, hazards relate to sources, or potential sources of contamination capable of causing harm (e.g. a contaminant concentration exceeding a screening level) and receptors are the entity that may be at risk of effects from the hazard and include human health, surface waters, groundwater, ecological systems, buildings and services. For a hazard to present a risk to a receptor they must be linked by an exposure pathway.

6.2 Conceptual Site Model

A conceptual site model (CSM) is presented based on an evaluation of the information and generic assessments described in the preceding chapters. The CSM describes the sources, pathways and receptors which form potentially significant pollutant linkages.

Table 6.1 Sources of Contamination Identified from Data Screening

Sources	Contaminant exceeding screening level
Reworked topsoil and made ground in TP2	Benzo[b]fluoranthene (13 mg/kg)
	Benzo[a]pyrene (11 mg/kg)
	Dibenz[a,h]anthracene (1.4 mg/kg)

Table 6.2 Potential Exposure Pathways

Pathways	Description
Direct contact with soil or groundwater (dermal, ingestion or dust/fibre inhalation) including plant uptake – operational phase	Development will be residential apartments with garden land.
Direct contact with soil or groundwater (dermal, ingestion or dust/fibre inhalation) – construction phase	Groundworks will be required for development and the installation or maintenance of underground services.
Leaching from soil down to groundwater	Lowestoft Formation diamicton is a low permeability, clay matrix soil.
Migration in groundwater	Lowestoft Formation diamicton is a low permeability, clay matrix soil.
Migration in surface runoff	Site is generally level with a raised bank along the southern boundary.
Migration of ground gas and organic vapour	Lowestoft Formation diamicton is a low permeability, clay matrix soil.
Contact with new infrastructure and	New foundations and underground services are

<i>Pathways</i>	<i>Description</i>
construction	proposed, including new water supply.

Table 6.3 Potential Contamination Receptors

<i>Receptors</i>	<i>Description</i>
Future site users	Future residents could be exposed to contaminated soils outdoors.
Neighbouring property	Dwellings and garden land are within 10m to the north and east.
Construction and maintenance workers	Groundworks will be required for development and the installation or maintenance of underground services.
Surface water	The nearest water features are a pond and drain 15m south, but are upgradient of the site location.
Groundwater	Lowestoft Formation diamicton is a Secondary Undifferentiated aquifer. Site is in SPZ2 and a potable abstraction borehole is 222m southwest for a confined aquifer.
Water supply pipes	Water supply pipework will be required for development.

6.3 Risk Estimation

Based on the sources, pathways and receptors identified above, Table 6.4 summarises all potentially complete contaminant linkages and identifies the level of risk from each.

In accordance with the adopted methodology, the estimation of risk reflects both the probability of an event occurring (likelihood) and the potential consequence (magnitude) of possible effects. Risk definitions are provided in Appendix D.

A very low or low overall risk implies remediation is unlikely to be required for development or will be limited. A moderate to high overall risk indicates remediation could be required.

