Tier 2 Geoenvironmental Site Assessment

Skip Lane
Harvil Road
Harefield
Uxbridge
UB9 6JL

February 2024

552232.0000.0000

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Executive Summary

TRC Companies Limited (TRC) was commissioned by GBN Services Ltd (the 'Client') to undertake a Tier 2 (formerly known as Phase II) Geoenvironmental Site Assessment at Skip Lane, Harvil Road, Harefield, Uxbridge UB9 6JL (hereafter referred to as the 'Site').

This Executive Summary is part of the complete report; and findings, opinions or conclusions in this Executive Summary are made in context with the complete report. TRC recommends that the user reads the entire report for all supporting information related to findings opinions and conclusions.

Executive Summary	
Site Details	
Client	GBN Services Ltd
Site Address & Grid Reference	Skip Lane, Harvil Road, Harefield, Uxbridge UB9 6JL Easting 506010, Northing 187370
Site Area	1.71 ha
Proposed Development	The proposed development comprised changes to open storage areas associated with pre-existing non-hazardous waste treatment and transfer facility. This included the replacement of two trommels and waste picking stations, a new baler, boundary treatment and landscaping, specifically the replacement of the workshop building following demolition of existing workshop buildings. Development is now complete and there are no further planned construction works.
Site Setting	
Current Site Use	At the time of writing this assessment, TRC understands that the Site is currently operating as a non-hazardous waste recycling centre, with associated storage areas, car parking, workshops, offices, and segregated areas for waste.
Site History	The Site appeared to be undeveloped land from earliest available mapping (1864-1891). By 1934, an embankment from the railway along the Site's northern boundary encroached onto Site and Skip Lane was constructed across the north-eastern portion of the Site. By 1963, a travelling crane was located in the western portion of the Site, an engineering works facility was located in the central western portion of the Site, a separate works facility was located in the southern portion of the Site, and an unmarked building was constructed in the north-eastern portion of the Site. The works facility in the southern portion of the Site was demolished by 1999. By 2009, one building was constructed in the north-eastern portion of the Site. The engineering works facility was redeveloped by 2003 and demolished by 2023.
Expected Geology	Made Ground is expected to be present at the Site, associated with past developments. According to a previous investigation conducted by HESI in 2022, the base of the Made Ground was encountered between 0.5m below ground level (bgl) and >3.0m bgl. Bedrock geology – London Clay Formation, Lambeth Group, Seaford Chalk Formation/ Newhaven Chalk Formation Superficial deposits are not expected at the Site.
Expected Hydrogeology	Bedrock Geology – Unproductive Strata, overlying Secondary (A) Aquifers, overlying a Principal Aquifer The Site lies within an Environmental Agency (EA) designated groundwater source protection zone III; however, this is likely associated with the underlying chalk formation.

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	The permeable bedrock geology is confined by the London Clay Formation. The anticipated groundwater flow direction is west, towards the Broadwater Lake Nature Reserve. Groundwater is therefore not considered to be sensitive to contamination.
Expected Hydrology	The nearest surface water feature is located approximately 4m to the southwest and is an unnamed drainage ditch. There are several other drainage streams and ditches west of the Site. Several lakes and bays associated with the Broadwater Lake Nature Reserve are located approximately 400m west of the Site, and the River Colne is located approximately 515m southwest of the Site. The Site is underlain by low permeability deposits and it is considered unlikely that surface water is in hydraulic connection with groundwater beneath the Site. Therefore, surface water is not considered to be sensitive to contamination.
Investigation Findings	
Ground Conditions	During HESI's investigation, Made Ground was encountered between ground level to depths between 0.5m and >3.0m bgl. During HESI's investigation, bedrock geology comprising the London Clay Formation was encountered from 0.5m bgl and recorded a maximum proven depth of 3.0m bgl. During HESI's investigation, superficial deposits were not encountered.
Groundwater Conditions	During HESI's investigation, groundwater was encountered at a depth of 2.0m bgl within WS3. This water strike likely represents perched water within Made Ground.
Contaminated Land Assessment	
Human Health	There were no exceedances of the GAC in soils for continued commercial use. Asbestos in soil was encountered within five samples in Made Ground (WS2, WS3, WS5, WS12, and WS13) which poses a potential risk to human health if disturbed. Development at the Site is now complete, there are no further planned construction works and no new buried services were constructed as part of the scheme. Furthermore, the Site is covered by buildings and hardstanding, and it is understood that no new landscaping was installed as part of the scheme. There are no active contaminant linkages and the asbestos contamination detected is unlikely to present a significant risk to the existing site users.
Controlled Waters	Groundwater samples were not collected during HESI's investigation. However, the Site is underlain by low permeability deposits, and there is not considered to be a significant risk to controlled waters receptors.
Ground Gas and Organic Vapour	During HESI's investigation, ground gas monitoring was not undertaken; therefore, a ground gas risk assessment could not be undertaken. The potential for ground gases to enter and accumulate in the new building cannot be ruled out at this stage. However, the presence of the low permeability deposits will limit the potential for gas migration. Notwithstanding, Made Ground is a potential source of ground gas at the Site and has been recorded to exceed a thickness of 3.0m in one location (WS2). Furthermore, historical landfills are recorded close to the Site, which could also be a potential source of ground gas.

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	The construction details of the building have not been provided but it is understood that ground gas protection measures were not incorporated into the design. No risks have been identified from organic vapour as part of the assessment.
Remediation	Based on the results of this assessment remediation is not considered to be required. However, risks to the existing site users from ground gas cannot be ruled out at this stage.

Recommendations

Development of the property is now complete and there are no further planned construction works.

TRC recommends that ground gas monitoring is undertaken in the wells installed by HESI, assuming these are still serviceable. The ground gas monitoring should be undertaken in accordance with British Standard BS 8485:2015+A1:2019 to assess the impact of permanent ground gases upon the development. This will include a minimum of four rounds of gas monitoring at the Site.

It is recommended that once monitoring is complete, the monitoring wells are appropriately decommissioned.

Should any future works which may disturb asbestos be undertaken, those undertaking the work should be made aware of the presence of asbestos in soils and ensure that appropriate control measures are in place. Any works which disturb asbestos must be undertaken in accordance with the Control of Asbestos Regulations (2012).

1.0 Introduction

1.1 Appointment and Purpose

TRC Companies Limited (TRC) was commissioned by GBN Services Ltd (the 'Client') to undertake a Tier 2 (formerly known as phase II) Geoenvironmental Site Assessment at Skip Lane, Harvil Road, Harefield, Uxbridge UB9 6JL (hereafter referred to as the 'Site').

A site location plan is presented as Figure 1 in Annex A.

The purpose of this Tier 2 report is to assess environmental considerations, predominantly with respect to ground conditions at the Site, pursuant to the discharge of Condition 6 (Land Contamination) for planning permission with ref. 49984/APP/2014/3806 and dated 01-09-2015 with Hillingdon Council. Development works at the Site have been completed and this assessment has been applied retrospectively.

This Tier 2 report uses information and data from an intrusive investigation undertaken by Herts & Essex Site Investigation Ltd (HESI) to aid site characterisation.

1.2 Proposed Development

The development comprised changes to open storage areas associated with existing non-hazardous waste treatment and transfer facility. This included the replacement of two trommels and waste picking stations, a new baler, boundary treatment and landscaping, specifically the replacement of the workshop building following demolition of existing workshop buildings.

The end user sensitivity is considered Low for the ongoing commercial / industrial end use.

A Site Layout Plan is presented as Figure 2 in Annex A.

1.3 Available Information & Standards

This report is based on the following information:

- Historical uses of the Site and surroundings;
- Current use and condition of the Site;
- Environmental setting in terms of geology, hydrogeology, hydrology and surrounding land uses;
- Relevant publicly available environmental records;
- Previous reports for the Site as listed in Section 2.6; and,
- Intrusive investigation including geoenvironmental and geotechnical sampling and testing.

This report was conducted with due regard to the following guidance and standards:

- The National Planning Policy Framework;
- BS5930:2015 (+A1:2020) Code of Practice for Ground Investigations;
- BS EN 1997 Eurocode 7;
- BS8485:2015 (+A1:2019) Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings;
- BS8576:2013 Guidance on Investigations for Ground Gas – Permanent Gases and Volatile Organic Compounds (VOCs);
- BS10175:2011 (+A2:2017) Investigation of Potentially Contaminated Sites – Code of Practice; and,
- Land Contamination: Risk Management (LCRM) 2020 (amended 2023).

1.4 Significant Assumptions

This report presents TRC's observations, findings, and conclusions as they existed on the date that this report was issued. This report is subject to modification if TRC becomes aware of additional information after the date of issue of this report that is material to its findings and conclusions.

The reliability of information provided by others to TRC cannot be guaranteed to be accurate or complete. Performance of this Tier 2 Geoenvironmental and Geotechnical Site Assessment is intended to reduce, but not eliminate, uncertainty of geoenvironmental and geotechnical conditions associated with the subject site; therefore, the findings and conclusions made in this report should not be construed to warrant or guarantee the subject site, or express or imply, including without limitation, warranties as to its marketability for a particular use. TRC found no reason to question the validity of information received unless explicitly noted elsewhere in this report.

1.5 User Reliance

This report was prepared for GBN Services Ltd. Reliance on this report by any other third party is subject to requesting and fully executing a reliance letter between TRC and the third party that acknowledges the TRC Standard Terms and Conditions with the Client, to the same extent as if they were the Client thereunder.

TRC has been provided with information from third parties for information purposes only and without representation or warranty, express or implied as to its accuracy or completeness and without any liability on such third parties part to revise or update the information. Where reliance has been provided by third parties to potential purchasers this is noted in our report.

2.0 The Site

2.1 Location

The Site is located on the northern side of Skip Lane in Harefield, Uxbridge. It is centred on National Grid Reference 506191, 187299.

A Site location plan is presented as Figure 1 in Annex A.

2.2 Site Description

The 1.71 hectare site is roughly rectangular in shape and is located to the west of Harvil Road. At the time of writing this assessment, the Site is understood to be occupied by a newly developed structure comprising a workshop building with associated storage areas, car parking, workshops, offices, and segregated areas for waste. The Site appears to be accessed via Skip Lane.

The Site has an average elevation of approximately 46m to 56m above Ordnance Datum (aOD). Topographically, the Site slightly slopes gently downwards east to west. There is a strip of dense, mature trees north of the railway.

A Site visit has not been completed as part of this assessment which is based on investigation data provided by the client and undertaken by Herts & Essex Site Investigation (HESI).

2.3 Surrounding Area

Land uses in the immediate vicinity include the following principal features:

Table 2.1: Summary of Surrounding Land Use

Direction	Land Use
North	The Site is bound to the north by a railway, with an industrial property associated with HS2 beyond. The Site appears to be managing materials associated with the new railway construction.
East	The Site is bound to the east by Harvil Road, with an industrial property associated with HS2 beyond. The Site appears to be managing materials associated with the new railway construction.
South	The Site is bound to the south by a golf course and several commercial / industrial properties. Commercial / industrial properties include an excavation contractor, a fuel station, a fuel supplier, and a scaffolder.
West	The Site is bound to the west by undeveloped land, with Skip Lane and an industrial property beyond. The industrial property operates as a concrete supplier.

2.4 Site Environmental Setting

2.4.1 Geology

The Site is underlain by variable thickness of Made Ground, overlying the London Clay Formation, overlying the Lambeth Group, overlying the Seaford Chalk Formation/ Newhaven Chalk Formation at depth. No superficial deposits are present.

2.4.2 Hydrogeology

British Geological Survey (BGS) geological mapping and hydrogeological mapping presented by DEFRA (MAGIC website) indicate the following hydrogeological information for the Site:

Table 2.2: Summary of Hydrogeology

Geology	Geological Description	Aquifer Status	Aquifer Description
Bedrock Deposits: London Clay Formation	Clay, Silt, and Sand	Unproductive Strata	Geological strata with low permeability that have negligible significance for water supply or river base flow. They consist of deposits that naturally offer protection to any aquifers that may be present beneath.
Bedrock Deposits: Lambeth Group	Clay, Silt and Sand	Secondary (A) Aquifer	Permeable strata capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers, lakes or wetlands.
Bedrock Deposits: Seaford Chalk Formation/ Newhaven Chalk Formation	Chalk	Principal Aquifer	Geological strata that exhibit high intergranular and/or fracture permeability. They usually provide a high level of water storage and can support water supply and/or base flow to rivers, lake and wetlands on a strategic scale.

The Site lies within an Environment Agency (EA) designated groundwater Source Protection Zone (SPZ) III (total catchment); it is likely that this is referring to the underlying Chalk aquifer at depth.

2.4.3 Hydrology

The nearest surface water feature is located approximately 4m to the southwest and is an unnamed drainage ditch. There are several other drainage streams and ditches west of the Site. Several lakes and bays associated with the Broadwater Lake Nature Reserve are located approximately 400m west of the Site, and the River Colne is located approximately 515m southwest of the Site.

2.5 Summary of Site History

A review of historical maps undertaken as part of the desk study report that the Site appeared to be undeveloped agricultural land from earliest available mapping (1868-1891). By 1934, an embankment from the railway along the Site's northern boundary encroached onto Site and Skip Lane was constructed across the north-eastern portion of the Site. By 1963, a travelling crane was located in the western portion of the Site, an engineering works facility was located in the central western portion of the Site, a works facility was located in the southern portion of the Site, a travelling crane was located in the western portion of the Site, and an unmarked building was constructed in the north-eastern portion of the Site. The works facility in the southern portion of the Site was demolished by 1999. By 2009, one building was constructed in the north-eastern portion of the Site. The engineering works facility was redeveloped by 2003 and demolished by 2023.

2.6 Previous Investigations, Reports or Remediation

The following site specific assessments have been provided by the Client for review and are referred to in the below table.

The Client has reliance on the reports reviewed and the information from these reports have been used in the assessment.

Table 2.3: Summary of Previous Site Assessments

Report Details	Summary of Geoenvironmental and Geotechnical Findings
Environmental Report, December 2022, Herts & Essex Site Investigation	The report can be summarised as follows: • The Site is recorded as a waste recycling centre which has areas for storage, parking, workshops, maintenance, office, and the recycling element in the centre of the Site. • Earliest available mapping indicates the Site as open fields (1868), with Harvill road running approximately 50m to the east. The main bulk of development onsite appears in the 1970s with a number of buildings in the western and central portion of the Site marked as Engineering Works. The Site appears in its current layout from 2006, when the majority of the buildings have been replaced by six smaller buildings onsite. • Made Ground is expected across the Site. • The London Clay Formation, which is classified as Unproductive Strata is expected at the Site. • The nearest surface water feature is recorded 14m east of the Site and is a ditch. A number of other water courses are located in the area as well. • Two groundwater abstraction points are located between 251 and 500m of the Site and are recorded for mineral washing. The nearest potable abstraction is located greater than 1km from the Site. • The majority of the Site lies within a SPZ 1 (inner protection zone); however, this likely relates to the Chalk aquifer at depth. • A number of potential sources of contamination have been identified onsite: Made Ground, railway land north of the Site, current and historical operations at the Site, and discharges from the Site. • A ground investigation was undertaken for the Site, which comprised 14 No. Dynamic Competitor Rig boreholes to depths between 0.50m and 3.0m below ground level. • Standpipes were installed in three locations. • Groundwater was identified at 2.0m bgl within WS3. • Asbestos was identified in four locations with no other evidence of contamination identified at the Site. • The risks to groundwater are generally considered low. The following has been recommended for the Site: • Gas monitoring on six occasions; and, • Additional sampling to address the data gaps when full access to the Site can be made.
Geotechnical Report, December 2022, Herts & Essex Site Investigation	The report can be summarised as follows: • This report comprises a geotechnical design report based on the findings of the investigation described above. • The investigation observed the base of the Made Ground from 0.5m bgl to >3.0m bgl, overlying the London Clay Formation. • Hand penetrometer testing has been undertaken and recorded cohesion values between 66-150+ kN/m^2. • Atterberg Limit tests proved the clay to be of intermediate to very high plasticity, indicating a high susceptibility to movement associated with moisture content change. • Significant desiccation is identified within the London Clay Formation.

Report Details	Summary of Geoenvironmental and Geotechnical Findings
	• The classification of the London Clay Formation in accordance with ACEC is DS-2 / AC-1S. • Any new foundations should be seated at a minimum depth of 1.0m bgl to overcome the impact of weathering and in excess of the influence of any surrounding trees or vegetation. • Due to the significant desiccation and depth of Made Ground, a system of piles and ground beams are recommended as the foundation solution for the Site. • It is also recommended that the upper 4.0m should be sleeved to avoid heave potential and enable a stable design. • A suspended floor should be included in any design where foundation depths exceed 1.5m due to the influence of trees or where Made Ground or compressible soils is in place to depths in excess of 0.6m bgl.
Desk Based Geoenvironmental Site Assessment, V2.0 February 2024, TRC Companies Limited, report ref. 552232.0000.0000	The report can be summarised as follows: • The Site appeared to be undeveloped land from earliest available mapping (1868-1891). By 1934, an embankment from the railway along the Site's northern boundary encroached onto Site and Skip Lane was constructed across the north-eastern portion of the Site. By 1963, a travelling crane was located in the western portion of the Site, an engineering works facility was located in the central western portion of the Site, a separate works facility was located in the southern portion of the Site, and an unmarked building was constructed in the north-eastern portion of the Site. The works facility in the southern portion of the Site was demolished by 1999. By 2009, one building was constructed in the north-eastern portion of the Site. The engineering works facility was redeveloped by 2003 and demolished by 2023. • The Site is underlain by Made Ground directly over London Clay Formation (Unproductive Strata), Lambeth Group (Secondary A Aquifer) and Seaford Chalk Formation/ Newhaven Chalk Formation (Principal Aquifer). • The Site lies within an EA designated groundwater SPZ III; this is likely associated with the underlying Chalk formation. • The permeable bedrock geology is confined by the overlying London Clay Formation. • The anticipated groundwater flow direction is west, towards the Broadwater Lake Nature Reserve. • Groundwater is therefore not considered to be sensitive to contamination. • The nearest surface water feature is located approximately 4m to the southwest and is an unnamed drainage ditch. There are several other drainage streams and ditches west of the Site. Several lakes and bays associated with the Broadwater Lake Nature Reserve are located approximately 400m west of the Site, and the River Colne is located approximately 515m southwest of the Site. • As the Site is underlain by low permeability London Clay, it is considered unlikely that surface water is in hydraulic connection with groundwater beneath the Site. • Therefore, surface water is considered to not be sensitive to contamination. • Potential sources of contamination have been identified. This includes the Made Ground and previous operations at the Site, as well as the surrounding oil depot, railway, tanks, and electricity substation. • Potentially complete contaminant linkages have been identified and are considered to pose a low risk to the identified receptors.

Report Details	Summary of Geoenvironmental and Geotechnical Findings
	TRC recommended that a Geoenvironmental Site Assessment Report should be prepared to determine the environmental characterisation of the Site based on the findings of the HESI reports detailed above.

3.0 Ground Investigation

3.1 Scheduled Scope of Works

The scope of works for the intrusive investigation was designed by HESI. The investigation scope of works comprised:

- 14 dynamic competitor rig boreholes (WS1 – WS14) to a maximum depth of 3.0m below ground level (bgl);
- In-situ logging, ground sampling and testing; and,
- Construction of three gas and groundwater monitoring wells.

No ground gas or groundwater monitoring was undertaken as part of the HESI investigation and assessment.

3.2 Investigation Rationale

The ground investigation was designed by HESI on behalf of their client to gather information on the geoenvironmental and geotechnical ground, and groundwater conditions at the Site.

TRC understands that HESI aimed to gain good general coverage of the Site, and targeted sampling to assess risk from waste recycling works, Made Ground, railway land, fuel storage areas, vehicle parking, and offsite features.