Table 6.4 Risk Estimation

Sources	Pathway	Receptor	Probability	Justification	Magnitude	Justification	Overall risk
On site Reworked topsoil/made ground at TP2 <u>Contaminants</u> PAH compounds (benzo[b]fluoranthene, benzo[a]pyrene and dibenz[a,h]anthracene)	Direct contact with soil (dermal, ingestion or dust/fibre inhalation) including plant uptake	Future site users (residential)	Likely	Development will be residential with garden land.	Medium	PAH compounds exceed assessment criteria.	MODERATE
		Future site users (potable water supply)	Likely	Hydrocarbons and PAHs can permeate water supply pipes.	Mild	TPH and PAH concentrations exceed assessment criteria. Taste and odour impairment is possible.	LOW
		Construction and maintenance workers	Likely	Groundworks required for development including the installation or maintenance of underground services.	Mild	As above. Short term exposure during construction phase.	LOW
		Neighbouring property (residential)	Low	Site is generally level and surrounded by permeable surfaces of grassed and garden land.	Mild	As above. Short term exposure during construction phase.	LOW
	Soil leaching down to shallow groundwater	Shallow groundwater (Lowestoft Formation diamicton)	Low	Lowestoft Formation diamicton is a low permeability, clay matrix soil.	Mild	Secondary Undifferentiated aquifer and SPZ2. Leachable or mobile contaminants unlikely to exceed assessment criteria.	LOW
	Migration in shallow groundwater		Unlikely	Lowestoft Formation diamicton is a low permeability, clay matrix soil.	Mild	Secondary Undifferentiated aquifer. SPZ2 and potable abstraction 222m southwest relate to a confined aquifer. Leachable or mobile contaminants unlikely to exceed assessment criteria.	VERY LOW
	Migration in deep groundwater	Deep groundwater (Chalk)	Unlikely	Chalk aquifer is confined by diamicton.	Medium	Principal aquifer and SPZ2. Potable abstraction is 222m southwest. Leachable or mobile contaminants unlikely to exceed assessment criteria.	LOW
	Surface runoff	Pond and drain 15m south	Unlikely	Pond and drain are upgradient.	Mild	Isolated pond and drain are low sensitivity to contaminants. Leachable or mobile contaminants unlikely to exceed assessment criteria.	LOW
	Migration in shallow	Pond and drain 15m	Unlikely	Pond and drain are upgradient.	Mild	Isolated pond and drain are low	LOW

Sources	Pathway	Receptor	Probability	Justification	Magnitude	Justification	Overall risk
	groundwater	south		Diamicton is a low permeability, clay matrix soil.		sensitivity to contaminants. Leachable or mobile contaminants unlikely to exceed assessment criteria.	
	Migration in soil (organic vapour)	Future site users (residential)	Low	Diamicton is a low permeability, clay matrix soil.	Minor	Source of organic vapour not identified in either the Lucion Ground Engineering desk study report or this investigation.	LOW
	Migration in soil (ground gas)	Future site users (residential)	Low	Diamicton is a low permeability, clay matrix soil.	Minor	Source of ground gas not identified in either the Lucion Ground Engineering desk study report. Made ground is relatively thin.	LOW

7 Remediation and Risk Management

This section provides outline guidance on reducing contamination risks for the construction and operational phases of development.

7.1 Human Health Protection for Development

7.1.1 Soil Contamination

Based on testing and risk assessment, there is considered to be a Moderate Risk from the PAH compounds benzo[b]fluoranthene, benzo[a]pyrene and dibenz[a,h]anthracene in the reworked topsoil and made ground soils at TP2. A Moderate Risk implies remediation is required for development.

Given that the reworked topsoil and made ground soils encountered in TP2 were thin (0.46m thick) and no increase in site level is proposed, it is considered more practical to remove the material down to natural soils at this location. The excavation could be infilled with clean soil from elsewhere on site or with imported, clean soil. The area of excavation should be a minimum of 1m surrounding the position of TP2 (i.e. minimum 2m wide x 0.46m deep excavation). Verification of the remediation excavation sidewalls, base and infill would be required.

7.1.2 Water Supply Pipework

Water supply pipework laid in made ground soils or soils containing contaminant concentration exceeding those stated below (which they do) should be of barrier pipe construction.

- Screening level of 10 mg/kg TPH (total petroleum hydrocarbons, C11-C20) exceeded in TP2 and TP4.

This screening value is from table 3.1 of the UKWIR, Guidance for the selection of water supply pipes to be used in brownfield sites (report reference 10/WM/03/21 dated 2010).

7.2 Human Health Protection for Construction

Construction and ground workers should adopt appropriate personal hygiene precautions in relation to potential contamination (even if not identified by the investigation). Personal protective equipment should be worn as required (e.g. gloves and safety glasses) and welfare facilities provided.

These precautions are industry standard and further guidance is in the HSE document HSG150 Health and Safety in Construction (2006).

7.3 Remediation Strategy

Based on the findings of this report, contamination requiring further remediation has been identified. Consequently, a remediation strategy may need to be prepared for planning submission.

Alternatively, given the remedial solution is relatively non-complex and small scale the description of the work above could be sufficient but should be checked with the LPA first.

7.4 Soil Disposal

Waste soils that are to be disposed off-site should be classified in accordance with WM3 Guidance on the classification and assessment of waste (1st edition, version 1.2.GB 2021). The receiving landfill or soil treatment facility should be provided with a copy of the laboratory test results, including the results of any waste acceptance criteria (WAC) testing to confirm they can accept the waste.

8 Conclusions

The investigation encountered a surface layer of reworked topsoil (0.15-0.3m thick) or made ground (0.22->0.62m thick). The reworked topsoil and made ground were clay matrix soils with gravel and cobbles of brick (including whole bricks), clay tile, clay pipe, mortar, flint or chalk.

These were overlying Lowestoft Formation diamicton at depths below 0.46-0.6m. The diamicton was a firm, brown, silty CLAY with chalk gravel.

A groundwater seepage was in TP3 at a depth of 0.67m.

There is considered to be a Moderate Risk from the PAH compounds benzo[b]fluoranthene, benzo[a]pyrene and dibenz[a,h]anthracene in the reworked topsoil and made ground at TP2. A Moderate Risk implies remediation is required for development.

There is a risk of taste or odour impairment from hydrocarbon concentrations in TP2 and TP4, on water supply pipes constructed in made ground soils.

9 Recommendations

A Moderate Risk implies remediation is required for development.

Given that the reworked topsoil and made ground encountered in TP2 was thin and no increase in site level is proposed, it is considered more practical to remove the material down to natural soils at this location. The excavation could be infilled with soil from elsewhere on site or with imported, clean soil. The area of excavation should be a minimum of 1m surrounding the position of TP2 (i.e. minimum 2m wide x 0.46m deep excavation). Verification of the remediation excavation sidewalls, base and infill would be required.

There would normally be a requirement for the submission of a remediation strategy document. However, given the small scale of the proposed excavation, the LPA may accept the recommendations of this report in lieu of a remediation strategy but this should be checked with them first.

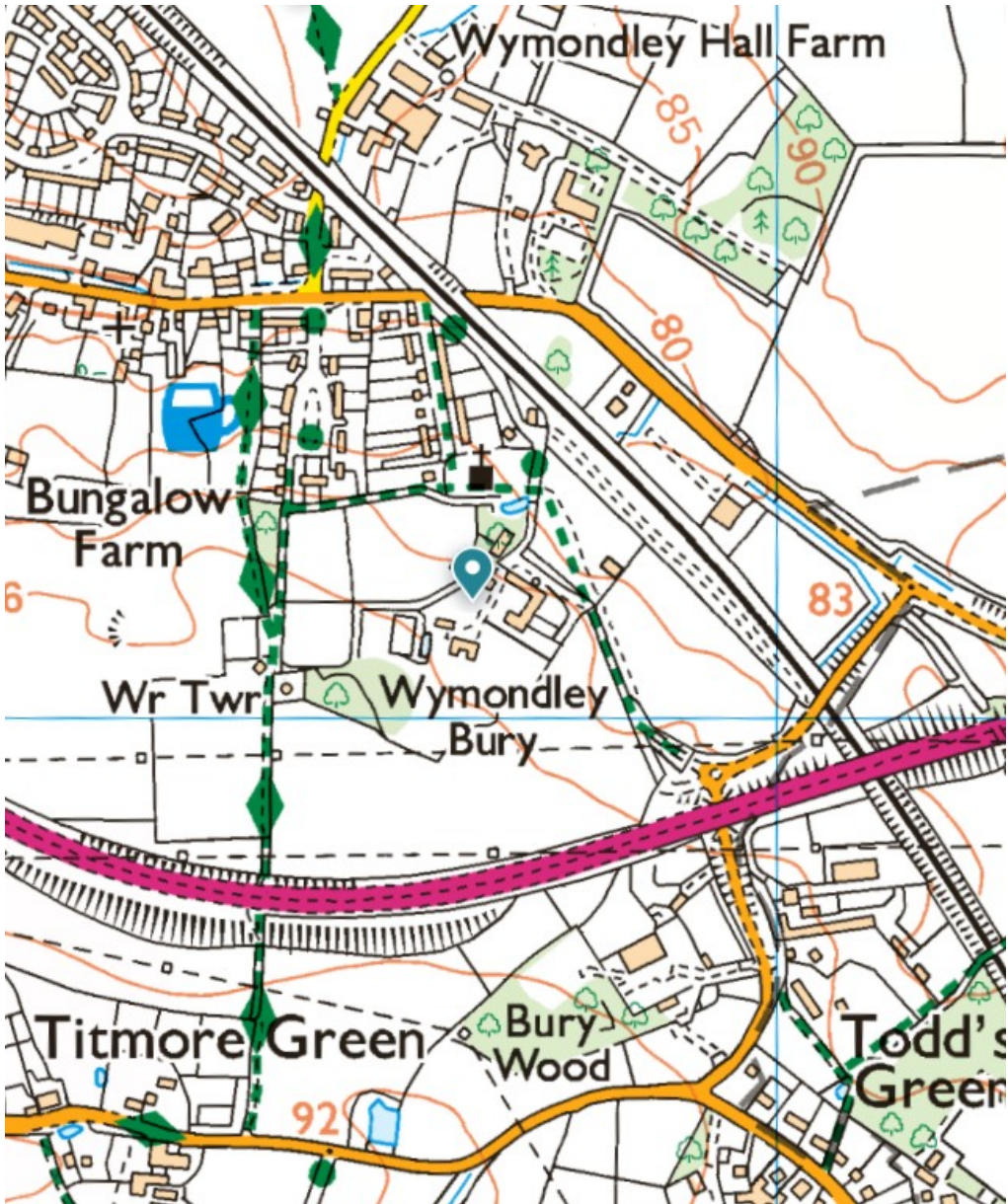
Water supply pipework laid in made ground soils should be of barrier pipe construction.