Table 3.1: Summary of Exploratory Hole Locations

Exploratory Hole	Location
WS1	WS1 is located in the south-eastern portion of the Site.
WS2	WS2 is located in the south-eastern portion of the Site, west of WS1.
WS3	WS3 is located in the south-eastern portion of the Site, west of WS2.
WS4	WS4 is located in the eastern portion of the Site, north of WS3.
WS5	WS5 is located in the north-eastern portion of the Site, north of WS1.
WS6	WS6 is located in the north-eastern portion of the Site, west of WS5.
WS7	WS7 is located in the northern portion of the Site.
WS8	WS8 is located in the southern portion of the Site.
WS9	WS9 is located in the southern portion of the Site, west of WS9.
WS10	WS10 is located in the north-western portion of the Site, east of WS12.
WS11	WS11 is located in the south-western portion of the Site, south of WS10.
WS12	WS12 is located in the north-western portion of the Site, west of WS10.
WS13	WS13 is located in the south-western portion of the Site, south of WS14.
WS14	WS14 is located in the north-western portion of the Site, north of WS13.

3.3 Investigation Methodology

3.3.1 Ground Investigation

The HESI ground investigation was conducted at the Site on 11th October and, 10th and 11th November 2022.

HESI commissioned a drilling subcontractor to undertake the dynamic boreholes at the Site. Each exploratory hole was advanced using a dynamic competitor rig. The drilling works were overseen by a HESI engineer who performed field assessment and logging of the exploratory holes.

The works included the following key actions:

- Review of available underground services plans for the Site;
- Dynamic borehole drilling was performed at each location by the drilling contractor;
- On-site ground logging, testing, and assessment of potential indicators of contamination;
- Collection of soil samples for environmental and geotechnical laboratory analysis;
- Construction of gas and groundwater monitoring wells in three borehole locations, WS1, WS9, WS10; and,
- WS2 – WS8, WS11 – WS14 were backfilled with arisings.

The exploratory hole location plan for the ground investigation undertaken, is presented within Annex B.

The exploratory hole logs are presented within Annex B.

3.3.2 Groundwater and Ground Gas Monitoring

The ground conditions encountered with respect to the response zone of the monitoring installations are summarised in the table below.

Table 3.2: Monitoring Wells Summary

Exploratory Hole	Response Zone (m bgl)	Response Zone Strata (m bgl)	
WS1	0.30 - 3.00	0.30 – 1.80	Made Ground
		1.80 – 3.00	London Clay Formation
WS9	0.30 - 3.00	0.30 – 0.60	Made Ground
		0.60 – 3.00	London Clay Formation
WS10	0.30 - 3.00	0.30 – 0.80	Made Ground
		0.80 – 3.00	London Clay Formation

Groundwater and ground gas monitoring was not conducted as part of HESI's scope of works.

3.4 Environmental Laboratory Analysis

A total of 19 soil samples were collected for environmental analysis during the investigation works. Ten soil samples were packed in laboratory provided containers and delivered to I2 Analytical (I2) for chemical analysis. Nine soil samples were packed in laboratory provided containers and delivered to Eurofins Chemtest for chemical analysis.

All soil samples were collected in order to provide environmental data on the quality of near surface and shallow Made Ground soils beneath the Site. The analytical suite of soils included the following parameters:

- Asbestos;
- Heavy metals suite;
- Polycyclic aromatic hydrocarbons (PAH);
- Total petroleum hydrocarbons – Criteria Working Group (TPH-CWG);
- Volatile Organic Compounds (VOCs);
- Semi-Volatile Organic Compounds (SVOCs);
- General inorganics;
- Polychlorinated Biphenyls (PCBs); and,
- Waste Assessment Criteria (WAC Testing).

Leachate samples were not undertaken as part of HESI's investigation.

Groundwater samples were not collected as part of HESI's investigation.

The full set of chemical results are presented in Annex B.

4.0 Ground Conditions

4.1 Ground Profile

The investigation observed that the soils underlying the Site generally comprised the following:

Table 4.1: Ground Profile

Stratum	From	To	Thickness (m)
	m bgl	m bgl	
Made Ground	0.00	>3.0	>3.0
London Clay Formation	0.50	>3.0	>2.5

The base of the Made Ground was encountered between 0.5m bgl and >3.0m bgl. The Made Ground observed greater than 3.0m was encountered within WS2. The extent of Made Ground was not determined in this borehole.

The thickness of the London Clay Formation was not proven.

The ground conditions encountered correspond with the publicly available records of ground conditions published by the British Geological Survey (BGS). Published BGS borehole records within or near the Site area found similar results.

4.2 Made Ground

The Made Ground was encountered in all of the exploratory holes from ground level to depths between 0.5m and >3.0m bgl. Generally, thicker layers of Made Ground was encountered in the eastern portion of the Site and thinner layers of Made Ground was encountered in the western portion of the Site.

According to the HESI investigation, the Made Ground was heterogeneous in nature but generally comprised sand with bricks, crushed concrete, and dark grey clinker. Concrete hardstanding surfaces up to 0.47m thick were recorded at the top of Made Ground at WS5 – WS14. Refusal at 2.1m bgl due to a concrete obstruction was encountered within the Made Ground in WS4. Refusal at 1.4m bgl due to an unknown obstruction was encountered within the Made Ground in WS7. Refusal at 0.5m bgl due to an unknown obstruction was encountered within the Made Ground in WS13.

4.3 London Clay Formation

The London Clay Formation was encountered in all of the exploratory holes from 0.5m bgl to >3.0m bgl underlying the Made Ground. The only exception to this is WS2, where the Made Ground thickness exceeds 3.0m bgl.

The London Clay Formation was generally described as light brown mottled grey slightly silty clay. Refusal within the London Clay Formation was not encountered.

4.4 Groundwater

Water strikes observed during the site works and the results of the monitoring visits are summarised in the table below.

Table 4.2: Groundwater Observations

Exploratory Hole	Water Strikes	
	Struck	Rose to
	m bgl	m bgl
WS3	2.0	2.0

During the ground investigation, groundwater was typically not encountered; however, one water strike was encountered at 2.0m bgl within WS3. This water strike likely represents perched water within the Made Ground.

According to HESI's ground investigation, groundwater can be anticipated sporadically within Made Ground. Furthermore, the local presence of limited groundwater within parts of London Clay Formation which include sand and silt fractions or locally where claystones are present, cannot be ruled out.

Groundwater may be subject to seasonal variations especially after periods of prolonged rain or drought.

4.5 Visual and Olfactory Evidence of Contamination

No visual or olfactory evidence of contamination was encountered during HESI's ground investigation.

5.0 Human Health Risk Assessment

5.1 Soil Assessment

In order to appraise the significance of the concentrations reported by laboratory testing, TRC has assessed each contaminant species that is elevated above the laboratory method detection limits (MDL) against published screening criteria referred to as Generic Assessment Criteria (GAC). GACs are derived from the following reference material:

- Land Quality Management Limited and Chartered Institute of Environmental Health (November 2014), the LQM/CIEH S4ULs for Human Health Risk Assessment. Document reference: S4UL3435;
- Development of Category 4 Screening Levels for assessment of land affected by contamination – SP1010 (September 2014);
- LQM S4Uls: evaluation of 2017USEPA Toxicological Review of Benzo(a)pyrene; and,
- LQM/CIEH S4Uls for Nickel according to land use (Revised August 2015).

TRC has selected GAC commercial, based on the completed development comprising a commercial end use.

A conservative value of 1% of soil organic matter (SOM) has been assumed based on the soil type.

A summary of the laboratory data is presented within Annex B and TRC's screening tables with relevant GACs are presented in Annex C.

5.2 Heavy Metals

Minor concentrations of heavy metals were detected in soil samples (Made Ground). None of the concentrations exceeded the GACs.

5.3 Hydrocarbons

Minor concentrations of hydrocarbons were detected in soil samples (Made Ground). None of the concentrations exceed the GACs.

5.4 VOCs

No concentrations of VOCs were detected above the laboratory method detection limit (MDL).

5.5 SVOCs

Minor concentrations of SVOCs were detected in soil samples (Made Ground). None of the concentrations exceed the GACs.

5.6 PCBs

Minor concentrations of PCBs were detected in soil samples (Made Ground). None of the concentrations exceed the GACs.

5.7 Pesticides

No concentrations of pesticides were detected above the laboratory MDL.

5.8 Asbestos

Asbestos fibres in soil were encountered within five samples analysed in the Made Ground (WS2, WS3, WS5, WS12, and WS13). The samples containing asbestos were found to contain chrysotile in soil. Asbestos quantification was undertaken on these samples and identified a maximum concentration of 0.229% fibres in soil (WS2).

5.9 Discussion

Heavy metals, hydrocarbons, SVOCs and, PCBs were identified above laboratory MDL within Made Ground soils; however, none exceeded the GAC for a commercial end use.

Asbestos in soil was encountered within five samples in Made Ground (WS2, WS3, WS5, WS12, and WS13) which poses a potential risk to human health if disturbed. Development at the Site is now complete, there are no further planned construction works and no new buried services were constructed as part of the scheme. Furthermore, the Site is covered by buildings and hardstanding, and it is understood that no new landscaping was installed as part of the scheme.

There are no active contaminant linkages and the asbestos contamination detected is unlikely to present a significant risk to the existing site users. Notwithstanding, should any future works which may disturb asbestos be undertaken, those undertaking the work should be made aware of the presence of asbestos in soils and ensure that appropriate control measures are in place. Any works which disturb asbestos must be undertaken in accordance with the Control of Asbestos Regulations (2012).

6.0 Controlled Waters Risk Assessment

No free phase oils or hydrocarbons odours were identified during HESI's ground investigation.

Groundwater sampling was not undertaken as part of HESI's scope of works. In the absence of any groundwater sampling data, a qualitative assessment of risk has been made, based on an analysis of the conceptual site model.

6.1 Groundwater Assessment

The Site lies within a Zone III groundwater source protection zone (SPZ); however, this is likely associated with the underlying chalk formation, which is confined by the London Clay Formation. Therefore, it is not considered to be sensitive to contamination.

There are no active potable groundwater abstractions within 1km of the Site.

The Site is underlain directly by the London Clay Formation which is designated as Unproductive Strata and is therefore not considered to be sensitive to contamination.

6.2 Surface Water Assessment

The nearest surface water feature is located approximately 4m to the southwest and is an unnamed drainage ditch. There are several other drainage streams and ditches west of the Site. Several lakes and bays associated with the Broadwater Lake Nature Reserve are located approximately 400m west of the Site, and the River Colne is located approximately 515m southwest of the Site.

The Site is underlain by low permeability strata and groundwater is considered unlikely to be in hydraulic connection with surface waters.

6.3 Discussion

Groundwater samples were not collected during HESI's investigation. However, no significant soil sources of contamination were identified. The Site is underlain by low permeability deposits and is predominantly covered by buildings and hardstanding. The recent development works are not anticipated to have altered the pre-existing situation to allow any additional leaching or migration to occur. Therefore, no plausible contaminant linkages have been identified there is not considered to be a significant risk to controlled waters receptors.

7.0 Ground Gas and Organic Vapour Risk Assessment

7.1 Ground Gas Assessment

Ground gas monitoring was not undertaken during the HESI investigation, and therefore a ground gas risk assessment could not be undertaken.

7.2 Organic Vapour from Soil Assessment

For hydrocarbons and other VOCs the LQM S4ULs are considered to be protective of human health from indoor inhalation of organic vapour. Based on the results presented in section 5, there were no exceedances of volatile contaminants and there is not considered to be risk from organic vapour.

7.3 Discussion

Gas monitoring was not undertaken as part of HESI's investigation, and therefore, a ground gas risk assessment has not been undertaken.

No risks have been identified from organic vapour as part of the assessment.

The potential for ground gases to enter and accumulate in the new building cannot be ruled out at this stage. However, the presence of the low permeability deposits will limit the potential for gas migration. Notwithstanding, Made Ground is a potential source of ground gas at the Site and has been recorded to exceed a thickness of 3.0m in one location (WS2). Furthermore, historical landfills are recorded close to the Site, which could also be a potential source of ground gas.

The construction details of the building have not been provided but it is understood that ground gas protection measures were not incorporated into the design.

TRC recommends that monitoring is undertaken in the wells installed by HESI, assuming these are still serviceable. The gas monitoring should be undertaken in accordance with British Standard BS 8485:2015+A1:2019 to assess the impact of permanent ground gases upon the development. This should include a minimum of four rounds of gas monitoring at the Site.

The monitoring wells should be appropriately decommissioned on completion on monitoring.

8.0 Contaminated Land Risk Assessment

The methodology of this risk assessment uses the source-pathway-receptor pollutant linkage to provide a qualitative appraisal of environmental risks and potential liabilities associated with soil and groundwater contamination at the Site. The conceptual site model (CSM) has been prepared considering the continued commercial use.

8.1 Sources of Contamination

The ground investigation performed at the Site by HESI identified the following sources of contamination:

- Asbestos fibres in soil in Made Ground

TRC have also identified the potential for ground gas at the Site based on the Made Ground identified and nearby historical landfills. Ground gas monitoring would need to be undertaken to confirm the ground gas regime of the Site.

8.2 Pathways

Based on the information presented in this report the following potentially active pathways have been identified:

- Inhalation of soil dust or respirable fibres of asbestos
- Migration of ground gas and ingress into buildings

8.3 Receptors

Based on the information presented in this report the following receptors have been identified:

- Existing site users
- Neighbouring site users
- Construction and maintenance workers

8.4 Revised Conceptual Site Model

The following CSM has been prepared to take into consideration the findings from the intrusive investigation.

Table 8.1: Revised Conceptual Site Model

Source	Pathway	Receptor	Risk
Asbestos in soil	Dermal contact, ingestion and inhalation pathways	Existing site users	**Low** The majority of the Site is covered by buildings and hardstanding. While Site users could come into contact with potentially contaminated soils in areas of soft landscaping it is understood that no new landscaping was installed as part of the scheme.
		Neighbouring site users	**Low** The nearest residents are over 1 km from Site so are unlikely to be affected. Neighbouring site

Source	Pathway	Receptor	Risk
			users including golf course users and other industrial site workers are unlikely to be exposed to contaminants as there are no further planned construction works and the majority of the Site is covered by buildings and hardstanding.
		Construction and maintenance workers	**Low** There are no further planned construction works and no new below ground services were constructed as part of the scheme. Notwithstanding, should any future works which may disturb asbestos be undertaken, those undertaking the work should be made aware of the presence of asbestos in soils and ensure that appropriate control measures are in place. Any works which disturb asbestos must be undertaken in accordance with the Control of Asbestos Regulations (2012).
Potential for ground gases (methane and/or carbon dioxide)	Migration of ground gases within made ground and ingress into buildings/confined spaces	Existing site users	**Low to Moderate** Construction of the new workshop is complete and construction details have not been provided. There is potential for ground gas to enter the building and accumulate. Gas monitoring has not been conducted as part of HESI's investigation; however, it is noted that thicknesses of Made Ground exceed 3.0m bgl, and there are some historical landfills nearby.
		Construction and maintenance workers	**Low** There are no further planned construction works and no new buried services were constructed as part of the scheme.

9.0 Summary and Conclusions

9.1 Findings

At the time of writing this assessment, TRC understands that redevelopment works at the Site have been completed and that there are no further planned construction works. It is understood that the Site continues to operate as a non-hazardous waste recycling centre, with associated storage areas, car parking, workshops, offices, and segregated areas for waste.

The Site appeared to be undeveloped land from earliest available mapping (1868-1891). By 1934, an embankment from the railway along the Site's northern boundary encroached onto Site and Skip Lane was constructed across the north-eastern portion of the Site. By 1963, a travelling crane was located in the western portion of the Site, an engineering works facility was located in the central western portion of the Site, a separate works facility was located in the southern portion of the Site, and an unmarked building was constructed in the north-eastern portion of the Site. The works facility in the southern portion of the Site was demolished by 1999. By 2009, one building was constructed in the north-eastern portion of the Site. The engineering works facility was redeveloped by 2003 and demolished by 2023.

An intrusive investigation conducted by HESI was reviewed and identified a layer of Made Ground from ground level to depths between 0.5m bgl and >3.0m bgl. Underlying the Made Ground, the London Clay Formation was encountered to a maximum proven depth of 3.0m bgl.

During HESI's investigation, groundwater was encountered in one location at 2.0m bgl within WS3. This is likely representative of perched water within Made Ground.

9.2 Summary of Contaminated Land Risk Assessment

9.2.1 Soil

There were no exceedances of the GAC in soils for continued commercial use.

Asbestos in soil was encountered within five samples in Made Ground (WS2, WS3, WS5, WS12, and WS13) which poses a potential risk to human health if disturbed. Development at the Site is now complete, there are no further planned construction works and no new buried services were constructed as part of the scheme. Furthermore, the Site is covered by buildings and hardstanding, and it is understood that no new landscaping was installed as part of the scheme.

There are no active contaminant linkages and the asbestos contamination detected is unlikely to present a significant risk to the existing site users.

9.2.2 Groundwater

Groundwater samples were not collected during HESI's investigation. However, no significant soil sources of contamination were identified. The Site is underlain by low permeability deposits and is predominantly covered by buildings and hardstanding. The recent development works are not anticipated to have altered the pre-existing situation to allow any additional leaching or migration to occur. Therefore, no plausible contaminant linkages have been identified there is not considered to be a significant risk to controlled waters receptors.

9.2.3 Ground Gas and Organic Vapour

Gas monitoring was not undertaken as part of HESI's investigation, and therefore, a ground gas risk assessment has not been undertaken.

No risks have been identified from organic vapour as part of the assessment.

The potential for ground gases to enter and accumulate in the new building cannot be ruled out at this stage. However, the presence of the low permeability deposits will limit the potential for gas migration. Notwithstanding, Made Ground is a potential source of ground gas at the Site and has been recorded to exceed a thickness of 3.0m in one location (WS2). Furthermore, historical landfills are recorded close to the Site, which could also be a potential source of ground gas.

The construction details of the building have not been provided but it is understood that ground gas protection measures were not incorporated into the design.

9.2.4 Remediation and Mitigation Measures

Based on the results of the generic risk assessments undertaken, remediation is not considered to be required. However, risks to the existing site users from ground gas cannot be ruled out at this stage.

9.3 Recommendations for Further Work

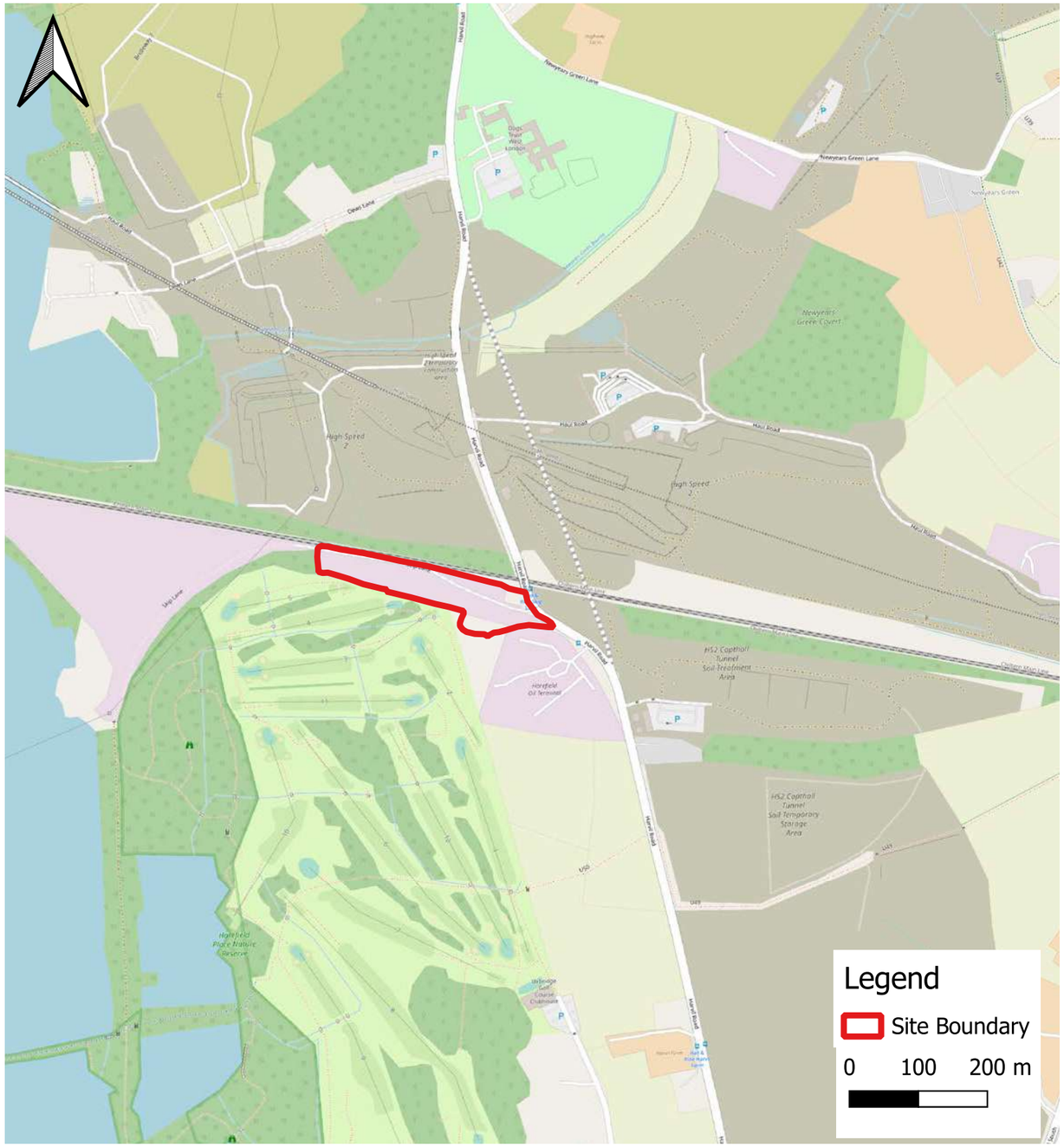
Development of the property is now complete and there are no further planned construction works.

TRC recommends that ground gas monitoring is undertaken in the wells installed by HESI, assuming these are still serviceable. The ground gas monitoring should be undertaken in accordance with British Standard BS 8485:2015+A1:2019 to assess the impact of permanent ground gases upon the development. This will include a minimum of four rounds of gas monitoring at the Site.

The monitoring wells should be appropriately decommissioned on completion on monitoring.

Should any future works which may disturb asbestos be undertaken, those undertaking the work should be made aware of the presence of asbestos in soils and ensure that appropriate control measures are in place. Any works which disturb asbestos must be undertaken in accordance with the Control of Asbestos Regulations (2012).

Annex A: Figures



NOTES	COPYRIGHT NOTES Google imagery June 2018 © OpenStreetMap contributors- data is available under the Open Database License. Cartography licensed as CC BY-SA.	REVISIONS				TITLE SITE LOCATION PLAN
					Work.Life 20 Red Lion Street London WC1R 4PS	TRC PROJECT NO. 552232.0000.0000 / SCALE 1:7700 @ A3 1:1800 @ A3
		P01	FIRST ISSUE		GBN SERVICES LTD	PURPOSE OF ISSUE SUITABLE FOR INFORMATION / STATUS
			Initials: JK / JK / 03/07/23			
		REV.	REVISION NOTES/COMMENTS		PROJECT SKIP LANE, HAREFIELD	DRAWING NO FIGURE 01 / REVISION PO1
			Initials			

Annex B: Herts & Essex Site Investigation's Environmental Report

HESI
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Geotechnical Assessments | Environmental Assessments | Desktop Studies | Contamination Analysis

ENVIRONMENTAL REPORT

Site Address:	Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL
Report Date:	December 2022
Project No.:	17766
Prepared for:	GBN Services Ltd
Planning Application	Hillingdon Council - 49984/APP/2014/3806

CONTENTS

APPENDIXES

TABLES AND FIGURES

LIST OF ABBREVIATIONS

BGS	British Geological Society
CIRIA	Construction Industry Research and Information Association
EA	Environment Agency
GL	Ground Level
GW	Groundwater
HESI	Herts & Essex Site Investigations
LAPPC	Local Authority Pollution Prevention and Control
NOS	Not Otherwise Specified (waste material)
NHBC	National House-Building Council
OS	Ordnance Survey
PAH	Poly Aromatic Hydrocarbons
SPZ	Source Protection Zone
TPH	Total Petroleum Hydrocarbons
UFST	Underground Fuel Storage Tanks

GENERAL NOTES

This report has been prepared based on the findings of investigations into the site conditions using current available data which has been recovered from Envirocheck to provide environmental data in relation to the site and surrounding area. Where possible, local sources have been researched to gain a better understanding of the site conditions. As part of this review, research has been undertaken with the Local Authority and the Environment Agency as to the site condition.

We can confirm that this report has been prepared based on the information gained and that this information is not exhaustive, and that subsequent research may reveal additional facts that may influence the reporting. Where possible, this information has been researched.

All geological information has been researched using the British Geological Society website, (the geology viewer). The disclaimer associated with this portal confirms 'The British Geological Society accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from Non-BGS sources and may not represent current interpretation.

The 'Copyright' within this report including plans and all other prepared documents prepared by Herts & Essex Site Investigations, (HESI), is owned by HESI and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of this report may, however, be made and distributed by the client as an expedient in dealing with matters relating to this commission.

The accuracy of map extracts cannot be guaranteed, and it should be recognized that different conditions on site may have existed between subsequent to the various map surveys.

We can confirm that within the assessment of the site, various websites have been visited and as such, we cannot confirm the validity of these sites and as such, this information is accepted de facto and without prejudice. Anyone relying on these sources does so at their own risk, however, Herts & Essex Site Investigations does undertake all reasonable care to ensure this data is relevant and correct.

It should be confirmed that the extent of review of this report has undertaken a broad review of on site features which would promote a contamination ground risk, however, this does not include ecological features and in particular Japanese Knotweed which should be reviewed under separate cover.

A review of the site will be made to confirm the extent of obvious Asbestos product or sheet materials either on the surface of the site soils or evident above ground, however, does not constitute a full Asbestos Survey by any means. This should be sought under separate cover.

DOCUMENT INFORMATION AND CONTROL SHEET

Client

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Qualifications

C.S.Gray

- ONC - Civil Engineering.
- HNC – Civil Engineering.
- P.G. Certificate – Geotechnical Engineering, (Inc. Environmental Engineering)
- P.G. Diploma – Geotechnical Engineering, (Inc. Environmental Engineering)
- Master of Science, (Geotechnical Engineering), (Inc. Environmental Engineering)
- SNIFFER modelling course.
- CONSIM Groundwater Assessment Course.
- (30 Years in Geotechnical and Environmental Engineering)
- Asbestos Awareness Course.
- Non-Licensed Work with Asbestos Including NNLW.
- Site Supervisors Safety Training Scheme, (SSSTS).
- First Aid Course in Construction – 3 Day Course – 3 years.
- CSCS Labourer Card.

Document Status and Approval Schedule

Issue No	*Status*	*Date*	*Prepared by: Rebecca Chamberlain Signature / Date*	*Technical review by: Chris Gray Signature / Date*
1	Final	December 2022		

SUMMARY

Client	GNB Services
Site Location	Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL
Existing Development	The site is recorded as a waste recycling centre which has storage areas, parking areas, workshops for maintenance, offices and also the main waste recycling element of the centre which includes segregated areas for specific waste
Proposed Development	The proposed works for the site include Changes to open storage areas associated with existing non-hazardous waste treatment and transfer facility including 2 x replacement trommels and waste picking stations, new baler, boundary treatment and landscaping involving replacement of workshop building following demolition of existing workshop building
Site Settings and Previous Uses	The earliest map record records 1868 and shows the site as open fields/ 50 metres to the east of the site, Harvill Road runs north to south. In 1914 the Great Western Railway has been constructed along the northern boundary of the site, although, it is believed this was opened in 1906. In 1934, a number of changes are recorded within the immediate area of the site to include Harvil Road on the northern site boundary. South Harvil Station is noted as disused immediately to the north of the site. A building is shown off site adjacent to the south east corner of the site. The 1948 map reference records further development to the south east of the site which is later marked on maps as Oil Depot. Within the western part of the site, a possible concrete hardstanding area is marked. The main bulk of development appears in the 1970 map record and shows a number of buildings in the western and central parts of the site with the main buildings marked as Engineering Works. By 1975 and east of the Canal, a larger area of water filled gravel workings are recorded in place. In 1989, further gravel extraction works are recorded to the south west. In the 2006 map reference, the majority of the buildings shown on earlier map records have been replaced by six smaller buildings which are consistent with those in place to date
Geological and Hydrological Profile	**Geology** / **Aquifer Classification** Made Ground — Shallow Made Ground Anticipated — Not Classified London Clay — Clay — Unproductive Stratum
Nearest Surface Water Feature	The nearest surface water feature is recorded as 14 metres to the east of the site recorded as a ditch. A number of other water courses are present within the area including Tiles Ditch which runs westward from close to the southern site boundary. Around 300 metres to the north of the site is New Years Green Bourne which flows westward and entered the former flooded gravel pits
Groundwater Abstractions	There are no groundwater abstraction points within 250 metres of the site. Two abstraction wells are recorded between 251 metres and 500 metres from the site and are recorded for mineral washing. The nearest potable groundwater abstraction well is recorded as 1184 metres to the east of the site
Source Protection Zone	The majority of the site lies within a Source Zone 1 Protection area and as such, will likely relate to the underlying Chalk Aquifer at depth
Potential Sources of Contamination	***On Site*** • Crane Works, (1948 onwards). • Made Ground. • Railway Land • Waste Transfer Depot • Fuel Storage. • Vehicle Parking • Discharges from site ***Off Site*** • Railway Land • Landfill. • Electric Sub Stations. • Scaffold & Work Platforms • Oil Company's • Oil Fuel Distributors • Oil Recycling & Disposal Services. • Ready Mix Concrete Yard.
Previous Investigations	No reports relating to contaminated land are known to us at the time of writing this report relating to the site.

Human Health Risk	The site has identified Made Ground and potentially contaminated ground. These risks form the following layers and associated contamination: -
	• Elevated levels of Asbestos in the form of Chrysotile at locations :-
	  ○ WS2 at a depth of 0.30-0.35 metres.
	  ○ WS3 at a depth of 0.80-0.85 metres.
	  ○ WS5 at a depth of 1.00-1.05 metres.
	  ○ WS12 at a depth of 2.00-2.05 metres.
	• No other evidence of contamination has been identified at the site.
	Based on the above, ***remedial measures will likely be required areas where pathways to receptors are in place***.

Workforce	The above human health risk is in place within the site area, will promote a low risk on a short-term bases to any workforce within the areas. ***Appropriate PPE / RPE should be worn and the soil contamination risk should be noted within any site inductions. This is particularly relevant to the Asbestos risks.***
Groundwater Risks	Due to the presence of a significant clay across the site, ***risks to groundwater are generally considered low***.
Vapour Risks	Chemical testing of the soils show that low risks are in place. Vapour risk is not in place.
Gas Risks	Potential for land gas risk from on and off-site landfills are in place. Gas testing needs to be completed, in line with best practice, we would suggest that a minimum of six monitoring rounds should be completed which should be undertaken over falling atmospheric pressures or frozen ground conditions to optimise worst case results for the assessment of the gas regime at the site. This should be undertaken when monitoring wells are dry.
Construction Materials	Water main pipework has been considered and no risk has been identified directly to any water main pipework developed at the site. Water main pipework can be laid in a conventional pipework system. Any water main pipework should be laid in clean corridors in order to prevent future risk to workforce used in the maintenance and repair of any water main system.
Further Works	It is recommended that additional works will be required for the site in order to complete assessments which are detailed as follows: - • Additional sampling to be completed across the site when full access to the site can be made. • Complete six monitoring rounds for Landfill Gas Monitoring over low or rapidly falling atmospheric pressures. Submit reports to Local Authority and Environment Agency for review and confirm the risks identified in this report along with the further works proposed are suitable and acceptable. The exact details of remediation required for the site should be assessed and reported in a Remediation Strategy Report in order to comply with current best practice, (BS 10175 & CLR 11).

ENVIRONMENTAL ASSESSMENT - PHASE 2

1 Context and Objectives of this report

1.1 Introduction

We have been asked by GNB Services to undertake an investigation of the above site in order to assess the potential environmental impact of the historical use of the site on the proposed development. The development of this report has been completed utilising information and assessments completed by Murrey Rix Ltd in November 2015.

2 Report Objectives

The objectives of this report are to assess and define the extent of contamination within the site as a result of the investigation works undertaken to date.

The assessment of the site in this report have been prepared in accordance with key guidance documents as follows: -

- National Planning Policy Framework.
- British Standards 10175:2011+A2:2017
- Land contamination risk management (LCRM)
- Contaminated Land Report, (CLR11) 11, 'Model Procedures for the Management of Contaminated Land', (2004).
- DEFRA: Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, (April 2012)
- Environment Agency, (EA), GP3 'Groundwater Protection: Policy and Practice'.

2.1 Limitations

The opinions expressed within this document and the comments and recommendations given, are based on the information gained, to date within a desktop study previously undertaken on the site. The interpretation of the data has been made by Herts & Essex Site Investigations.

Within any site investigation, materials sampled represent only a small proportion of the materials present on site. It is therefore possible that other conditions prevailing at the site which have not been revealed within the scope of this report, have not been considered. Where suspect materials are encountered during any further or future works within the site, additional specialist advice should be sought to assess whether any new information will materially affect the recommendations given within any physical ground investigation.

2.2 Planning Condition

A review of the online planning application with Hillingdon Council which has recorded the following :-

Application Number : 49984/APP/2014/3806

Proposed Use : Changes to open storage areas associated with existing non-hazardous waste treatment and transfer facility including 2 x replacement trommels and waste picking stations, new baler, boundary treatment and landscaping involving replacement of workshop building following demolition of existing workshop building.

Decision Notice : Granted

3 Site Location and National Grid Reference

The site is located within a rural and commercial area of Hillingdon, the details of which are summarised in Table 1 with the location plan of the site shown in Appendix 2, Sheet 1.

Table 1 Site Detail

Site Address:	Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL
Site assessed under	Site Owners Request - Aid as part of planning and warranties
Current use of land:	Waste Recycling Site
Previous use of site, (if known)	As above
Grid Reference	NGR 506010, 187380
Site Area	1.56 Hectares
Local Authority	Hillingdon Council
Gradient of the site	The site has a general gradient from the north west of the site. Variations are in place across the site where retaining walls divide the site.
Proximity of Controlled Waters, (if known)	The nearest surface water feature is recorded as 14 meters to the south east of the site which is recorded as a drainage ditch

4 Review of Previous Reports or Documents Relating to the Site

4.1 Site Details

- The site is recorded as a waste recycling centre which has storage areas, parking areas, workshops for maintenance, offices and also the main waste recycling element of the centre which includes segregated areas for specific waste.
- The proposed works for the site include Changes to open storage areas associated with existing non-hazardous waste treatment and transfer facility including 2 x replacement trommels and waste picking stations, new baler, boundary treatment and landscaping involving replacement of workshop building following demolition of existing workshop building.
- The earliest map record records 1868 and shows the site as open fields/ 50 metres to the east of the site, Harvill Road runs north to south. In 1914 the Great Western Railway has been constructed along the northern boundary of the site, although, it is believed this was opened in 1906. In 1934, a number of changes are recorded within the immediate area of the site to include Harvil Road on the northern site boundary. South Harvil Station is noted as disused immediately to the north of the site. A building is shown off site adjacent to the south east corner of the site. The 1948 map reference records further development to the south east of the site which is later marked on maps as Oil Depot. Within the western part of the site, a possible concrete hardstanding area is marked.

- The main bulk of development appears in the 1970 map record and shows a number of buildings in the western and central parts of the site with the main buildings marked as Engineering Works. By 1975 and east of the Canal, a larger area of water filled gravel workings are recorded in place. In 1989, further gravel extraction works are recorded to the south west. In the 2006 map reference, the majority of the buildings shown on earlier map records have been replaced by six smaller buildings which are consistent with those in place to date.
- The published geology at the site recorded London Clay in place which in turn overlies Lambeth Group and subsequently the Seaford Chalk formation.
- The underlying geology has been identified as an Unproductive Stratum. Beyond this, the Lambeth Group is identified as a Secondary A Aquifer with the underlying Chalk recorded as a Principle Aquifer.
- The majority of the site lies within a Source Zone 1 Protection area and as such, will likely relate to the underlying Chalk Aquifer at depth.
- The nearest surface water feature is recorded as 14 metres to the east of the site recorded as a ditch. A number of other water courses are present within the area including Tiles Ditch which runs westward from close to the southern site boundary. Around 300 metres to the north of the site is New Years Green Bourne which flows westward and entered the former flooded gravel pits.
- There are no groundwater abstraction points within 250 metres of the site. Two abstraction wells are recorded between 251 metres and 500 metres from the site and are recorded for mineral washing. The nearest potable groundwater abstraction well is recorded as 1184 metres to the east of the site.
- The western end of the site is recorded as within an area which is susceptible to flooding.
- There are four historic landfills within 2 km of the site the nearest listed as 9 metres to the west of the site and recorded as Thames Materials Ltd and Hanson Concrete from 1967 – 1973.

4.2 Risks derived from DTS

As a result of the works undertaken, the following have been confirmed as the following:

Source Risk

On Site

- Crane Works, (1948 onwards).
- Made Ground.
- Railway Land
- Waste Transfer Depot
- Fuel Storage.
- Vehicle Parking
- Discharges from site

Off Site

- Railway Land
- Landfill.
- Electric Sub Stations.
- Scaffold & Work Platforms
- Oil Company's
- Oil Fuel Distributors
- Oil Recycling & Disposal Services.
- Ready Mix Concrete Yard.