If, during construction works, previously unknown contamination is found or suspected on site then a scheme of investigation and appropriate course of action should be agreed with the LPA.

Figures

Figure 1 – Site Location Plan

Figure 2 – Exploratory Hole Location Plan





CLIENT
MS J BOXALL & MR A
GATES

PROJECT
WYMONDLEY BURY LODGE,
LITTLE WYMONDLEY

TITLE
EXPLORATORY HOLE
LOCATION PLAN

SCALE: NTS
PREPARED BY:
MH

JOB NR.: 26258
REVISION: -

DATE: 19.02.26
DRAWING NR.
FIGURE 2



Appendix A – Exploratory Hole Logs



Hand Pit

TP1
Sheet 1 of 1

Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
Project Name WYMONDLEY BURY LODGE	Project No. 26258	Start Date 2026-02-11	End Date	

Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.00-0.15	ES 1			(0.15)		Dark brown, silty clay with occasional fine to coarse gravel. Gravel was angular to subangular red brick and rare flint. [REWORKED TOPSOIL]	
						0.15		Light brown, very gravelly, silty clay. Gravel was fine to coarse, red brick, clay tile, mortar and chalk. Some cobbles of brick and mortar also present. [MADE GROUND]	
		0.35-0.45	ES 2			(0.35)			
						0.50		Firm, medium brown, silty CLAY with very fine to medium gravel. Gravel was subangular to subrounded chalk.	0.5
						(0.30)			
						0.80			
								End of Trial Pit at 0.80m	
									1.0
									1.5
									2.0

Remarks Located 6m northeast of slab.	Method, Plant, Stability, Dimensions 0.00 - 0.80m HP	Logger MH
--	---	--------------



Hand Pit

TP1
PHOTO PAGE

	Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
	Project Name WYMONDLEY BURY LODGE		Project No. 26258	Start Date 2026-02-11	End Date
Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd			Contractor	



Remarks	Method, Plant, Stability, Dimensions	Logger
Located 6m northeast of slab.	0.00 - 0.80m HP	MH



Hand Pit

TP2
Sheet 1 of 1

Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
Project Name WYMONDLEY BURY LODGE	Project No. 26258	Start Date 2026-02-11	End Date	

Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd	Contractor
------------------------------------	---------------------------------------	------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.00-0.20	ES 1			(0.24)		Dark greyish brown, slightly gravelly, silty clay. Rootlets. [REWORKED TOPSOIL]	
						0.24 (0.22)		Light brown, silty clay with medium to coarse gravel. Gravel was subangular to subrounded flint, red brick, clay tile and occasional chalk and rare charcoal. [MADE GROUND]	
						0.46 (0.14)		Firm, medium brown, silty CLAY with very fine to medium gravel. Gravel was subangular to subrounded chalk.	0.5
						0.60			
								End of Trial Pit at 0.60m	
									1.0
									1.5
									2.0

Remarks Located 6m northwest of slab.	Method, Plant, Stability, Dimensions 0.00 - 0.60m HP	Logger MH
--	---	--------------



Hand Pit

TP2
PHOTO PAGE

	Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
	Project Name WYMONDLEY BURY LODGE		Project No. 26258	Start Date 2026-02-11	End Date
Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd			Contractor	



Remarks	Method, Plant, Stability, Dimensions	Logger
Located 6m northwest of slab.	0.00 - 0.60m HP	MH



Hand Pit

TP3
Sheet 1 of 1

Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
Project Name WYMONDLEY BURY LODGE	Project No. 26258	Start Date 2026-02-11	End Date	

Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd	Contractor
------------------------------------	---------------------------------------	------------

Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.10-0.20	ES 1			(0.30)		Medium brown, silty clay with occasional fine to medium gravel. Gravel was subangular to subrounded chalk and flint. Roots up to 5cm dia. [REWORKED TOPSOIL]	
						0.30 (0.30)		Soft to firm, light brown, silty CLAY with occasional fine to medium gravel. Gravel was subangular chalk. [MADE GROUND]	0.5
		0.60	ES 2			0.60 (0.32)		Soft, light brown, slightly sandy, gravelly clay. Gravel was fine to coarse flint, chalk, mortar and rare red brick. Rare angular cobbles of mortar. [MADE GROUND]	
						0.92		End of Trial Pit at 0.92m	1.0
									1.5
									2.0

Remarks Located on bank 7m from southern boundary.	Method, Plant, Stability, Dimensions 0.00 - 0.92m HP	Logger MH
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Hand Pit

TP4
Sheet 1 of 1

Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
Project Name WYMONDLEY BURY LODGE	Project No. 26258	Start Date 2026-02-11	End Date	

Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd	Contractor
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Inst/ Backfill	Water Levels	Samples and Tests			Level (m)	Depth (m) (thickness)	Strata		
		Depth (m)	Type/ Ref	Results			Legend	Description	
		0.00-0.18	ES 1			(0.18)		Dark greyish brown, silty clay with fine to coarse gravel. Gravel was angular clay pipe, red brick, mortar and chalk. Some whole bricks. [MADE GROUND]	
						0.18		Soft, brown silty clay with occasional fine gravel. Gravel was subangular chalk. [MADE GROUND]	
						(0.42)		Layer of subangular to rounded flint cobbles. (0.50 - 0.60m)	0.5
						0.60 (0.10) 0.70		Firm, light brown, silty, slightly fine sandy CLAY with occasional fine to medium gravel. Gravel was subangular to subrounded flint.	
								End of Trial Pit at 0.70m	
									1.0
									1.5
									2.0

Remarks Located near base of bank 2m south of slab.	Method, Plant, Stability, Dimensions 0.00 - 0.70m HP	Logger MH
--	---	--------------

	Hole Type HP	Easting	Northing	Ground Level (m)	Scale 1:10
	Project Name WYMONDLEY BURY LODGE		Project No. 26258	Start Date 2026-02-11	End Date
Client MS J BOXALL & MR A GATES	Consultant Xplor Environmental Ltd			Contractor	



Remarks	Method, Plant, Stability, Dimensions	Logger
Located near base of bank 2m south of slab.	0.00 - 0.70m HP	MH

Appendix B – Chemical Laboratory Test Results

Xplor Environmental
34 Church Lane
Girton
Cambridge
CB3 0JP

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t:
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t: 01923 225404
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e: info-i2analytical@normecgroup.com