Table 2 *Conceptual Site Model – Murrey Rix Report*

Sources Potentially Present	Receptors	Pathways	Qualitative Assessment of Risk
Permitted surface water discharge from site into Tiles Ditch– passed through interceptor in Yard D prior to discharge	End Users – On site	No pathway	No risk
	End users – off site	Direct contact with water unlikely	Negligible risk if operated correctly
Proposals to install reed bed filtration system	Controlled waters	Direct flow into water courses via Tiles Ditch and migration to groundwater	Moderate to High Risk if discharge non-compliant
	Buildings and Services	No pathway	No risk
	Construction Workers	No pathway	No risk
Made ground and terracing of site to	End Users - On Site	No pathway for direct and indirect	Very Low risk to Low risk

Table 3 *Conceptual Site Model – Murrey Rix Report*

form level yard areas – mostly concrete covered. Possible historical embankment construction in extreme west of site associated with railway.		contact with soils. Potential for ingress of ground gases/vapours into buildings.	
	End Users – Off Site	Migration	Low risk
	Controlled Waters	Migration into ground to groundwater and surface waters	Low to Moderate risk
	Buildings and Services	Ingress into water supply pipes	Negligible with selection of appropriate water supply pipes.
	Construction Workers	Contact with soils/dust	Negligible with appropriate PPE.
Historical use of the site including various works, crane works and engineering works (1948 onwards)	End Users – On Site	No pathway for direct and indirect contact with soils. Potential for ingress of ground gases/vapours into buildings	Very Low risk
	End Users – Off Site	Migration	Very low risk
	Controlled Waters	Migration	Moderate risk
	Buildings/services	Ingress into water supply pipes	Negligible with selection of appropriate water supply pipes.
	Construction workers	Contact with soils and dust	Negligible with appropriate PPE
Current on site activities including metal recycling, fuel storage, workshops and vehicle maintenance, vehicle parking, road run-off,	End Users – On Site	No pathway for direct and indirect contact with soils due to intact surface cover over much of site. Potential for	Very Low risk

Table 4 *Conceptual Site Model – Murrey Rix Report*

drums/barrels, etc		ingress of ground gases/vapours into buildings from spillages and leaks.	
	End Users – Off Site	Migration	Very low risk
	Controlled Waters	Migration in areas where intact concrete not present at surface	Low to Moderate risk
	Buildings/services	Ingress into water supply pipes	Negligible with selection of appropriate water supply pipes.
	Construction workers	Contact with soils and dust	Negligible with appropriate PPE
Railway line along northern boundary – in cutting along eastern section – any contamination likely to be at depth below site	End Users – On Site	No pathway for direct and indirect contact with soils. Potential for ingress of ground gases/vapours into buildings	Very Low risk
	Controlled Waters	Migration	Very low risk
	Buildings/services	Ingress into water supply pipes - unlikely	Negligible with selection of appropriate water supply pipes.
	Construction workers	Contact with soils and dust unlikely	Negligible with appropriate PPE
Oil Depot – including significant pollution incident (1993) and electricity sub-station. Located off-site to south-east adjacent to Yard A	End Users – On Site	No pathway for direct and indirect contact with soils due to intact surface cover over much of site Potential for ingress of ground gases/vapours into buildings	Very Low risk

Table 5 *Conceptual Site Model – Murrey Rix Report*

	Controlled Waters	Migration	Moderate risk
	Buildings/services	Ingress into water supply pipes	Negligible with selection of appropriate water supply pipes.
	Construction workers	Contact with soils and dust	Negligible with appropriate PPE
Ready Mix Concrete Plant and Concrete Crushing Plant – off site to west. Down gradient from site – likely only to influence extreme western end of site	End Users – On Site	No pathway for direct and indirect contact with soils due to intact surface cover over much of site. Potential for ingress of ground gases/vapours into buildings	Very Low risk
	Controlled Waters	Migration	Very low to low risk
	Buildings/services	Ingress into water supply pipes	Negligible with selection of appropriate water supply pipes.
	Construction workers	Contact with soils and dust	Negligible with appropriate PPE
Ground gases and leachates associated with former landfill site down gradient immediately to west.	End Users – On Site	Ingress of ground gases into buildings	Moderate risk
	Controlled Waters	Migration of leachates	Low to Moderate risk
	Buildings	Ingress into buildings and potential explosive risk	Low risk
	Construction workers	Inhalation in confined spaces	Low risk with the adoption of safe working practices

Pathways

Potential pathways in place within the site area recorded as: -

- Dermal Contact.
- Inhalation of dust and fibres.
- Ingestion of dust and fibres
- Ingestion of contaminated water through water main pipework.
- Inhalation of vapours from soils.
- Inhalation of vapours from Groundwater.
- Inhalation Asbestos dust and fibres (from Asbestos within the building).
- Inhalation Asbestos dust and fibres (from asbestos within the soil).

Receptors

Potential receptors in place within the site area recorded as: -

- Human Health, (Site Development Personnel).
- Human Health, (Residents or staff).
- Adjoining Land Owners, (unlikely)
- Groundwater
- Surface water features

5 Details of Preparatory Work

Preparatory works had originally been agreed with the client to gain access and undertake excavations within the site. This incorporates free access across the site area, the proposed investigation was not inhibited in any way and had free access across the site.

6 Details of Investigation Objectives.

Within the scope of this report, the objectives will form the following: -

- To anticipate regulatory action and provide sufficient data to overcome and answer any outstanding queries they may raise.
- Provide the relevant authorities sufficient information to satisfy any regulatory requirements set for the site.
- To ensure that the development, on completion, will be fit for the proposed use with all risk assessed and removed.
- It is proposed within this investigation to assess the suitability of the site for a new development which will incorporate commercial land use.
- In order to assess this suitability for development, it is proposed to use a source-pathway-receptor analogy, which, if broken, presents a reduced risk to the development.
- It is proposed to assess, where possible, sources of contamination within the site as a result of historical or ongoing use and whether these uses have pathways to receptors within the proposed development.

7 Summery of Work Undertaken

The scope of the works involved excavation of boreholes to gain a better and more visual understanding of the site conditions. This was undertaken at locations around the site and broadly confirmed the findings of the visual inspection of the site.

Samples were taken in containers dependent upon the proposed sampling regime required and placed in cool boxes where they were transported directly to the analytical chemist for assessment. These works included the following: -

7.1 Investigation Works Completed

The focus of the investigation was to confirm risks from the site which are detailed as follows: -

- Assessment of possible Asbestos in soils across the site area.
- Targeted sampling to access risk from waste recycling works, Made Ground, Railway Land, Fuel Storage Areas, Vehicle Parking and off site features.
- Spatial sampling around the remainder of the site to provide a general assessment.

Initial Investigation – October & November 2022

- 14 No Dynamic Competitor Rig boreholes were sunk to depths of between 0.50-3.00 meters deep. – 11th October 2022, 10th November 2022 and 11th November 2022.
- Standpipes have been installed WS1, WS9 & WS10 to depths of 3.00 metres.
- Geotechnical Laboratory Testing – October 2022 & November 2022.

7.2 Historic Investigation

Prior to our involvement in the development of the site, no historic investigations are known to us.

8 Location Plans for Exploratory Excavations

The plans which detail the location of the site, existing site use, proposed site use and identification of features on the site that may promote a risk are shown in Appendix Two. The plans also confirm the location of the excavations made on the site.

The areas of risk will be dictated by the risk classification given in this report and confirm where risk is in place relevant to the proposed end land use classification.

9 Description of Site Works and on/off Site Observations

In order to provide an easy understanding of the proposed development, we can confirm that the site will assess as a single section of land with the same proposed residential land use with potential for home grown produce.

The site has been reviewed and we can confirm that the geology within the site is as follows: -

Table 6 Geological Profile

Stratum	Description	Depth, Range	Thickness, Range
Made Ground	Hardcore brick FILL with crushed concrete and sandy brick infill.	1.80-3.00m+	1.80-3.00m+
	Black Clinker FILL	1.20-2.00m	1.00m
	Brick & Concrete Hardcore FILL	2.70m	1.50m
LONDON CLAY	Firm brown grey mottled CLAY	3.00m+	0.30-1.20m
	Firm to stiff light brown mottled grey slightly silty CLAY	3.00m+	2.50m+
Ground Water:	Perched water was identified at a depth of 2.00 metres within WS3. No long term monitoring has been completed to date.		

10 Contamination Assessment

10.1 Contamination

In order to assess the site, the site will be considered based on the historic land use of the site which will depict the extent of testing undertaken to consider risk within the area and additionally, the site will consider the proposed land use for assessment of whether target values have been exceeded for that particular land use.

10.2 Human Health Risk

As part of a generic assessment of the subsoil conditions, a comparison has initially been made using Generic Quantitative Assessment Criteria, (GQRA), values for contaminants derived the Environment Agency in Soil Guideline Values released in LCRM, (Land Contamination Risk Management), for Human Health Risk Assessment. For the proposed land use of this site, we can confirm that Generic Quantitative Assessment Criteria have been identified for the site. This is the order in which the Health Criteria Values will be used.

We are aware that the CIEH have published a 'Position Statement' which confirms that they do not wish to be associated with Category 4 screening values under the planning regime and as such would revert back to their own values, although, we are also aware that Local Authorities recommend the use of these value, although this is dependent upon the council EHO. As detailed above, the order of progression will be EA - SGV's, LQM / CIEH Data and then C4SL data.

It is possible that where excedance of these values are recorded, a more Detailed, Qualitative Risk Assessment, (DQRA), could be completed using site specific scenarios and toxicological properties of the subsoil and site

conditions to derive Site Specific Assessment Criteria, (SSAC), for the site. The assessment of testing has been completed as follows and reports the initial risks considered in place compared to GQRA

For ease of assessment, we can confirm that the site will be considered based on single zone of development as detailed below: -

Zone 1 ***The Site*** ***Commercial Land Use Standards***

By comparison of the data recovered from the sample analysis against the human health risk assessments, it can be seen that excedance of the relevant generic guidance values have been identified which are detailed as follows.

Table 7 Sampling and Testing Schedule

Site Details				Sample ID					Justification	Testing Suite									RESULTS	
Existing Site Use	Proposed Site Use	Chemical Testing Date	stratum sampled	Depth Of Stratum (m b.g.l)	Sample Location	Sample Depth (m)				HESI Suite 1	PAH's, (Speciated)	TPH's, (TPHCWG)	Asbestos	VOC's	PCB's	Semi VOC's	Pesticides	WAC	Type Of Asbestos Identified	Asbestos Quantification %
COMMERCIAL SITE	COMMERCIAL SITE	12/10/2022	MADE GROUND – FILL MATERIAL	1.80	WS1	0.60	-	0.65	PARKING AREAS				✓						NONE	
				1.80	WS1	1.20	-	1.25		✓	✓	✓	✓						NONE	
				3.00	WS2	0.30	-	0.35					✓						*Chrysotile*	*0.229*
				3.00	WS2	1.50	-	1.55					✓						NONE	
				3.00	WS2	3.00	-	3.00					✓						NONE	
				2.10	WS3	0.80	-	0.85	PARKING AREAS, STORAGE AREAS, WORKSHOPS	✓	✓	✓	✓						*Chrysotile*	*<0.001*
				2.10	WS3	1.80	-	1.85				✓	✓					✓	NONE	
				2.10	WS4	0.50	-	0.55		✓	✓	✓	✓	✓	✓	✓			NONE	
				2.10	WS4	1.50	-	1.55					✓						NONE	
		11-Nov-2022		1.20	WS5	1.00	-	1.05	BARREL STORAGE AREA				✓						*Chrysotile*	*0.002*
				0.80	WS6	0.60	-	0.65	WORKSHOP				✓						NONE	
				1.40	WS7	1.20	-	1.25	FUEL STORAGE, RAILWAY LAND	✓	✓	✓	✓						NONE	
				0.60	WS8	0.50	-	0.55	WASTE RECYCLING AREA				✓						NONE	
				0.60	WS9	0.50	-	0.55					✓						NONE	
				0.80	WS10	0.70	-	0.75		✓	✓	✓	✓						NONE	
				0.50	WS11	0.40	-	0.45					✓	✓	✓	✓			NONE	
				2.20	WS12	2.00	-	2.05					✓				✓		*Chrysotile*	*0.001*
				2.00	WS14	1.20	-	1.25		✓	✓	✓	✓						NONE	

* Indicates the value which forms the lowest trigger level.
Where PAH's are additionally tested within the VOC List. the highest values have been taken.
For the purposes of assessment where not stated otherwise Soil Organic Matter values of 2.5% has been used.
All measurements are given in mg/kg

1%
2.5%
5%

Absence/ Presents

10.3 Sources of Risk within Soils

Based on the information gained, we can confirm that one area of the site has recorded contamination in place above a human health risk level which can be confirmed as follows: -

- No elevated metals, semi metals, organic, inorganic, PAH's, Fuels, VOC's or Semi VOC's and PCB's have been recorded within the site throughout any of the samples tested above a commercial land use standard.
    - Many of the samples tested did not exceed a residential land use standard and as such, the site does not pose a significant risk based on the information gained.
- Elevated levels of Asbestos in the form of Chrysotile at locations :-
    - WS2 at a depth of 0.30-0.35 metres.
    - WS3 at a depth of 0.80-0.85 metres.
    - WS5 at a depth of 1.00-1.05 metres.
    - WS12 at a depth of 2.00-2.05 metres.
- No other evidence of contamination has been identified at the site.

10.4 Human Health Source Conclusions

Risk based on assessments of the site confirm that risk is in place as follows: -

Table 8 Soil Contamination Risks

Risk Factor	Risks in place	Remediation
Targeted Risks	***Asbestos - CHRYSOTILE*** WS2 at a depth of 0.30-0.35m. WS3 at a depth of 0.80-0.85m. WS5 at a depth of 1.00-1.05m. WS12 at a depth of 2.00-2.05m	Remediation action required. Assume as Widespread OR Additional sampling to comply with BS10175:2011, 5m grid and to confirm risk.
Spatial Risks	***NONE***	NONE

10.5 Ground and Surface Water Source

The nearest surface water feature is recorded as 14 metres to the east of the site recorded as a ditch. A number of other water courses are present within the area including Tiles Ditch which runs westward from close to the southern site boundary. Around 300 metres to the north of the site is New Years Green Bourne which flows westward and entered the former flooded gravel pits.

The underlying geology has been identified as an Unproductive Stratum. Beyond this, the Lambeth Group is identified as a Secondary A Aquifer with the underlying Chalk recorded as a Principle Aquifer.

The majority of the site lies within a Source Zone 1 Protection area and as such, will likely relate to the underlying Chalk Aquifer at depth. Should foundations or groundwork excavations penetrate the London Clay, a piling risk assessment is likely required.

There are no groundwater abstraction points within 250 metres of the site. Two abstraction wells are recorded between 251 metres and 500 metres from the site and are recorded for mineral washing. The nearest potable groundwater abstraction well is recorded as 1184 metres to the east of the site.

Considering the above, we can confirm that the likely current and historical impact of pollution on a groundwater system underlying the site will be minimal due to the presents of London clay and the absence of a groundwater system or controlled surface water features, and the EA consider the water environment at this site is of low environmental sensitivity.

10.6 Land Gas Assessments

Considering the potential for Land Gas risks due to the potential made ground and infilled gravel pit within the site area, Land Gas risk assessments must be completed. These will include the potential for contamination migration from on and off-site sources which may be present in concentrations where risk is recorded.

Land gas monitoring should be specifically targeting the following land uses

Table 9 Land Gas Risk Assessment - Response Zone

Feature	Targeted Response Zone	Location to Target	Vapour or Gas risk
Made ground and Infilled ground Landfill Site	Made Ground	Site Wide	Land Gases - CO_2, CH_4.

A visual appraisal has been made for any decomposable materials and fuels or organic compounds which may promote a risk, whilst sub-sampling soils at the site for chemical analysis. Based on this review, no visual risks were identified in place. Ground gas assessments are ongoing, although, all excavations during the current climate are fully saturated and results are low. This is likely due to the heavy rainfall and snow at present and London Clay underlying the site restricting permeation through to the lower soils.

We have considered a number of factors in the assessment and decision making in relation to ground gases which are detailed below which has broadly been derived from RB17, (An Pragmatic Approach to Ground Gas Risk Assessment – November 2012): -

- Conceptual Site Model.
- Soil Type, (made ground, clay, gravel, organic, peat, chalk) in relation to permeability.
- CO_2 and CH_4 concentration.
- O_2 concentration in conjunction with CO_2 and CH_4, (i.e. any other vapours present – hydrocarbons etc which reduce O_2 levels and see no CO_2 gases or methane, therefore what's utlizing the O_2).
- Source of ground gas.
- Distance from site.
- Atmospheric Pressure.
- Total Organic Carbon, (where available).
- Groundwater presence / absence.
- Response Zones.
- Variable Stratum.
- Proposed construction.

It is likely that assessments for ground gas will be required based on the above and would suggest that this may only form a viable option during dryer periods of weather. No assessment of land gas can currently be completed.

10.7 Vapour Risks

Considering the potential for vapour risk to be in place from various source as noted below, the following risk are in place.

Table 10 Vapour Risk Assessment - Response Zone

Feature	Targeted Response Zone	Location to Target	Vapour or Gas risk
Crane Works	Made Ground	Site wide	TPH's, Naphthalene, PCB's, VOC's, Semi VOC's, PCB's, BTEX, Oils.
Made Ground			
Railway Land			
Waste Transfer Depot			
Fuel Storage			
Vehicle Parking			
Landfill Sites			
Electric Sub Station			
Scaffold Works			
Oil Company			
Ready Mix Concrete Yard			

Chemical testing has been completed and no elevated level of these vaporous contamination have been recorded in place also when logging and sub-sampling a visual and olfactoral assessment of the soils have been completed, and no contamination that promotes a vapour risk has been encountered within the assessment completed to date.

10.8 Water Main Pipework

New water main pipework can be laid in a conventional pipework system.

Any water main pipework should be laid in clean corridors in order to prevent future risk to workforce used in the maintenance and repair of any water main system.

10.9 Building Risks

Based on the information shown, we can confirm that the risk from explosive land gases is low based on the information identified. The justification for low ground gas risk has been identified and reviewed in Section 10.6.

Considering the risk from Sulphates to concrete we can confirm that the chemical testing has been completed.

Based on the information gained, we can confirm that a classification of DS2-AC1s should be adopted for the site.

10.10 General Source Risk Conclusions

- No elevated metals, semi metals, organic, inorganic, PAH's, Fuels, VOC's or Semi VOC's and PCB's have been recorded within the site throughout any of the samples tested above a commercial land use standard.
    - Many of the samples tested did not exceed a residential land use standard and as such, the site does not pose a significant risk based on the information gained.
- Elevated levels of Asbestos in the form of Chrysotile at locations :-
    - WS2 at a depth of 0.30-0.35 metres.
    - WS3 at a depth of 0.80-0.85 metres.
    - WS5 at a depth of 1.00-1.05 metres.
    - WS12 at a depth of 2.00-2.05 metres.
- No other evidence of contamination has been identified at the site.
- Groundwater risk is identified as Low and is recorded as of low environmental sensitivity.
- Ground Gas Assessments would be required when groundwater or surface water run off is not present within the standpipes in place. This should be undertaken when monitoring wells are dry. This should conclude a full six monitoring rounds.
- No vapour risk area recorded in place
- Additional testing is recommended to further assess the risks found within the site, to aid in the density of sampling unto the currently guidance for asbestos, also to isolate the extent of the targeted risks identified within the site.

11 Risk Assessment Based on Source Risk

Considering the presence of contamination which has been identified above, we confirm the following outlines the assessment of the site completed and way forward for the site.

Table 11 Risk Assessment A

Source	Receptors	Pathway	Mitigation / Discussion
Asbestos	Site Users, (current and future) Construction Workers; Adjacent Site Users, Fauna.	Inhalation of asbestos fibers	Additional testing required to the location of WS2, WS3, WS5 and WS12 Remediation required

Table 12 Risk Assessment B

Source	Receptors	Pathway	Mitigation / Discussion
Land Gases	Site Users, (current and future) Construction Workers; Adjacent Site Users, Fauna.	Inhalation of vapours, (gas and organic) Explosive risk from Land Gas	Complete Land Gas Assessments.

12 Implications of the End Use of the Site

Within the assessment of the site completed within this report, we can confirm that existing source – pathway – receptor risk assessments are now in place based on actual site data. Based on the change in use of the site through this proposed development, it is possible that pathways to receptors will be either be removed or enhanced such that risk may be in place / removed.

The end use risks based on pathways are discussed below and relate to the site as a whole: -

Hard Landscaping **-** will effectively cap off any contamination and remove risk, although, the placement of hard surfaces across the site should be confirmed as part of the planning application and not form a system of remediation that homeowners could remove as part of the ongoing habitation.

- ***Where Asbestos is in place, full remediation and validation will be required.***
- ***If no disturbance of the area is proposed and the area is laid to hard cover, note the location of the contamination on records and avoid future excavation to the area. Should excavation be undertaken, remediation will be required.***

Soft Landscaping **-** will form an area where risk is in place and as such, remedial measures are likely to be required.

- ***Where Asbestos is in place, full remediation and validation will be required***

Under Buildings **-** will effectively cap off any contamination and remove risk.

- ***Where Asbestos is in place, full remediation and validation will be required.***
- ***If no disturbance of the area is proposed and the area is laid to hard cover, note the location of the contamination on records and avoid future excavation to the area. Should excavation be undertaken, remediation will be required.***

Services **-** By examination of the UKWIR, (Guidance for the selection of water supply pipes to be used in brownfield sites) we can confirm the risks associated with human health from water main feeds have been considered in place, as such, preventative measures ***are likely to*** be required for the site. We would suggest that consultation with the relevant statutory authority will be required which may lead to all existing water mains being retained and any new water main installations being in ***'Protect-Aline'*** pipework.

13 Outline Remediation Measures

Considering the above, we would suggest that the following outline remediation measures could be employed in order to develop the site based on the existing data. This will be based on the assumption that there is isolated risk within the site area. although further testing is needed to confirm this.

13.1 Cover Systems - NHBC

The remedial measures are likely to include one of the following cover systems for the site: -

Engineered cover systems – designed to provide the complete separation of the receptor from the hazard and to perform a number of functions including limiting upward migration of contaminants due to capillary rise and controlling the downward infiltration of water.

Simple cover systems – to provide a reduction of the hazard to human health and to provide a suitable medium for plant growth.

Consultation within NHBC guidance documents, (Cover Systems for Land Regeneration), confirm that maximum depths of cover will be required for residential sites and overcome the inherent issues with earthworm activity, burrowing animals, effects of trees and plants, digging during garden activities and intermixing of leaf fall. Justification of this is included within the NHBC guidance document.

It is also recorded that as part of the review, a questionnaire was sent out to various Developers, Consultants and Regulators who all confirmed variable degrees of cover system based on the level of contamination which ranged from 0.30 meters to 3.00 meters, although, the report by NHBC removes these as conservative and the suggestion of a 0.60 meter cover system adopted by the report as a maximum depth of cover required to be sufficient.

It should be noted that these cover systems do not overcome the risks from soil gases, hydrocarbons, highly elevated Mercury or Arsenic, the groundwater or any controlled waters, significant contamination, deep excavations, services, slopes or areas where rabbit or badger populations are significant.

Table 13 *Outline Remediation Measures for end use of the site*

Land Use	Mitigation Measure	Any Additional Works	Depth to remove risk	Confirmation required.
SOFT LANDSCAPING AREAS	***ASBESTOS - to the location of WS2, WS3, WS5 and WS12*** Remediate asbestos risk or fully excavate the removal of Asbestos materials fragments or fibres and complete full validation sampling to confirm risk is removed. Remediation works should be designed through a REMEDIATION STRATEGY REPORT.	***ASBESTOS*** Maintain a watching brief through any construction works and ensure all workforce used in the development of the site adhere to strict health and safety regimes in respect to PPE and RPE	1.00m excavation or full removal and replacement of clean inert soils tested to confirm the infilled soils fall below the human health residential land use standards. OR Install Cobblestone layer within the base of the capping layer if fill is in place at the base.	Complete Validation testing to the sides (if pre validation is not completed) and base of the remediation cell.
HARD LANDSCAPING	***ASBESTOS - to the location of WS2, WS3, WS5 and WS12*** ***If no disturbance of the area is proposed and the area is laid to hard cover, note the location of the contamination on records and avoid future excavation to the area. Should excavation be undertaken, remediation will be required.*** If proposed to be disturbed, fully excavate the removal of Asbestos materials fragments or fibres and complete full validation sampling to confirm risk is removed. Remediation works should be designed through a REMEDIATION STRATEGY REPORT.	***ASBESTOS*** Maintain a watching brief through any construction works and ensure all workforce used in the development of the site adhere to strict health and safety regimes in respect to PPE and RPE	FULLY remove all soils impacted on by Asbestos contamination.	Complete Validation testing to the sides (if pre validation is not completed) and base of the remediation cell.
UNDER BUILDINGS	***ASBESTOS - to the location of WS2, WS3, WS5 and WS12*** ***If no disturbance of the area is proposed and the area is laid to hard cover, note the location of the contamination on records and avoid future excavation to the area. Should excavation be undertaken, remediation will be required.*** If proposed to be disturbed, fully excavate the removal of Asbestos materials fragments or fibres and complete full validation sampling to confirm risk is removed. Remediation works should be designed through a REMEDIATION STRATEGY REPORT. ***Complete land gas assessments***	***ASBESTOS*** Maintain a watching brief through any construction works and ensure all workforce used in the development of the site adhere to strict health and safety regimes in respect to PPE and RPE	FULLY remove all soils impacted on by Asbestos contamination.	Complete Validation testing to the sides (if pre validation is not completed) and base of the remediation cell.
WATER MAIN	Any new water main installations can be installed using Conventional pipework. Any new water main pipework should be laid in clean corridors. Full removal of Asbestos should be completed as identified above	None	None	To Be Confirmed with the relevant statutory authority
CONTROLLED WATERS – SURFACE WATER & GROUND WATER	Groundwater risks removed based on the current site condition. Consider possible future development and pathway creation for contamination to impact on the underlying Secondary Aquifer.			

14 Waste Disposal

The Landfill Directive sets rigorous standards to reduce both our reliance on landfill and the environmental impact of wastes disposed of by landfill. Tighter operational and infrastructure standards limit the types and nature of waste that we can send to landfill and place greater restrictions on the location of landfill sites

The key points are:

- Certain kinds of waste cannot be landfilled.
- Landfills are classified according to whether they can accept hazardous, non-hazardous or inert wastes.
- Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill.
- Most wastes must be treated before you can send them to landfill.
- There are formal processes for identifying and checking wastes you must follow before wastes can be accepted at a landfill site.

The Council Decision lays down waste acceptance procedures (WAP). From this foundation landfill operators should build their own site-specific WAP. The Council Decision WAP must be used to determine whether a waste is suitable to go to landfill, and if so, to which class of landfill. The WAP consist of three steps to identify and periodically check the main characteristics of the waste (see Section 9):

- ***Level 1***: basic characterisation. Before you can send a load of waste to landfill, you need to know its composition and properties so you can determine whether it is suitable for acceptance and at which class of site (see the Council Decision Annex, paragraph 1.1),
- Level 2: compliance testing. If you produce waste that is 'regularly arising', e.g. from an industrial process, you must periodically check the waste to ensure that those properties have not changed (see the Council Decision Annex, paragraph 1.2),
- Level 3: on-site verification. The operator must check each delivery at the landfill to verify that it is the expected waste and that it has not been contaminated in storage or transport (see the Council Decision Annex, paragraph 1.3).

Before a waste producer can take waste to a landfill site for disposal, they need to check the landfill site has the appropriate permit and must have completed the following:

- Duty of care transfer note/Hazardous Waste consignment note
- Pre-treatment declaration form
- Basic characterisation of the waste, to include:
    - Description of the waste
    - Waste code (using List of Wastes)
    - Composition of the waste (by testing, if necessary)
    - WAC testing (if required)

14.1 WAC Testing

One WAC test have been completed on a sample from the site area as follows: -

Table 14 *WAC testing Results*

Location	Depth (m)	Soil description	Classification	Reason
WS3	1.80m	Hardcore brick FILL with crushed concrete with sandy brick infill.	***Stable Nonreactive HAZARDOUS waste in nonhazardous Landfill***	Elevated Sulphate & TDS

15 Source Risk Conclusions

HUMAN HEALTH RISK

The site has identified Made Ground and potentially contaminated ground. These risks form the following layers and associated contamination: -

- Elevated levels of Asbestos in the form of Chrysotile at locations :-
  - WS2 at a depth of 0.30-0.35 metres.
  - WS3 at a depth of 0.80-0.85 metres.
  - WS5 at a depth of 1.00-1.05 metres.
  - WS12 at a depth of 2.00-2.05 metres.
- No other evidence of contamination has been identified at the site.

Based on the above, ***remedial measures will likely be required areas where pathways to receptors are in place***.

WORKFORCE

The above human health risk is in place within the site area, will promote a low risk on a short-term bases to any workforce within the areas. ***Appropriate PPE / RPE should be worn and the soil contamination risk should be noted within any site inductions. This is particularly relevant to the Asbestos risks.***

GROUNDWATER RISKS

Due to the presence of a significant clay across the site, ***risks to groundwater are generally considered low***.

VAPOUR RISKS

Chemical testing of the soils show that low risks are in place. Vapour risk is not in place.

GAS RISKS

Potential for land gas risk from on and off-site landfills are in place. Gas testing needs to be completed, in line with best practice, we would suggest that a minimum of six monitoring rounds should be completed which should be undertaken over falling atmospheric pressures or frozen ground conditions to optimise worst case results for the assessment of the gas regime at the site. This should be undertaken when monitoring wells are dry.

CONSTRUCTION MATERIALS

Water main pipework has been considered and no risk has been identified directly to any water main pipework developed at the site.

Water main pipework can be laid in a conventional pipework system.

Any water main pipework should be laid in clean corridors in order to prevent future risk to workforce used in the maintenance and repair of any water main system.

FURTHER WORKS

It is recommended that additional works will be required for the site in order to complete assessments which are detailed as follows: -

- Additional sampling to be completed across the site when full access to the site can be made.
- Complete six monitoring rounds for Landfill Gas Monitoring over low or rapidly falling atmospheric pressures.

Submit reports to Local Authority and Environment Agency for review and confirm the risks identified in this report along with the further works proposed are suitable and acceptable.

The exact details of remediation required for the site should be assessed and reported in a Remediation Strategy Report in order to comply with current best practice, (BS 10175 & CLR 11).

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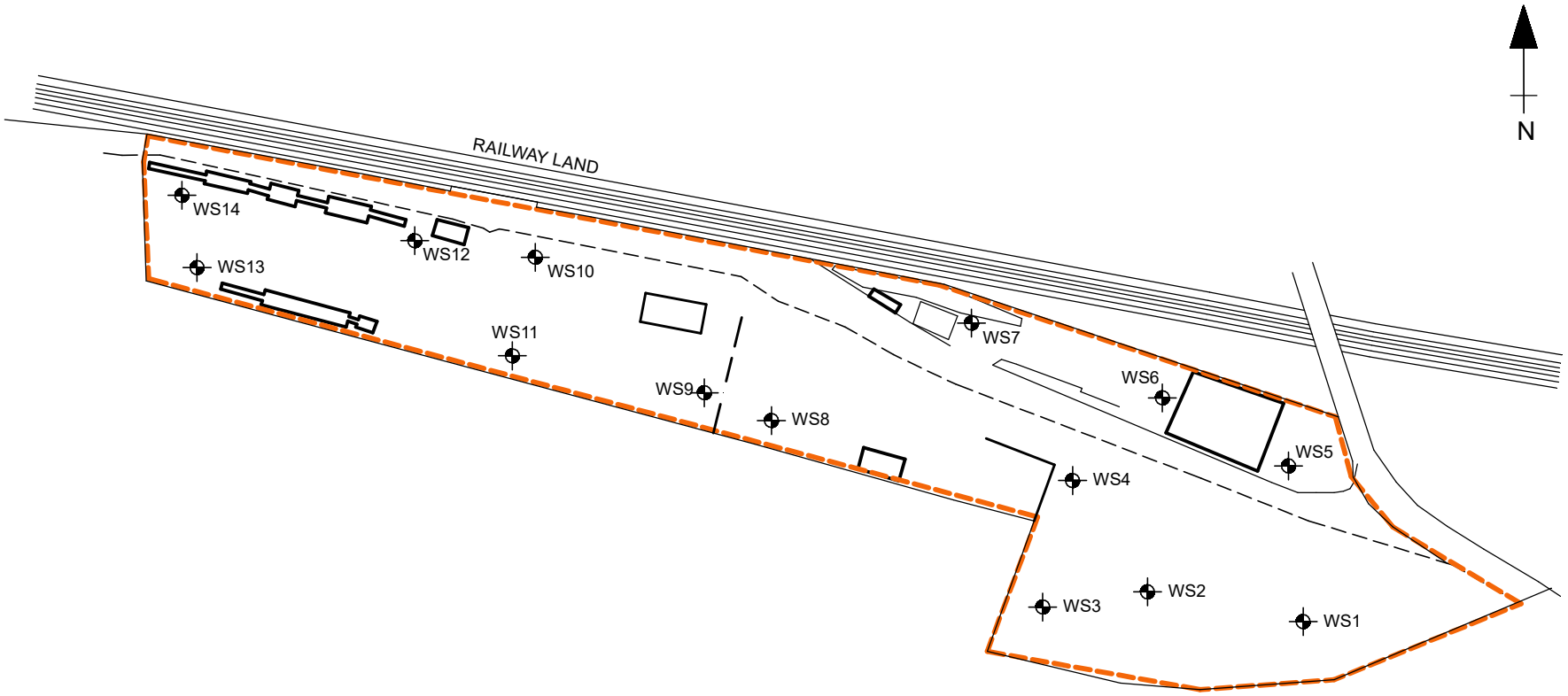
Geotechnical Assessments | Environmental Assessments | Desktop Studies | Contamination Analysis

Appendix No	1
Sheet No	1
Job No	17766
Date	Oct 2022

Uxbridge Skip HIre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL

EXISTING SITE PLAN



Not to Scale
Sketch No. : GEO / 17766 / 01 / 01

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Herts & Essex Site Investigations
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01920 822233 | www.hesi.co.uk | info@hesi.co.uk
Geotechnical Assessments | Environmental Assessments | Desktop Studies | Contamination Analysis

Appendix No 2
Sheet No 1
Job No 17766
Date Oct 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample One

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
MADE GROUND - Hardcore brick FILL with crushed concrete with sandy brick infill.		1.80	1.80		1	U	GL - 1.00			Bentonite Seal; Solid Pipework	
					2	U	1.00-2.00			50 mmø Slotted Pipework; Pea Shingle	1.00
Firm to stiff light brown mottled grey slightly silty CLAY		2.40	0.60		3	U	2.00 - 3.00				
Firm to stiff orange brown slightly silty CLAY		3.00	0.60								
Borehole Complete at 3.00m											

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No	2
Sheet No	2
Job No	17766
Date	Oct 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Two

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
MADE GROUND - Hardcore brick FILL with crushed concrete with sandy brick infill.			3.00		1	U	GL - 1.00				1.00
					2	U	1.00-2.00				
					3	U	2.00 - 3.00				
1.0											
2.0											
3.0 Borehole Complete at 3.00m		3.00									

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Job No 17766
Date Oct 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Three

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
MADE GROUND - Hardcore brick FILL with crushed concrete with sandy brick infill.					1	U	GL - 1.00				
1.0					2	U	1.00-2.00				1.00
			2.10	Perched water at 2.00 metres							
2.0					3	U	2.00 - 3.00				
		2.10									
Firm Brown Grey Mottled Clay			0.90								
3.0 Borehole Complete at 3.00m		3.00									

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
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Job No 17766
Date Oct 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Four

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
MADE GROUND - Hardcore brick FILL with crushed concrete with sandy brick infill.					1	U	GL - 1.00				
					2	U	1.00-2.00				1.00
		2.10	2.10								
Borehole Complete at 2.10m CONCRETE OBSTRUCTION											

1.0
2.0
3.0

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
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Job No 17766
Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Five

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete cored		0.20	0.20	DRY	1	U	GL - 1.00				
Made ground black clinker FILL		1.20	1.00		2	U	1.00-2.00				1.00
Made ground: brick and concrete hardcore FILL		2.70	1.50		3	U	2.00 - 3.00				
Firm to stiff brown CLAY											
Borehole Complete at 3.00m		3.00	0.30								

1.0
2.0
3.0

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
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Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Six

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.20	0.20	DRY	1	U	GL - 1.00				
Made ground hardcore FILL		0.80	0.60								
Firm to stiff brown mottled grey slightly silty CLAY			2.20		2	U	1.00-2.00				1.00
					3	U	2.00 - 3.00				
Borehole Complete at 3.00m		3.00									

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Seven

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.25	0.25	DRY	1	U	GL - 1.00				
Made ground hardcore FILL		1.40	1.15		2	U	1.00-1.40				1.00
Borehole Complete at 1.40m No further progress											

1.0
2.0
3.0

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
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Job No 17766
Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Eight

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.25	0.25	DRY	1	U	GL - 1.00				
Made ground hardcore FILL		0.60	0.35								
Stiff firm green grey mottled CLAY		1.10	0.50		2	U	1.00-2.00				1.00
Stiff firm brown grey mottled CLAY			1.90		3	U	2.00 - 3.00				
Borehole Complete at 3.00m		3.00									

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Nine

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.15	0.15	DRY	1	U	GL - 1.00			Bentonite Seal; Solid Pipework	
Made ground hardcore concrete FILL		0.60	0.45								
Firm to stiff brown mottled grey CLAY			2.40		2	U	1.00-2.00			50 mmø Slotted Pipework; Pea Shingle	1.00
					3	U	2.00 - 3.00				
Borehole Complete at 3.00m		3.00									

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
Sheet No 10
Job No 17766
Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Ten

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.15	0.15	DRY	1	U	GL - 1.00			Bentonite Seal; Solid Pipework	
Made ground hardcore clay FILL		0.80	0.65								
Firm to stiff grey brown slightly silty CLAY		1.00	0.20		2	U	1.00-2.00				1.00
Firm to stiff brown mottled grey CLAY		3.00	2.00		3	U	2.00 - 3.00			50 mmø Slotted Pipework; Pea Shingle	
Borehole Complete at 3.00m											

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Eleven

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.37	0.37	DRY	1	U	GL - 1.00				1.00
Made ground hardcore clay FILL		0.50	0.13								
Firm to stiff grey brown silty CLAY		1.10	0.60		2	U	1.00-2.00				
Firm to stiff brown mottled grey CLAY		3.00	1.90		3	U	2.00 - 3.00				
Borehole Complete at 3.00m											

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Twelve

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.29	0.29	DRY	1	U	GL - 1.00				
Made ground hardcore FILL		0.90	0.61								
1.0 Made ground orange clay FILL with rare clinker		2.20	1.30		2	U	1.00-2.00				1.00
2.0 Firm to stiff brown mottled grey CLAY		3.00	0.80		3	U	2.00 - 3.00				
3.0 Borehole Complete at 3.00m											

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Appendix No 2
Sheet No 13
Job No 17766
Date Nov 2022

Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Thirteen

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.45	0.45	DRY	1	U	GL - 0.50				
Made ground concrete FILL		0.50	0.05								
Borehole Complete at 0.50m No further progress											

1.0
2.0
3.0

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

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Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon UB9 6JL

Window Sample Fourteen

Description Of Stratum	Legend	Depth	Thickness (m)	Water Level	Samples No	Samples Type	Samples Depth (m)	S.P.T N-Value or Vane Strength	VOC's (ppm)	Installations	Casing Depth, (m)
Concrete		0.47	0.47	DRY	1	U	GL - 1.00				
Made ground hardcore FILL		1.00	0.53								1.00
Made Ground Clinker FILL		2.00	1.00		2	U	1.00-2.00				
Firm to stiff brown mottled grey CLAY		3.00	1.00		3	U	2.00 - 3.00				
Borehole Complete at 0.50m											

1.0
2.0
3.0

Remarks

Key : U - Undisturbed Sample (100mm diameter) | B - Bulk Sample | - Water Struck | D - Disturbed Sample | - Water Standing | W - Water Sample | T - Chemical Tub | N - SPT N-Value | V - Vane Test, (kN.m²)

i2 SAMPLE CHAIN OF CUSTODY RECORD

No

7 Woodshots Meadow
Croxley Green Business Park
Watford
WD18 8YS

t: 01923 225404
f: 01923 237404

reception@i2analytical.com

Client:	Herts & Essex Site Investigations
Address:	Unit J8, Peek Busines Park, Woodside, Bishops Stortford, Herts, CM23 5RG
Client e-mail:	csgray@hesi.co.uk; rchamberlain@hesi.co.uk
Project/Site Name:	***Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL***
Project/Site Code:	**17766**
Contact Name:	Chris Gray / Rebecca Chamberlain
Tel :	01920 822233
Fax:	01920 822200

Date samples dispatched:	
Samples delivered/collected by:	
Sampler I.d.	
Turnaround time/date results due:	5

Sheet 1 of 1

One project/ site per sheet please

Client PO

17766

Please indicate the analysis required for each sample by marking the boxes

Lab Use	BH or TP or Sample ID	Depth (m)	Date sample taken	Time sample taken	S- soil, W – water, L - leachate, O - other	No. of containers	HESI Suite 1 (soils)	TPH + CWG (soils)	Asbestos (quantification if found)	2 Stage WAC	VOC & Semi VOCs	PCB								Sample Specific Notes/ **Container types (Lab use Only)**
	WS1	0.60	12/10/22		S	2			X											
	WS1	1.20	12/10/22		S	2	X	X												
	WS2	0.30	12/10/22		S	2			X											
	WS2	1.50	12/10/22		S	2			X											
	WS2	3.00	12/10/22		S	2			X											
	WS3	0.80	12/10/22		S	2	X		X											
	WS3	1.80	12/10/22		S	3		X	X	X										
	WS4	0.50	12/10/22		S	2	X	X	X		X	X								
	WS4	1.50	12/10/22		S	2			X											

Total no. of samples: **9**

Special instructions / QC; requirements & comments:

Possible Hazard Identification

Non-Hazard ☐ Hazardous ☐ Unknown **X**

Samples not dispatched to the laboratory within 24 hours of sampling :
Please tick if the samples **have not** been stored as recommended in our standard holding times. ☐

avg. transport temp.

hours in transport

Sample disposal (a fee maybe assessed if samples are retained longer than 1 month) — return to client ☐ — disposal by lab **X** — archive for ☐

i2 QUOTE NO

LAB USE ONLY

Data received: ☐ **time:** ☐ **by:** ☐

Data instructed: ☐ **time:** ☐ **by:** ☐

Laboratory notes

Sampling Chain of Custody (CoC)

eurofins | Chemtest

Please note that any testing scheduled where a matrix option is not selected may be subject to Non-Conformance.
Failure to complete all sections of this form may delay analysis.