Analytical Report Number : 26-007471

Project / Site name:	Wymondley	Samples received on:	13/02/2026
Your job number:	26258	Samples instructed on/ Analysis started on:	13/02/2026
Your order number:	26258	Analysis completed by:	25/02/2026
Report Issue Number:	1	Report issued on:	25/02/2026
Samples Analysed:	5 soil samples		



Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 26-007471

Project / Site name: Wymondley

Your Order No: 26258

Lab Sample Number	830602				830603	830604	830605	830606
Sample Reference	TP1				TP2	TP3	TP3	TP4
Sample Number	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A				N/A	N/A	N/A	N/A
Depth (m)	0.35-0.45				0.00-0.20	0.10-0.20	0.60	0.00-0.18
Date Sampled	11/02/2026				11/02/2026	11/02/2026	11/02/2026	11/02/2026
Time Taken	0930				1010	1050	1130	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					

Stone Content	%	0.1	NONE	28.4	31.8	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	10	22	18	22
Total mass of sample received	kg	0.1	NONE	0.8	0.7	0.6	0.9	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	OGR	OGR	OGR	OGR	OGR
Analysis completed	N/A	N/A	N/A	23/02/2026	23/02/2026	23/02/2026	23/02/2026	23/02/2026

General Inorganics

Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.18	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.52	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.52	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.44	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.11	5.5	0.07	0.05	0.17
Anthracene	mg/kg	0.05	MCERTS	< 0.05	1.8	< 0.05	< 0.05	0.08
Fluoranthene	mg/kg	0.05	MCERTS	0.5	17	0.16	0.13	0.57
Pyrene	mg/kg	0.05	MCERTS	0.5	16	0.17	0.12	0.75
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.33	8.6	0.09	0.08	0.35
Chrysene	mg/kg	0.05	MCERTS	0.32	8.5	0.1	0.09	0.45
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.44	13	0.13	0.09	0.68
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.22	4.8	0.07	< 0.05	0.23
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.37	11	0.11	0.08	0.48
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.18	6	< 0.05	< 0.05	0.23
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	1.4	< 0.05	< 0.05	0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.23	6.2	< 0.05	< 0.05	0.2

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	3.2	101	0.9	< 0.80	4.24
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	13	22	23	21
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	0.5	0.4	< 0.2	0.9
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	29	55	28	35	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	53	34	20	41
Lead (aqua regia extractable)	mg/kg	1	MCERTS	29	81	43	38	180
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	19	29	26	30
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	200	110	72	320

Analytical Report Number: 26-007471

Project / Site name: Wymondley

Your Order No: 26258

Lab Sample Number	830602	830603	830604	830605	830606
Sample Reference	TP1	TP2	TP3	TP3	TP4
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.35-0.45	0.00-0.20	0.10-0.20	0.60	0.00-0.18
Date Sampled	11/02/2026	11/02/2026	11/02/2026	11/02/2026	11/02/2026
Time Taken	0930	1010	1050	1130	1200
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	120	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	120	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	2.5	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	41	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	360	< 10	< 10	15
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	400	< 10	< 10	15

VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 26-007471

Project / Site name: Wymondley

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
830602	TP1	None Supplied	0.35-0.45	Brown loam and clay with brick and stones
830603	TP2	None Supplied	0.00-0.20	Brown loam and clay with vegetation and stones
830604	TP3	None Supplied	0.10-0.20	Brown loam and clay with gravel and vegetation
830605	TP3	None Supplied	0.6	Brown clay and sand with gravel and vegetation
830606	TP4	None Supplied	0.00-0.18	Brown loam and clay with gravel and vegetation

Analytical Report Number : 26-007471

Project / Site name: Wymondley

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution



Appendix C – Soil Screening Levels

Soil Screening Levels

The following generic screening levels are used in the report for assessing risks to human health from contaminants in soil. All screening levels are for 1% SOM.