Required Information

Company Name:	Herts and Essex Site Investigations
Company Address:	
	Unit J8, Peek Business Park, Woodside, Bishop's Stortford CM23 5RG
Site Location:	Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL
Project Reference:	17766
PO Number:	As above
Quote Number:	
Project Contact Name(s)	Chris Gray
Project Contact Email(s)	csgray@hesi.co.uk
	rchamberlain@hesi.co.uk
Main Contact:	Chris Gray
Secondary Contact:	Rebecca Chamberlain

Lab Contact Information

Delivery Information:	Eurofins Chemtest Ltd
	12 Depot Road
	Newmarket. CB8 0AL
Contact Information:	Phone: 01638 606070
	Email: cs.team@chemtest.com
	Web: www.chemtest.com

Water Matrix Codes

Ground Water (**GW**)	Treated Sewage (**TS**)	Soils (**S**)
Surface Water (**SW**)	Trade Effluent (**TE**)	Gas (**G**)
Drinking Water (**DW**)	Saline Water (**SA**)	Product (**P**)
Land Leachate (**LE**)	Process Water (**PR**)	Sludge (**SL**)
Prepared Leachate (**PL**)	Recreational Water (**RE**)	Unspecified Solid (**UNS**)
Untreated Sewage (**US**)	Unspecified Liquid (**UNL**)	

Other Codes

Type of Analysis

Suite / Determinand

HESI Suite 1 | TPHs (CWG) | Asbestos (+ quant if found) | VOCs and semi VOCs | PCBs | Pesticides DTTs

Sample Information

PLEASE DETAIL BELOW ANY POTENTIAL HAZARDS THAT MAY BE ASSOCIATED WITH THESE SAMPLES
example; Anthrax, Radioactive, Explosives

ANALYSIS REQUIRED (please tick appropriately)

Sample Date	Sample Time	Location	AGS Type	Sample Ref	Sample ID	Top Depth	Bottom Depth	MATRIX CODE	Container Type (see key below)	HESI Suite 1	TPHs (CWG)	Asbestos (+ quant if found)	VOCs and semi VOCs	PCBs	Pesticides DTTs
SAMP_DATE	SAMP_TIME	LOCA_ID	SAMP_TYPE	SAMP_REF	SAMP_ID	SAMP_TOP	SAMP_BASE								
11/11/2022		WS5				1.00		S	PT / AJ250			X			
11/11/2022		WS6				0.60		S	PT / AJ250			X			
11/11/2022		WS7				1.20		S	PT / AJ250	X	X				
11/11/2022		WS8				0.50		S	PT / AJ250			X			
11/11/2022		WS9				0.50		S	PT / AJ250			X			
11/11/2022		WS10				0.70		S	PT / AJ250	X	X				
11/11/2022		WS11				0.40		S	PT / AJ250			X	X	X	
11/11/2022		WS12				2.00		S	PT / AJ250			X			X
11/11/2022		WS14				1.20		S	PT / AJ250	X	X				

Client's signature:

Date of Collection

Container Key:

PB - 1L Plastic Bottle	V - 40ml Vial
AB - 1L Winchester	PT - Plastic Tub
AJ - 60/250 Amber Jar	TT - Tenax Tube

Lab Use Only

Consignment Condition:	Received by:
Arriving Temperature:	Date and time:

Turnaround Time Agreed:

3	5	7	10
WAC 5	WAC 7	Other:	

Chris Gray
Herts & Essex Site Investigations
The Old Post Office
Wellpond Green
Standon
Herts
SG11 1NJ

t: 01920 822233

e: csgray@hesi.co.uk

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 22-89666

Project / Site name:	Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL	**Samples received on:**	12/10/2022
Your job number:	17766	**Samples instructed on/ Analysis started on:**	12/10/2022
Your order number:	17766	**Analysis completed by:**	25/10/2022
Report Issue Number:	1	**Report issued on:**	25/10/2022
Samples Analysed:	9 soil samples		

Signed:

Adam Fenwick
Technical Reviewer
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

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

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: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL
Your Order No: 17766

Lab Sample Number				2458261	2458262	2458263	2458264	2458265
Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	-	< 0.1	-	-	-
Moisture Content	%	0.01	NONE	-	15	-	-	-
Total mass of sample received	kg	0.001	NONE	-	0.5	-	-	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	0.229	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	0.229	-	-
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	-	10.9	-	-	-
Electrical Conductivity	µS/cm	10	ISO 17025	-	2700	-	-	-
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	-	-	-
Free Cyanide	mg/kg	1	MCERTS	-	< 1.0	-	-	-
Total Sulphate as SO4	mg/kg	50	MCERTS	-	57000	-	-	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	3400	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	1.7	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	1700	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	1.7	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Fluorene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	NONE	-	0.28	-	-	-
Anthracene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Fluoranthene	mg/kg	0.05	NONE	-	0.7	-	-	-
Pyrene	mg/kg	0.05	NONE	-	0.66	-	-	-
Benzo(a)anthracene	mg/kg	0.05	NONE	-	0.32	-	-	-
Chrysene	mg/kg	0.05	NONE	-	0.4	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	0.36	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	0.25	-	-	-
Benzo(a)pyrene	mg/kg	0.05	NONE	-	0.35	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	0.2	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	0.25	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	-	3.77	-	-	-

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Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	11	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	2	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.6	-	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	< 1.8	-	-	-
Chromium (III)	mg/kg	1	NONE	-	27	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	27	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	25	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	88	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	17	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	190	-	-	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	NONE	-	< 1.0	-	-	-
Toluene	µg/kg	1	NONE	-	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	NONE	-	< 1.0	-	-	-
p & m-xylene	µg/kg	1	NONE	-	< 1.0	-	-	-
o-xylene	µg/kg	1	NONE	-	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	< 1.0	-	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	NONE	-	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	NONE	-	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	NONE	-	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	NONE	-	< 8.0	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	< 10	-	-	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	NONE	-	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	NONE	-	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	-	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	-	< 10	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	< 10	-	-	-

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Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	NONE	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	NONE	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	NONE	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	NONE	-	-	-	-	-
Trichloromethane	µg/kg	1	NONE	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	1	NONE	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	NONE	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	NONE	-	-	-	-	-
Tetrachloromethane	µg/kg	1	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	NONE	-	-	-	-	-
Trichloroethene	µg/kg	1	NONE	-	-	-	-	-
Dibromomethane	µg/kg	1	NONE	-	-	-	-	-
Bromodichloromethane	µg/kg	1	NONE	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	NONE	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	NONE	-	-	-	-	-
Toluene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	NONE	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	NONE	-	-	-	-	-
Dibromochloromethane	µg/kg	1	NONE	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	NONE	-	-	-	-	-
Chlorobenzene	µg/kg	1	NONE	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	-	-
Ethylbenzene	µg/kg	1	NONE	-	-	-	-	-
p & m-Xylene	µg/kg	1	NONE	-	-	-	-	-
Styrene	µg/kg	1	NONE	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	NONE	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	-	-	-	-	-
Isopropylbenzene	µg/kg	1	NONE	-	-	-	-	-
Bromobenzene	µg/kg	1	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	1	NONE	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	NONE	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	NONE	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	NONE	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	NONE	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	NONE	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	NONE	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	NONE	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	NONE	-	-	-	-	-
Butylbenzene	µg/kg	1	NONE	-	-	-	-	-

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Lab Sample Number				2458261	2458262	2458263	2458264	2458265
Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	NONE	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	-	-	-

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Lab Sample Number				2458261	2458262	2458263	2458264	2458265
Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	NONE	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	NONE	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	NONE	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	NONE	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	NONE	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	NONE	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	NONE	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Naphthalene	mg/kg	0.05	NONE	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	NONE	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	NONE	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	NONE	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	NONE	-	-	-	-	-
Acenaphthene	mg/kg	0.05	NONE	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	NONE	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	-	-
Fluorene	mg/kg	0.05	NONE	-	-	-	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	NONE	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	NONE	-	-	-	-	-
Phenanthrene	mg/kg	0.05	NONE	-	-	-	-	-
Anthracene	mg/kg	0.05	NONE	-	-	-	-	-
Carbazole	mg/kg	0.3	NONE	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	-	-
Fluoranthene	mg/kg	0.05	NONE	-	-	-	-	-
Pyrene	mg/kg	0.05	NONE	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	NONE	-	-	-	-	-
Chrysene	mg/kg	0.05	NONE	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	NONE	-	-	-	-	-

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Your Order No: 17766

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Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	-	-	-	-

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Lab Sample Number				2458261	2458262	2458263	2458264	2458265
Sample Reference				WS1	WS1	WS2	WS2	WS2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	1.20	0.30	1.50	3.00
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
PCBs by GC-MS								
PCB Congener 28	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	-	-	-
Total PCBs by GC-MS								
Total PCBs	mg/kg	0.007	NONE	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	-
Moisture Content	%	0.01	NONE	16	21	12	-
Total mass of sample received	kg	0.001	NONE	0.8	1.2	0.5	-
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile	-	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	< 0.001	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	< 0.001	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	JSW	JSW	JSW	JSW
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	8.8	-	9.6	-
Electrical Conductivity	µS/cm	10	ISO 17025	2000	-	650	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Total Sulphate as SO4	mg/kg	50	MCERTS	13000	-	6300	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3700	-	1700	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	1.8	-	0.83	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1850	-	835	-
Organic Matter (automated)	%	0.1	MCERTS	1.9	-	1.3	-
Total Phenols							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-
Speciated PAHs							
Naphthalene	mg/kg	0.05	NONE	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	-	0.32	-
Acenaphthene	mg/kg	0.05	NONE	< 0.05	-	0.26	-
Fluorene	mg/kg	0.05	NONE	< 0.05	-	0.42	-
Phenanthrene	mg/kg	0.05	NONE	< 0.05	-	5.8	-
Anthracene	mg/kg	0.05	NONE	< 0.05	-	1.3	-
Fluoranthene	mg/kg	0.05	NONE	< 0.05	-	10	-
Pyrene	mg/kg	0.05	NONE	< 0.05	-	9.3	-
Benzo(a)anthracene	mg/kg	0.05	NONE	< 0.05	-	4.3	-
Chrysene	mg/kg	0.05	NONE	< 0.05	-	4.6	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	< 0.05	-	4.9	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	< 0.05	-	2.2	-
Benzo(a)pyrene	mg/kg	0.05	NONE	< 0.05	-	4	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	-	2.1	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	-	0.49	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	-	2.5	-
Total PAH							
Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	< 0.80	-	52.3	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	-	29	-
Boron (water soluble)	mg/kg	0.2	MCERTS	3.1	-	1.8	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	< 1.8	-
Chromium (III)	mg/kg	1	NONE	30	-	47	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	30	-	48	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	-	75	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	-	170	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	-	19	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	58	-	180	-
Monoaromatics & Oxygenates							
Benzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-
Toluene	µg/kg	1	NONE	-	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	NONE	-	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	NONE	-	< 1.0	< 1.0	-
o-xylene	µg/kg	1	NONE	-	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	< 1.0	< 1.0	-
Petroleum Hydrocarbons							
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	NONE	-	5.4	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	NONE	-	16	5.9	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	NONE	-	29	9.4	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	NONE	-	68	41	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	120	57	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	NONE	-	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	NONE	-	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	-	< 10	17	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	-	< 10	34	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	< 10	51	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
VOCs							
Chloromethane	µg/kg	1	NONE	-	-	< 1.0	-
Chloroethane	µg/kg	1	NONE	-	-	< 1.0	-
Bromomethane	µg/kg	1	NONE	-	-	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	-	-	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	NONE	-	-	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	-	< 1.0	-
1,1-Dichloroethane	µg/kg	1	NONE	-	-	< 1.0	-
2,2-Dichloropropane	µg/kg	1	NONE	-	-	< 1.0	-
Trichloromethane	µg/kg	1	NONE	-	-	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	NONE	-	-	< 1.0	-
1,2-Dichloroethane	µg/kg	1	NONE	-	-	< 1.0	-
1,1-Dichloropropene	µg/kg	1	NONE	-	-	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	< 1.0	-
Benzene	µg/kg	1	NONE	-	-	< 1.0	-
Tetrachloromethane	µg/kg	1	NONE	-	-	< 1.0	-
1,2-Dichloropropane	µg/kg	1	NONE	-	-	< 1.0	-
Trichloroethene	µg/kg	1	NONE	-	-	< 1.0	-
Dibromomethane	µg/kg	1	NONE	-	-	< 1.0	-
Bromodichloromethane	µg/kg	1	NONE	-	-	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	NONE	-	-	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	NONE	-	-	< 1.0	-
Toluene	µg/kg	1	NONE	-	-	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	NONE	-	-	< 1.0	-
1,3-Dichloropropane	µg/kg	1	NONE	-	-	< 1.0	-
Dibromochloromethane	µg/kg	1	NONE	-	-	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	-	-	< 1.0	-
1,2-Dibromoethane	µg/kg	1	NONE	-	-	< 1.0	-
Chlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	NONE	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
p & m-Xylene	µg/kg	1	NONE	-	-	< 1.0	-
Styrene	µg/kg	1	NONE	-	-	< 1.0	-
Tribromomethane	µg/kg	1	NONE	-	-	< 1.0	-
o-Xylene	µg/kg	1	NONE	-	-	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	NONE	-	-	< 1.0	-
Isopropylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
Bromobenzene	µg/kg	1	NONE	-	-	< 1.0	-
n-Propylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
2-Chlorotoluene	µg/kg	1	NONE	-	-	< 1.0	-
4-Chlorotoluene	µg/kg	1	NONE	-	-	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
tert-Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
sec-Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-
p-Isopropyltoluene	µg/kg	1	NONE	-	-	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-
Butylbenzene	µg/kg	1	NONE	-	-	< 1.0	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
1,2-Dibromo-3-chloropropane	µg/kg	1	NONE	-	-	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-
Hexachlorobutadiene	µg/kg	1	NONE	-	-	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	NONE	-	-	< 1.0	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
SVOCs							
Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-
Phenol	mg/kg	0.2	NONE	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	NONE	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	NONE	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	NONE	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	NONE	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	NONE	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	NONE	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	NONE	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-
Isophorone	mg/kg	0.2	NONE	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	NONE	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	NONE	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	NONE	-	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	NONE	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	NONE	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	NONE	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	NONE	-	-	0.32	-
Acenaphthene	mg/kg	0.05	NONE	-	-	0.26	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	NONE	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	NONE	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-
Fluorene	mg/kg	0.05	NONE	-	-	0.42	-
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	NONE	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	NONE	-	-	5.8	-
Anthracene	mg/kg	0.05	NONE	-	-	1.3	-
Carbazole	mg/kg	0.3	NONE	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	NONE	-	-	10	-
Pyrene	mg/kg	0.05	NONE	-	-	9.3	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	NONE	-	-	4.3	-
Chrysene	mg/kg	0.05	NONE	-	-	4.6	-
Benzo(b)fluoranthene	mg/kg	0.05	NONE	-	-	4.9	-
Benzo(k)fluoranthene	mg/kg	0.05	NONE	-	-	2.2	-
Benzo(a)pyrene	mg/kg	0.05	NONE	-	-	4	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	-	-	2.1	-
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	-	-	0.49	-
Benzo(ghi)perylene	mg/kg	0.05	NONE	-	-	2.5	-

Analytical Report Number: 22-89666
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hilli
Your Order No: 17766

Lab Sample Number				2458266	2458267	2458268	2458269
Sample Reference				WS3	WS3	WS4	WS4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80	1.80	0.50	1.50
Date Sampled				12/10/2022	12/10/2022	12/10/2022	12/10/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
PCBs by GC-MS							
PCB Congener 28	mg/kg	0.001	NONE	-	-	0.01	-
PCB Congener 52	mg/kg	0.001	NONE	-	-	< 0.001	-
PCB Congener 101	mg/kg	0.001	NONE	-	-	0.003	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	0.006	-
PCB Congener 138	mg/kg	0.001	NONE	-	-	0.006	-
PCB Congener 153	mg/kg	0.001	NONE	-	-	0.003	-
PCB Congener 180	mg/kg	0.001	NONE	-	-	< 0.001	-
Total PCBs by GC-MS							
Total PCBs	mg/kg	0.007	NONE	-	-	0.028	-

U/S = Unsuitable Sample I/S = Insufficient Sample

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	22-43780-1
Initial Date of Issue:	12-Dec-2022
Client	Herts & Essex Site Investigations
Client Address:	Unit J8 Peek Business Park Woodside Bishops Stortford Hertfordshire CM23 5RG
Contact(s):	Chris Gray Dafydd Hudd Rebecca Chamberlain
Project	17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Quotation No.:		**Date Received:**	15-Nov-2022
Order No.:	17766	**Date Instructed:**	15-Nov-2022
No. of Samples:	9		
Turnaround (Wkdays):	10	**Results Due:**	28-Nov-2022
Date Approved:	12-Dec-2022		

Approved By:

Details: Stuart Henderson, Technical Manager

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations		**Chemtest Job No.:**			22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:		**Chemtest Sample ID.:**			1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	Fibres/Clumps	-	-	-	-	-	-	Fibres/Clumps
Asbestos Identification	U	2192		N/A	Chrysotile	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile
Asbestos by Gravimetry	U	2192	%	0.001	0.002							0.001
Total Asbestos	U	2192	%	0.001	0.002							0.001
Moisture	N	2030	%	0.020			20			24	27	19
Stones and Removed Materials	N	2030	%	0.020			< 0.020			< 0.020		
Soil Colour	N	2040		N/A			Brown			Brown	Brown	Brown
Other Material	N	2040		N/A			None			None	Stones	None
Soil Texture	N	2040		N/A			Clay			Clay	Clay	Clay
pH	M	2010		4.0			8.0			8.0		
Electrical Conductivity (2:1)	N	2020	µS/cm	1.0			200			340		
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40			1.6			2.0		
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010			0.052			< 0.010		
Cyanide (Free)	M	2300	mg/kg	0.50			< 0.50			< 0.50		
Cyanide (Total)	M	2300	mg/kg	0.50			< 0.50			< 0.50		
Sulphate (Total)	U	2430	%	0.010			0.029			0.079		
Arsenic	M	2455	mg/kg	0.5			9.0			20		
Cadmium	M	2455	mg/kg	0.10			< 0.10			< 0.10		
Copper	M	2455	mg/kg	0.50			19			20		
Mercury	M	2455	mg/kg	0.05			< 0.05			0.05		
Nickel	M	2455	mg/kg	0.50			20			41		
Lead	M	2455	mg/kg	0.50			11			34		
Zinc	M	2455	mg/kg	0.50			45			74		
Chromium (Trivalent)	N	2490	mg/kg	1.0			23			52		
Chromium (Hexavalent)	N	2490	mg/kg	0.50			< 0.50			< 0.50		
Organic Matter	M	2625	%	0.40			< 0.40			1.1		
Aliphatic VPH >C5-C6	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Aliphatic VPH >C6-C7	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Aliphatic VPH >C7-C8	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Aliphatic VPH >C8-C10	M	2780	µg/kg	0.05			0.11			< 0.05		
Total Aliphatic VPH >C5-C10	M	2780	µg/kg	0.25			< 0.25			< 0.25		
Aromatic VPH >C5-C7	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Aromatic VPH >C7-C8	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Aromatic VPH >C8-C10	M	2780	µg/kg	0.05			< 0.05			< 0.05		
Total Aromatic VPH >C5-C10	M	2780	µg/kg	0.25			< 0.25			< 0.25		
Total VPH >C5-C10	M	2780	µg/kg	0.50			< 0.50			< 0.50		

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations		**Chemtest Job No.:**			22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:		**Chemtest Sample ID.:**			1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00			< 2.0			< 2.0		
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00			1.5			< 1.0		
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00			< 2.0			< 2.0		
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00			< 3.0			3.3		
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00			< 1.0			< 1.0		
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00			< 5.0			< 5.0		
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00			< 1.0			< 1.0		
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00			3.3			< 1.0		
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00			15			8.1		
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00			4.7			2.8		
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00			1.2			< 1.0		
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00			24			12		
Total EPH >C10-C35	M	2690	mg/kg	10.00			28			16		
Naphthalene	M	2700	mg/kg	0.10			< 0.10			1.0		
Acenaphthylene	M	2700	mg/kg	0.10			< 0.10			0.23		
Acenaphthene	M	2700	mg/kg	0.10			< 0.10			0.40		
Fluorene	M	2700	mg/kg	0.10			< 0.10			0.43		
Phenanthrene	M	2700	mg/kg	0.10			< 0.10			1.4		
Anthracene	M	2700	mg/kg	0.10			< 0.10			0.24		
Fluoranthene	M	2700	mg/kg	0.10			0.28			0.73		
Pyrene	M	2700	mg/kg	0.10			0.34			0.84		
Benzo[a]anthracene	M	2700	mg/kg	0.10			< 0.10			0.46		
Chrysene	M	2700	mg/kg	0.10			< 0.10			1.1		
Benzo[b]fluoranthene	M	2700	mg/kg	0.10			< 0.10			0.71		
Benzo[k]fluoranthene	M	2700	mg/kg	0.10			< 0.10			0.28		
Benzo[a]pyrene	M	2700	mg/kg	0.10			< 0.10			0.54		
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10			< 0.10			0.37		
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10			< 0.10			0.27		
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10			< 0.10			0.89		
Total Of 16 PAH's	M	2700	mg/kg	2.0			< 2.0			9.9		
Dichlorodifluoromethane	U	2760	µg/kg	1.0							< 1.0	
Chloromethane	M	2760	µg/kg	1.0							< 1.0	
Vinyl Chloride	M	2760	µg/kg	1.0							< 1.0	
Bromomethane	M	2760	µg/kg	20							< 20	
Chloroethane	U	2760	µg/kg	2.0							< 2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0							< 1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0							< 1.0	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0							< 1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0							< 1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0							< 1.0	
Bromochloromethane	U	2760	µg/kg	5.0							< 5.0	
Trichloromethane	M	2760	µg/kg	1.0							< 1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0							< 1.0	
Tetrachloromethane	M	2760	µg/kg	1.0							< 1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0							< 1.0	
Benzene	M	2760	µg/kg	1.0							< 1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0							< 2.0	
Trichloroethene	N	2760	µg/kg	1.0							< 1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0							< 1.0	
Dibromomethane	M	2760	µg/kg	1.0							< 1.0	
Bromodichloromethane	M	2760	µg/kg	5.0							< 5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10							< 10	
Toluene	M	2760	µg/kg	1.0							< 1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10							< 10	
1,1,2-Trichloroethane	M	2760	µg/kg	10							< 10	
Tetrachloroethene	M	2760	µg/kg	1.0							< 1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0							< 2.0	
Dibromochloromethane	U	2760	µg/kg	10							< 10	
1,2-Dibromoethane	M	2760	µg/kg	5.0							< 5.0	
Chlorobenzene	M	2760	µg/kg	1.0							< 1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0							< 2.0	
Ethylbenzene	M	2760	µg/kg	1.0							< 1.0	
m & p-Xylene	M	2760	µg/kg	1.0							< 1.0	
o-Xylene	M	2760	µg/kg	1.0							< 1.0	
Styrene	M	2760	µg/kg	1.0							< 1.0	
Tribromomethane	U	2760	µg/kg	1.0							< 1.0	
Isopropylbenzene	M	2760	µg/kg	1.0							< 1.0	
Bromobenzene	M	2760	µg/kg	1.0							< 1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50							< 50	
N-Propylbenzene	U	2760	µg/kg	1.0							< 1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0							< 1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0							< 1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0							< 1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0							< 1.0	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations		**Chemtest Job No.:**			22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:		**Chemtest Sample ID.:**			1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0							< 1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0							< 1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0							< 1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0							< 1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0							< 1.0	
N-Butylbenzene	U	2760	µg/kg	1.0							< 1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0							< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50							< 50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0							< 1.0	
Hexachlorobutadiene	N	2760	µg/kg	1.0							< 1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0							< 2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0							< 1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50							< 0.50	
Phenol	M	2790	mg/kg	0.50							< 0.50	
2-Chlorophenol	M	2790	mg/kg	0.50							< 0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50							< 0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50							< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50							< 0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50							< 0.50	
2-Methylphenol	M	2790	mg/kg	0.50							< 0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50							< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50							< 0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50							< 0.50	
4-Methylphenol	M	2790	mg/kg	0.50							< 0.50	
Nitrobenzene	M	2790	mg/kg	0.50							< 0.50	
Isophorone	M	2790	mg/kg	0.50							< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50							< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50							< 0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50							< 0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50							< 0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50							< 0.50	
Naphthalene	M	2790	mg/kg	0.50							< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50							< 0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50							< 0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50							< 0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50							< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50							< 0.50	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			Chemtest Job No.:		22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:			Chemtest Sample ID.:		1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50							< 0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50							< 0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50							< 0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50							< 0.50	
2-Nitroaniline	M	2790	mg/kg	0.50							< 0.50	
Acenaphthylene	M	2790	mg/kg	0.50							< 0.50	
Dimethylphthalate	M	2790	mg/kg	0.50							< 0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50							< 0.50	
Acenaphthene	M	2790	mg/kg	0.50							< 0.50	
3-Nitroaniline	N	2790	mg/kg	0.50							< 0.50	
Dibenzofuran	M	2790	mg/kg	0.50							< 0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50							< 0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50							< 0.50	
Fluorene	M	2790	mg/kg	0.50							< 0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50							< 0.50	
4-Nitroaniline	M	2790	mg/kg	0.50							< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50							< 0.50	
Azobenzene	M	2790	mg/kg	0.50							< 0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50							< 0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50							< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50							< 0.50	
Phenanthrene	M	2790	mg/kg	0.50							< 0.50	
Anthracene	M	2790	mg/kg	0.50							< 0.50	
Carbazole	M	2790	mg/kg	0.50							< 0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50							< 0.50	
Fluoranthene	M	2790	mg/kg	0.50							< 0.50	
Pyrene	M	2790	mg/kg	0.50							< 0.50	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50							< 0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50							< 0.50	
Chrysene	M	2790	mg/kg	0.50							< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50							< 0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50							< 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50							< 0.50	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50							< 0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50							< 0.50	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50							< 0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50							< 0.50	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780	22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545465	1545466	1545467	1545468	1545469	1545470	1545471	1545472
			Sample Location:		WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	0.60	1.20	0.50	0.50	0.70	0.40	2.00
			Date Sampled:		11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022	11-Nov-2022
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50							< 0.50	
PCB 28	U	2815	mg/kg	0.010							< 0.010	
PCB 52	U	2815	mg/kg	0.010							< 0.010	
PCB 90+101	U	2815	mg/kg	0.010							< 0.010	
PCB 118	U	2815	mg/kg	0.010							< 0.010	
PCB 153	U	2815	mg/kg	0.010							< 0.010	
PCB 138	U	2815	mg/kg	0.010							< 0.010	
PCB 180	U	2815	mg/kg	0.010							< 0.010	
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10							< 0.10	
4,4-DDD	N	2840	mg/kg	0.20								< 0.20
4,4-DDT	N	2840	mg/kg	0.20								< 0.20
Total Phenols	M	2920	mg/kg	0.10			< 0.10			< 0.10		

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
ACM Type	U	2192		N/A	Fibres/Clumps
Asbestos Identification	U	2192		N/A	Chrysotile
Asbestos by Gravimetry	U	2192	%	0.001	0.006
Total Asbestos	U	2192	%	0.001	0.006
Moisture	N	2030	%	0.020	13
Stones and Removed Materials	N	2030	%	0.020	< 0.020
Soil Colour	N	2040		N/A	Black
Other Material	N	2040		N/A	Stones
Soil Texture	N	2040		N/A	Gravel
pH	M	2010		4.0	7.4
Electrical Conductivity (2:1)	N	2020	µS/cm	1.0	350
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	2.7
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.30
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50
Sulphate (Total)	U	2430	%	0.010	0.17
Arsenic	M	2455	mg/kg	0.5	12
Cadmium	M	2455	mg/kg	0.10	0.12
Copper	M	2455	mg/kg	0.50	110
Mercury	M	2455	mg/kg	0.05	0.09
Nickel	M	2455	mg/kg	0.50	34
Lead	M	2455	mg/kg	0.50	81
Zinc	M	2455	mg/kg	0.50	44
Chromium (Trivalent)	N	2490	mg/kg	1.0	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Organic Matter	M	2625	%	0.40	42
Aliphatic VPH >C5-C6	M	2780	µg/kg	0.05	< 0.05
Aliphatic VPH >C6-C7	M	2780	µg/kg	0.05	< 0.05
Aliphatic VPH >C7-C8	M	2780	µg/kg	0.05	< 0.05
Aliphatic VPH >C8-C10	M	2780	µg/kg	0.05	< 0.05
Total Aliphatic VPH >C5-C10	M	2780	µg/kg	0.25	< 0.25
Aromatic VPH >C5-C7	M	2780	µg/kg	0.05	< 0.05
Aromatic VPH >C7-C8	M	2780	µg/kg	0.05	< 0.05
Aromatic VPH >C8-C10	M	2780	µg/kg	0.05	< 0.05
Total Aromatic VPH >C5-C10	M	2780	µg/kg	0.25	< 0.25
Total VPH >C5-C10	M	2780	µg/kg	0.50	< 0.50

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Aliphatic EPH >C10-C12	M	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C12-C16	M	2690	mg/kg	1.00	< 1.0
Aliphatic EPH >C16-C21	M	2690	mg/kg	2.00	< 2.0
Aliphatic EPH >C21-C35	M	2690	mg/kg	3.00	< 3.0
Aliphatic EPH >C35-C40	N	2690	mg/kg	1.00	< 1.0
Total Aliphatic EPH >C10-C35	M	2690	mg/kg	5.00	< 5.0
Aromatic EPH >C10-C12	M	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C12-C16	M	2690	mg/kg	1.00	< 1.0
Aromatic EPH >C16-C21	N	2690	mg/kg	2.00	9.6
Aromatic EPH >C21-C35	M	2690	mg/kg	2.00	< 2.0
Aromatic EPH >C35-C40	N	2690	mg/kg	1.00	1.1
Total Aromatic EPH >C10-C35	M	2690	mg/kg	5.00	12
Total EPH >C10-C35	M	2690	mg/kg	10.00	14
Naphthalene	M	2700	mg/kg	0.10	1.2
Acenaphthylene	M	2700	mg/kg	0.10	0.10
Acenaphthene	M	2700	mg/kg	0.10	0.22
Fluorene	M	2700	mg/kg	0.10	0.25
Phenanthrene	M	2700	mg/kg	0.10	1.1
Anthracene	M	2700	mg/kg	0.10	0.19
Fluoranthene	M	2700	mg/kg	0.10	0.62
Pyrene	M	2700	mg/kg	0.10	0.67
Benzo[a]anthracene	M	2700	mg/kg	0.10	0.33
Chrysene	M	2700	mg/kg	0.10	0.92
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	0.70
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	0.28
Benzo[a]pyrene	M	2700	mg/kg	0.10	0.36
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	6.9
Dichlorodifluoromethane	U	2760	µg/kg	1.0	
Chloromethane	M	2760	µg/kg	1.0	
Vinyl Chloride	M	2760	µg/kg	1.0	
Bromomethane	M	2760	µg/kg	20	
Chloroethane	U	2760	µg/kg	2.0	
Trichlorofluoromethane	M	2760	µg/kg	1.0	
1,1-Dichloroethene	M	2760	µg/kg	1.0	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	
1,1-Dichloroethane	M	2760	µg/kg	1.0	
cis 1,2-Dichloroethene	M	2760	µg/kg	1.0	
Bromochloromethane	U	2760	µg/kg	5.0	
Trichloromethane	M	2760	µg/kg	1.0	
1,1,1-Trichloroethane	M	2760	µg/kg	1.0	
Tetrachloromethane	M	2760	µg/kg	1.0	
1,1-Dichloropropene	U	2760	µg/kg	1.0	
Benzene	M	2760	µg/kg	1.0	
1,2-Dichloroethane	M	2760	µg/kg	2.0	
Trichloroethene	N	2760	µg/kg	1.0	
1,2-Dichloropropane	M	2760	µg/kg	1.0	
Dibromomethane	M	2760	µg/kg	1.0	
Bromodichloromethane	M	2760	µg/kg	5.0	
cis-1,3-Dichloropropene	N	2760	µg/kg	10	
Toluene	M	2760	µg/kg	1.0	
Trans-1,3-Dichloropropene	N	2760	µg/kg	10	
1,1,2-Trichloroethane	M	2760	µg/kg	10	
Tetrachloroethene	M	2760	µg/kg	1.0	
1,3-Dichloropropane	U	2760	µg/kg	2.0	
Dibromochloromethane	U	2760	µg/kg	10	
1,2-Dibromoethane	M	2760	µg/kg	5.0	
Chlorobenzene	M	2760	µg/kg	1.0	
1,1,1,2-Tetrachloroethane	M	2760	µg/kg	2.0	
Ethylbenzene	M	2760	µg/kg	1.0	
m & p-Xylene	M	2760	µg/kg	1.0	
o-Xylene	M	2760	µg/kg	1.0	
Styrene	M	2760	µg/kg	1.0	
Tribromomethane	U	2760	µg/kg	1.0	
Isopropylbenzene	M	2760	µg/kg	1.0	
Bromobenzene	M	2760	µg/kg	1.0	
1,2,3-Trichloropropane	N	2760	µg/kg	50	
N-Propylbenzene	U	2760	µg/kg	1.0	
2-Chlorotoluene	M	2760	µg/kg	1.0	
1,3,5-Trimethylbenzene	M	2760	µg/kg	1.0	
4-Chlorotoluene	U	2760	µg/kg	1.0	
Tert-Butylbenzene	U	2760	µg/kg	1.0	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
1,2,4-Trimethylbenzene	M	2760	µg/kg	1.0	
Sec-Butylbenzene	U	2760	µg/kg	1.0	
1,3-Dichlorobenzene	M	2760	µg/kg	1.0	
4-Isopropyltoluene	U	2760	µg/kg	1.0	
1,4-Dichlorobenzene	M	2760	µg/kg	1.0	
N-Butylbenzene	U	2760	µg/kg	1.0	
1,2-Dichlorobenzene	M	2760	µg/kg	1.0	
1,2-Dibromo-3-Chloropropane	U	2760	µg/kg	50	
1,2,4-Trichlorobenzene	M	2760	µg/kg	1.0	
Hexachlorobutadiene	N	2760	µg/kg	1.0	
1,2,3-Trichlorobenzene	U	2760	µg/kg	2.0	
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	
Phenol	M	2790	mg/kg	0.50	
2-Chlorophenol	M	2790	mg/kg	0.50	
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	
2-Methylphenol	M	2790	mg/kg	0.50	
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	
Hexachloroethane	N	2790	mg/kg	0.50	
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	
4-Methylphenol	M	2790	mg/kg	0.50	
Nitrobenzene	M	2790	mg/kg	0.50	
Isophorone	M	2790	mg/kg	0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	
2,4-Dichlorophenol	M	2790	mg/kg	0.50	
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	
Naphthalene	M	2790	mg/kg	0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	
Hexachlorobutadiene	M	2790	mg/kg	0.50	
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	
2-Methylnaphthalene	M	2790	mg/kg	0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	
2-Chloronaphthalene	M	2790	mg/kg	0.50	
2-Nitroaniline	M	2790	mg/kg	0.50	
Acenaphthylene	M	2790	mg/kg	0.50	
Dimethylphthalate	M	2790	mg/kg	0.50	
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	
Acenaphthene	M	2790	mg/kg	0.50	
3-Nitroaniline	N	2790	mg/kg	0.50	
Dibenzofuran	M	2790	mg/kg	0.50	
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	
Fluorene	M	2790	mg/kg	0.50	
Diethyl Phthalate	M	2790	mg/kg	0.50	
4-Nitroaniline	M	2790	mg/kg	0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	
Azobenzene	M	2790	mg/kg	0.50	
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	
Hexachlorobenzene	M	2790	mg/kg	0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	
Phenanthrene	M	2790	mg/kg	0.50	
Anthracene	M	2790	mg/kg	0.50	
Carbazole	M	2790	mg/kg	0.50	
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	
Fluoranthene	M	2790	mg/kg	0.50	
Pyrene	M	2790	mg/kg	0.50	
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	
Benzo[a]anthracene	M	2790	mg/kg	0.50	
Chrysene	M	2790	mg/kg	0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	
Benzo[a]pyrene	M	2790	mg/kg	0.50	
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	

Results - Soil

Project: 17766 Uxbridge Skip Hire, Skip Lane, Harvil Road, Harefields

Client: Herts & Essex Site Investigations			**Chemtest Job No.:**		22-43780
Quotation No.:			**Chemtest Sample ID.:**		1545473
			Sample Location:		WS14
			Sample Type:		SOIL
			Top Depth (m):		1.20
			Date Sampled:		11-Nov-2022
			Asbestos Lab:		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	
PCB 28	U	2815	mg/kg	0.010	
PCB 52	U	2815	mg/kg	0.010	
PCB 90+101	U	2815	mg/kg	0.010	
PCB 118	U	2815	mg/kg	0.010	
PCB 153	U	2815	mg/kg	0.010	
PCB 138	U	2815	mg/kg	0.010	
PCB 180	U	2815	mg/kg	0.010	
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	
4,4-DDD	N	2840	mg/kg	0.20	
4,4-DDT	N	2840	mg/kg	0.20	
Total Phenols	M	2920	mg/kg	0.10	< 0.10

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2020	Electrical Conductivity	Electrical conductivity (EC) of aqueous extract or calcium sulphate solution for topsoil	Measurement of the electrical resistance of a 2:1 water/soil extract.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C44 Aromatics: >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21–C35, >C35– C44	Acetone/Heptane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10 Aromatics: >C5–C6, >C6–C8,>C8–C10	Water extraction / Headspace GCxGC FID detection
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2840	Organochlorine (O-Cl) Pesticides in Soils by GC-MS	Organochlorine pesticide representative suite including DDT and its metabolites, 'drins' and HCH etc, plus client specific determinands	Dichloromethane extraction / GC-MS

Test Methods

SOP	Title	Parameters included	Method summary
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

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Analytical Report Number : 22-89668

Project / Site name:	Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL	**Samples received on:**	12/10/2022
Your job number:	17766	**Samples instructed on/ Analysis started on:**	12/10/2022
Your order number:	17766	**Analysis completed by:**	21/10/2022
Report Issue Number:	1	**Report issued on:**	21/10/2022
Samples Analysed:	1 wac multi sample		

Signed:

Adam Fenwick
Technical Reviewer
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

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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.