Contaminant	Units	Source	Residential with home produce	Residential without home produce	Commercial	Public open space (residential)	Public open space (park)
Cyanide (free)	mg/kg	RIVM	20	20	30	-	-
Cyanide (total)	mg/kg	RIVM	50	50	500	-	-
Boron	mg/kg	S4UL	290	11,000	240,000	21,000	46,000
Arsenic	mg/kg	S4UL	37	40	640	79	170
Cadmium	mg/kg	S4UL	11	85	190	120	532
Chromium (total)	mg/kg	S4UL	910	910	8,600	1,500	33,000
Copper	mg/kg	S4UL	2,400	7,100	68,000	12,000	44,000
Mercury (inorganic)	mg/kg	C4SL	200	300	5,100	610	1,300
Nickel	mg/kg	S4UL	180	180	980	230	3,400
Lead	mg/kg	C4SL	200	310	2,330	630	1,300
Selenium	mg/kg	S4UL	250	430	12,000	1,100	1,800
Zinc	mg/kg	S4UL	3,700	40,000	730,000	81,000	170,000
Chromium (hex.)	mg/kg	S4UL	6	6	33	7.7	220
TPH Aliphatic >C5-C6	mg/kg	S4UL	42	42	3,200	570,000	95,000
TPH Aliphatic >C6-C8	mg/kg	S4UL	100	100	7,800	600,000	150,000
TPH Aliphatic >C8-C10	mg/kg	S4UL	27	27	2,000	13,000	14,000
TPH Aliphatic >C10-C12	mg/kg	S4UL	130	130	9,700	13,000	21,000
TPH Aliphatic >C12-C16	mg/kg	S4UL	1,100	1,100	59,000	13,000	25,000
TPH Aliphatic >C16-C21	mg/kg	S4UL	65,000	65,000	1,600,000	250,000	450,000
TPH Aliphatic >C21-C35	mg/kg	S4UL	65,000	65,000	1,600,000	250,000	450,000
TPH Aromatic >C5-C7	mg/kg	S4UL	70	370	26,000	56,000	76,000
TPH Aromatic >C7-C8	mg/kg	S4UL	130	860	56,000	56,000	87,000
TPH Aromatic >C8-C10	mg/kg	S4UL	34	47	3,500	5,000	7,200
TPH Aromatic >C10-C12	mg/kg	S4UL	74	250	16,000	5,000	9,200
TPH Aromatic >C12-C16	mg/kg	S4UL	140	1,800	36,000	5,100	10,000
TPH Aromatic >C16-C21	mg/kg	S4UL	260	1,900	28,000	3,800	7,600
TPH Aromatic >C21-C35	mg/kg	S4UL	1,100	1,900	28,000	3,800	7,800
Naphthalene	mg/kg	C4SL	15	15	1,600	11,000	800
Acenaphthylene	mg/kg	S4UL	170	2,900	83,000	15,000	29,000
Acenaphthene	mg/kg	S4UL	210	3,000	84,000	15,000	29,000
Fluorene	mg/kg	S4UL	170	2,800	63,000	9,900	20,000
Phenanthrene	mg/kg	S4UL	95	1,300	22,000	3,100	6,200
Anthracene	mg/kg	S4UL	2,400	31,000	520,000	74,000	150,000
Fluoranthene	mg/kg	S4UL	280	1,500	23,000	3,100	6,300

Contaminant	Units	Source	Residential with home produce	Residential without home produce	Commercial	Public open space (residential)	Public open space (park)
Pyrene	mg/kg	S4UL	620	3,700	54,000	7,400	15,000
Benzo[a]anthracene	mg/kg	S4UL	7.2	11	170	29	49
Chrysene	mg/kg	S4UL	15	30	350	57	93
Benzo[b]fluoranthene	mg/kg	S4UL	2.6	3.9	44	7.1	13
Benzo[k]fluoranthene	mg/kg	S4UL	77	11	1,200	190	370
Benzo[a]pyrene	mg/kg	S4UL	2.2	3.2	35	5.7	11
Indeno[1,2,3-c,d]pyrene	mg/kg	S4UL	27	45	500	82	150
Dibenz[a,h]anthracene	mg/kg	S4UL	0.24	0.31	3.5	0.57	1.1
Benzo[g,h,i]perylene	mg/kg	S4UL	320	360	3,900	640	1,400
Phenols (total)	mg/kg	S4UL	120	440	440	440	440
MTBE	µg/kg	RSK	60	60	7500	-	-
Benzene	µg/kg	S4UL	87	380	27,000	72,000	90,000
Toluene	µg/kg	S4UL	130,000	880,000	56,000,000	56,000,000	87,000,000
Ethylbenzene	µg/kg	S4UL	47,000	83,000	5,700,000	24,000,000	17,000,000
m & p-xylene	µg/kg	S4UL	56,000	79,000	5,900,000	41,000,000	17,000,000
o-xylene	µg/kg	S4UL	60,000	88,000	660,000	41,000,000	17,000,000

Appendix D – Risk Definition

Risk Evaluation

Risk evaluation is qualitative and is developed from the model provided in CIRIA C552 *Contaminated Land Risk Assessment – a guide to good practice* (DETR 2001). It involves classifying risk in terms of the probability of occurrence x magnitude of the potential consequence of occurrence. The risk rating is used to determine what action, if any, is needed to further investigate that risk and/or remediate to reduce risk to an acceptable level.

Classification of Probability

Classification	Definition
High	There is a pollution linkage and an event appears very likely in the short term and almost inevitable in the long term or there is actual evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely in the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is not certain that even over a longer period such event would take place and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur in the very long term.

Classification of Consequence

Classification	Definition	Examples
Severe	- Short-term (acute) risk to human health likely to result in significant harm. - Short-term (acute) risk of pollution of sensitive water resource. - Short-term (acute) risk to an ecosystem, or organism forming part of an ecosystem.	Unusually high concentration of toxic substance on the surface of a garden. Major release into controlled waters. EA Category 1 pollution incident. Closure of an abstraction point. Explosion, causing building collapse (and death if occupied).
Medium	- Chronic damage to human health likely to result in significant harm. - Pollution of sensitive water resource. - Significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentration of contaminant from site exceeds generic or site-specific assessment criteria for human health or water supply pipes. Presence of asbestos. Leaching of contaminants from a site to a principal or secondary A aquifer. Concentration exceeds DWS in Inner Source Protection Zone (SPZ1) or EQS adjacent to water resource. EA Category 2+ pollution incident. Death of a species or loss of habitat within an area of national importance.
Mild	- Exposure is unlikely to result in significant harm to human health. - Pollution of non-sensitive water resource. - Damage to sensitive buildings, structures and services or the environment.	Concentration of contaminant from site below generic or site-specific assessment criteria. Pollution of secondary (B or undifferentiated) aquifer. EA Category 3 pollution incident. Damage to a building rendering it unsafe to occupy. Death of a species or loss of habitat within an area of local importance.

Classification	Definition	Examples
Minor	- Harm (but not significant harm) resulting in a financial loss or expenditure to resolve. - Non-permanent human health effects. - Easily repairable damage to buildings, structures and services	Pollution of unproductive strata. Loss of plants in garden or landscape areas.

Risk Estimation

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Low risk
	Low	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Low risk	Very low risk	Very low risk
	No linkage	No risk			

Description of the Estimated Risks and Likely Action Required

Risk	Action
Very high	There is a high probability that severe harm could arise or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. - Urgent investigation required. - Remediation required for the site in its existing state and for development.
High	Harm is likely to arise. Realisation of the risk is likely to present a significant liability. - Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term. - Remediation required for development.
Moderate	A potential linkage is identifiable. However, it is either relatively unlikely that harm would be severe or, if any harm were to occur, it is more likely that the harm would be relatively mild. - Investigation required to quantify the risk and determine potential liability. - Remediation required for development.
Low	It is possible that harm could arise but it is likely that this harm, if realised, would at worst normally be mild. - Investigation is not normally required but could be useful to confirm findings. - Remediation unlikely to be required or will be limited.
Very low	There is a low possibility that harm could arise. In the event of such harm being realised it is not likely to be severe. Site is not capable of being determined under Part 2a. No further action recommended.