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Waste Acceptance Criteria Analytical Results

Report No:	**22-89668**						
					Client:	**HESI**	
Location	**dge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB**						
Lab Reference (Sample Number)	2458281				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	12/10/2022				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS3						
Depth (m)	1.80						
Solid Waste Analysis							
TOC (%)**	1.9				3%	5%	6%
Loss on Ignition (%) **	5.5				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) $_{EH\_1D\_CU\_AL}$ #	190				500	--	--
Total PAH (WAC-17) (mg/kg)	14.3				100	--	--
pH (units)**	7.6				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	7.2				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.097	0.070		0.73	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	0.0011		0.011	0.5	10	70
Copper *	0.021	0.012		0.13	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.043	0.012		0.16	0.5	10	30
Nickel *	0.0098	0.0086		0.088	0.4	10	40
Lead *	0.0065	0.0069		0.069	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.023	0.0291		0.28	4	50	200
Chloride *	16	< 4.0		35	800	15000	25000
Fluoride*	1.2	0.89		9.3	10	150	500
Sulphate *	1700	600		7300	1000	20000	50000
TDS*	1400	570		6600	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	28	8.8		110	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	79						
Moisture (%)	21						
Stage 1							
Volume Eluate L2 (litres)	0.32						
Filtered Eluate VE1 (litres)	0.20						

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

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 22-89668
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL

* 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 *
2458281	WS3	None Supplied	1.8	Brown clay and sand with vegetation.

Analytical Report Number : 22-89668
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	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.	L019-UK/PL	D	NONE
Preparation WAC leachate		In-house method	L043-PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	ISO 17025
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil in Soil C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS

Analytical Report Number : 22-89668
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025

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 30oC.
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.

Analytical Report Number : 22-89668
Project / Site name: Uxbridge Skip Hlre, Skip Lane, Harvil Road, Harefields, Hillingdon, UB9 6JL

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS3	None Supplied	M	2458281	b	BTEX (Sum of BTEX compounds) in soil	L073B-PL	b

Annex C: Generic Assessment Criteria and Screened Data

Human Health Generic Assessment Criteria

Contaminant of Concern	Units	Generic Assessment Criteria (mg/kg)				Source
		Residential (wHP)	Residential (woHP)	POS (Residential)	Commercial	
Heavy Metals						
Arsenic	mg/kg	37	40	79	640	S4UL
Boron	mg/kg	290	11000	21000	240000	S4UL
Cadmium	mg/kg	11	85	120	190	S4UL
Chromium (hexavalent)	mg/kg	6	6	7.7	33	S4UL
Chromium (III)	mg/kg	910	910	1500	8600	S4UL
Chromium	mg/kg	910	910	1500	8600	S4UL
Copper	mg/kg	2400	7100	12000	68000	S4UL
Lead	mg/kg	200	310	630	2330	C4SL
Mercury	mg/kg	40	56	120	1100	S4UL
Nickel	mg/kg	180	180	230	980	S4UL
Selenium	mg/kg	250	430	1100	12000	S4UL
Zinc	mg/kg	3700	40000	81000	730000	S4UL
Polycyclic Aromatic Hydrocarbons						
Naphthalene	mg/kg	2.3	2.3	4900	190	S4UL
Acenaphthylene	mg/kg	170	2900	15000	83000	S4UL
Acenaphthene	mg/kg	210	3000	15000	84000	S4UL
Fluorene	mg/kg	170	2800	9900	63000	S4UL
Phenanthrene	mg/kg	95	1300	3100	22000	S4UL
Anthracene	mg/kg	2400	31000	74000	520000	S4UL
Fluoranthene	mg/kg	280	1500	3100	23000	S4UL
Pyrene	mg/kg	620	3700	7400	54000	S4UL
Benzo(a)anthracene	mg/kg	7.2	11	29	170	S4UL
Chrysene	mg/kg	15	30	57	350	S4UL
Benzo(b)fluoranthene	mg/kg	2.6	3.9	7.1	44	S4UL
Benzo(k)fluoranthene	mg/kg	77	110	190	1200	S4UL
Benzo(a)pyrene	mg/kg	2.2	3.2	5.7	35	S4UL
Indeno(1,2,3-cd) pyrene	mg/kg	27	45	82	500	S4UL
Dibenz(a,h)anthracene	mg/kg	0.24	0.31	0.57	3.5	S4UL
Benzo(ghi)perylene	mg/kg	320	360	640	3900	S4UL
Monoaromatics						
Benzene	µg/kg	87	380	72000	27000	S4UL
Toluene	µg/kg	130000	880000	56000000	56000000	S4UL
Ethylbenzene	µg/kg	47000	83000	24000000	5700000	S4UL
p & m-xylene	µg/kg	56000	79000	41000000	5900000	S4UL
o-xylene	µg/kg	60000	88000	41000000	6600000	S4UL
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	49000	73000	-	7900000	EIC/AGS/CL:AIRE
Petroleum Hydrocarbons (Aliphatic)						
TPH-CWG – Aliphatic >EC5 – EC6	mg/kg	42	42	570000	3200	S4UL
TPH-CWG – Aliphatic >EC6 – EC 8	mg/kg	100	100	600000	7800	S4UL
TPH-CWG – Aliphatic >EC8 – EC10	mg/kg	27	27	13000	2000	S4UL
TPH-CWG – Aliphatic >EC10 – EC12	mg/kg	130	130	13000	9700	S4UL
TPH-CWG – Aliphatic >EC12 – EC16	mg/kg	1100	1100	13000	59000	S4UL
TPH-CWG – Aliphatic >EC16 – EC21	mg/kg	65000	65000	250000	1600000	S4UL

TPH-CWG – Aliphatic >EC21 – EC35	mg/kg	65000	65000	250000	1600000	S4UL
Petroleum Hydrocarbons (Aromatic)						
TPH-CWG – Aromatic >EC5 – EC7	mg/kg	70	370	56000	26000	S4UL
TPH-CWG – Aromatic >EC7 – EC8	mg/kg	130	860	56000	56000	S4UL
TPH-CWG – Aromatic >EC8 – EC10	mg/kg	34	47	5000	3500	S4UL
TPH-CWG – Aromatic >EC10 – EC12	mg/kg	74	250	5000	16000	S4UL
TPH-CWG – Aromatic >EC12 – EC16	mg/kg	140	1800	5100	36000	S4UL
TPH-CWG – Aromatic >EC16 – EC21	mg/kg	260	1900	3800	28000	S4UL
TPH-CWG – Aromatic >EC21 – EC35	mg/kg	1100	1900	3800	28000	S4UL
Volatile Organic Compounds						
Chloromethane	µg/kg	8.3	8.5	-	1000	EIC/AGS/CL:AIRE
Chloroethane	µg/kg	8300	8400	-	960000	EIC/AGS/CL:AIRE
Bromomethane	µg/kg	-	-	-	-	-
Vinyl Chloride	µg/kg	0.64	0.77	3500	59	S4UL
Trichlorofluoromethane	µg/kg	-	-	-	-	-
1,1-Dichloroethene	µg/kg	230	230	-	26000	EIC/AGS/CL:AIRE
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	110	120	-	14000	EIC/AGS/CL:AIRE
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	49000	73000	-	7900000	EIC/AGS/CL:AIRE
1,1-Dichloroethane	µg/kg	2400	2500	-	280000	EIC/AGS/CL:AIRE
2,2-Dichloropropane	µg/kg	-	-	-	-	-
Trichloromethane	µg/kg	910	1200	2500000	99000	S4UL
1,1,1-Trichloroethane	µg/kg	8800	9000	140000000	660000	S4UL
1,2-Dichloroethane	µg/kg	7.1	9.2	29000	670	S4UL
1,1-Dichloropropene	µg/kg	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	190	190	-	22000	EIC/AGS/CL:AIRE
Benzene	µg/kg	87	380	72000	27000	S4UL
Tetrachloromethane	µg/kg	26	26	890000	2900	S4UL
1,2-Dichloropropane	µg/kg	24	24	-	3300	EIC/AGS/CL:AIRE
Trichloroethene	µg/kg	16	17	120000	1200	S4UL
Dibromomethane	µg/kg	-	-	-	-	-
Bromodichloromethane	µg/kg	16	19	-	2100	EIC/AGS/CL:AIRE
Cis-1,3-dichloropropene	µg/kg	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	-	-	-	-	-
Toluene	µg/kg	130000	880000	56000000	56000000	S4UL
1,1,2-Trichloroethane	µg/kg	600	880	-	94000	EIC/AGS/CL:AIRE
1,3-Dichloropropane	µg/kg	-	-	-	-	-
Dibromochloromethane	µg/kg	-	-	-	-	-
Tetrachloroethene	µg/kg	180	180	1400000	19000	S4UL
1,2-Dibromoethane	µg/kg	-	-	-	-	-
Chlorobenzene	µg/kg	460	460	11000000	56000	S4UL
1,1,1,2-Tetrachloroethane	µg/kg	1200	1500	1400000	110000	S4UL
Ethylbenzene	µg/kg	47000	83000	24000000	5700000	S4UL
p & m-Xylene	µg/kg	56000	79000	41000000	5900000	S4UL
Styrene	µg/kg	8100	35000	-	3300000	EIC/AGS/CL:AIRE
Tribromomethane	µg/kg	-	-	-	-	-
o-Xylene	µg/kg	60000	88000	41000000	6600000	S4UL

1,1,2,2-Tetrachloroethane	µg/kg	1600	3900	1400000	270000	S4UL
Isopropylbenzene	µg/kg	11000	12000	-	1400000	EIC/AGS/CL:AIRE
Bromobenzene	µg/kg	870	910	-	97000	EIC/AGS/CL:AIRE
n-Propylbenzene	µg/kg	34000	40000	-	4100000	EIC/AGS/CL:AIRE
2-Chlorotoluene	µg/kg	-	-	-	-	-
4-Chlorotoluene	µg/kg	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	-	-	-	-	-
tert-Butylbenzene	µg/kg	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	350	410	-	42000	EIC/AGS/CL:AIRE
sec-Butylbenzene	µg/kg	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	400	440	300000	30000	S4UL
p-Isopropyltoluene	µg/kg	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	23000	24000	90000000	2000000	S4UL
1,4-Dichlorobenzene	µg/kg	61000	61000	17000000	4400000	S4UL
Butylbenzene	µg/kg	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	2600	2600	15000000	220000	S4UL
Hexachlorobutadiene	µg/kg	290	320	25000	31000	S4UL
1,2,3-Trichlorobenzene	µg/kg	1500	1500	1800000	102000	S4UL

Key	
Source Reference	**Document**
S4UL	Nathanail, CP et al (2015) The LQM/CIEH S4ULs for human health risk assessment.
C4SL	Department for Environment, Food and Rural Affairs (2014) SP1010: Development of category 4 screening levels for assessment of land affected by contamination – policy companion document.
EIC/AGS/CL:AIRE	Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environments (2009) The EIC/AGS/CL:AIRE soil generic assessment criteria for human health risk assessment.

Notes:

The above GAC are for guidance only when assessing risk to human health receptors for specific development scenarios.

The absence of GAC for a substance does not necessarily imply there is no risk.

Some substances may be known by alternative names.

GAC given for organic compounds are based on the asusmption of 1% soil organic matter.

Abbreviations:

GAC	Generic Assessment Criiteria
wHP	With homegrown produce
woHP	Without homegrown produce
POS	Public open space

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
Asbestos Identification	%	Detected	Not Detected	Not Detected	Detected	Not Detected	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected	Detected	Detected
Asbestos Type	Type	-	-	-	Chrysotile	-	-	Chrysotile	-	-	-	Chrysotile	-	-	-	-	-	-	Chrysotile	Chrysotile
Asbestos Quantification	%	-	-	-	0.229	-	-	<0.001	-	-	-	0.002	-	-	-	-	-	-	0.001	0.006
Total Phenols	%	760	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	<0.1	-	-	<0.1
Speciated PAHs																				
Naphthalene	mg/kg	190	-	< 0.05	-	-	-	< 0.05	-	< 0.05	-	-	-	< 0.10	-	-	1	-	-	1.2
Acenaphthylene	mg/kg	83000	-	< 0.05	-	-	-	< 0.05	-	0.32	-	-	-	< 0.10	-	-	0.23	-	-	0.1
Acenaphthene	mg/kg	84000	-	< 0.05	-	-	-	< 0.05	-	0.26	-	-	-	< 0.10	-	-	0.4	-	-	0.22
Fluorene	mg/kg	63000	-	< 0.05	-	-	-	< 0.05	-	0.42	-	-	-	< 0.10	-	-	0.43	-	-	0.25
Phenanthrene	mg/kg	22000	-	0.28	-	-	-	< 0.05	-	5.8	-	-	-	< 0.10	-	-	1.4	-	-	1.1
Anthracene	mg/kg	520000	-	< 0.05	-	-	-	< 0.05	-	1.3	-	-	-	< 0.10	-	-	0.24	-	-	0.19
Fluoranthene	mg/kg	23000	-	0.7	-	-	-	< 0.05	-	10	-	-	-	0.28	-	-	0.73	-	-	0.62
Pyrene	mg/kg	54000	-	0.66	-	-	-	< 0.05	-	9.3	-	-	-	0.34	-	-	0.84	-	-	0.67
Benzo(a)anthracene	mg/kg	170	-	0.32	-	-	-	< 0.05	-	4.3	-	-	-	< 0.10	-	-	0.46	-	-	0.33
Chrysene	mg/kg	350	-	0.4	-	-	-	< 0.05	-	4.6	-	-	-	< 0.10	-	-	1.1	-	-	0.92
Benzo(b)fluoranthene	mg/kg	44	-	0.36	-	-	-	< 0.05	-	4.9	-	-	-	< 0.10	-	-	0.71	-	-	0.7
Benzo(k)fluoranthene	mg/kg	1200	-	0.25	-	-	-	< 0.05	-	2.2	-	-	-	< 0.10	-	-	0.28	-	-	0.28
Benzo(a)pyrene	mg/kg	35	-	0.35	-	-	-	< 0.05	-	4	-	-	-	< 0.10	-	-	0.54	-	-	0.36
Indeno(1,2,3-cd)pyrene	mg/kg	500	-	0.2	-	-	-	< 0.05	-	2.1	-	-	-	< 0.10	-	-	0.37	-	-	<0.1
Dibenz(a,h)anthracene	mg/kg	3.5	-	< 0.05	-	-	-	< 0.05	-	0.49	-	-	-	< 0.10	-	-	0.27	-	-	<0.1
Benzo(ghi)perylene	mg/kg	3900	-	0.25	-	-	-	< 0.05	-	2.5	-	-	-	< 0.10	-	-	0.89	-	-	<0.1
Total PAH																				
Speciated Total EPA-16 PAHs	mg/kg	N/A	-	3.77	-	-	-	<0.80	-	52.3	-	< 2.0	-	< 2.0	-	-	9.9	-	-	6.9
Heavy Metals / Metalloids																				
Arsenic	mg/kg	640	-	11	-	-	-	12	-	29	-	-	-	9	-	-	20	-	-	12
Boron	mg/kg	240000	-	2	-	-	-	3.1	-	1.8	-	-	-	1.6	-	-	2	-	-	2.7
Cadmium	mg/kg	190	-	0.6	-	-	-	< 0.2	-	< 0.2	-	-	-	<0.1	-	-	<0.10	-	-	0.12
Chromium (hexavalent)	mg/kg	33	-	< 1.8	-	-	-	< 1.8	-	< 1.8	-	-	-	<0.5	-	-	<0.5	-	-	<0.5
Chromium (III)	mg/kg	8600	-	27	-	-	-	30	-	47	-	-	-	23	-	-	52	-	-	20
Copper	mg/kg	68000	-	25	-	-	-	19	-	75	-	-	-	19	-	-	20	-	-	110
Lead	mg/kg	2300	-	88	-	-	-	26	-	170	-	-	-	11	-	-	34	-	-	81
Elemental Mercury	mg/kg	58	-	< 0.3	-	-	-	< 0.3	-	< 0.3	-	-	-	<0.05	-	-	0.05	-	-	0.09
Nickel	mg/kg	980	-	17	-	-	-	17	-	19	-	-	-	20	-	-	41	-	-	34
Zinc	mg/kg	730000	-	190	-	-	-	58	-	180	-	-	-	45	-	-	74	-	-	44
Monoaromatics																				
Benzene	µg/kg	27000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
Toluene	µg/kg	56000000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
Ethylbenzene	µg/kg	5700000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
p & m-xylene	µg/kg	5900000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
o-xylene	µg/kg	6600000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	7900000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	-	-	-	-	-	-	0
Petroleum Hydrocarbons																				

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	3200	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	< 0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	7800	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	< 0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	2000	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	<0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	9700	-	< 1.0	-	-	-	-	5.4	< 1.0	-	-	-	0.11	-	-	<2	-	-	<2
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	59000	-	< 2.0	-	-	-	-	16	5.9	-	-	-	1.5	-	-	<1	-	-	<1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	1600000	-	< 8.0	-	-	-	-	29	9.4	-	-	-	< 2.0	-	-	<2	-	-	<2
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	1600000	-	< 8.0	-	-	-	-	68	41	-	-	-	< 3.0	-	-	3.3	-	-	<3
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	N/A	-	< 10	-	-	-	-	120	57	-	-	-	< 5.0	-	-	<5	-	-	<5
Petroleum Hydrocarbons																				
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	26000	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	< 0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	56000	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	< 0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	3500	-	< 0.001	-	-	-	-	< 0.001	< 0.001	-	-	-	< 0.05	-	-	<0.05	-	-	<0.05
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	16000	-	< 1.0	-	-	-	-	< 1.0	< 1.0	-	-	-	24	-	-	<1	-	-	<1
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	36000	-	< 2.0	-	-	-	-	< 2.0	< 2.0	-	-	-	3.3	-	-	<1	-	-	<1
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	28000	-	< 10	-	-	-	-	< 10	17	-	-	-	15	-	-	8.1	-	-	9.6
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	28000	-	< 10	-	-	-	-	< 10	34	-	-	-	4.7	-	-	2.8	-	-	<2
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	N/A	-	< 10	-	-	-	-	< 10	51	-	-	-	47	-	-	10.9	-	-	9.6
VOCs																				
Chloromethane	µg/kg	1000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Chloroethane	µg/kg	960000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Bromomethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Vinyl Chloride	µg/kg	59	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 20	-	-
Trichlorofluoromethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 2.0	-	-
1,1-Dichloroethene	µg/kg	26000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Cis-1,2-dichloroethene	µg/kg	14000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	7900000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,1-Dichloroethane	µg/kg	280000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
2,2-Dichloropropane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 5.0	-	-
Trichloromethane	µg/kg	99000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,1,1-Trichloroethane	µg/kg	660000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,2-Dichloroethane	µg/kg	670	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,1-Dichloropropene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Trans-1,2-dichloroethene	µg/kg	22000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Benzene	µg/kg	27000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 2.0	-	-
Tetrachloromethane	µg/kg	2900	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,2-Dichloropropane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Trichloroethene	µg/kg	1200	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Dibromomethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 5.0	-	-
Bromodichloromethane	µg/kg	2000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 10	-	-
Cis-1,3-dichloropropene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Trans-1,3-dichloropropene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 10	-	-
Toluene	µg/kg	56000000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 10	-	-
1,1,2-Trichloroethane	µg/kg	94000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,3-Dichloropropane	µg/kg	3300	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 2.0	-	-

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
Dibromochloromethane	µg/kg	270000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 10	-	-
Tetrachloroethene	µg/kg	19000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Chlorobenzene	µg/kg	56000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 2.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	110000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Ethylbenzene	µg/kg	5700000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
p & m-Xylene	µg/kg	5900000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Styrene	µg/kg	3300000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Tribromomethane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
o-Xylene	µg/kg	6600000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	270000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Isopropylbenzene	µg/kg	1400000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 50	-	-
Bromobenzene	µg/kg	97000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
n-Propylbenzene	µg/kg	4100000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
2-Chlorotoluene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
4-Chlorotoluene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,3,5-Trimethylbenzene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
tert-Butylbenzene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,2,4-Trimethylbenzene	µg/kg	42000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
sec-Butylbenzene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,3-Dichlorobenzene	µg/kg	30000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
p-Isopropyltoluene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,2-Dichlorobenzene	µg/kg	2000000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,4-Dichlorobenzene	µg/kg	4400000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Butylbenzene	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 50	-	-
1,2-Dibromo-3-chloropropane	µg/kg	-	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
1,2,4-Trichlorobenzene	µg/kg	220000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-
Hexachlorobutadiene	µg/kg	31000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 2.0	-	-
1,2,3-Trichlorobenzene	µg/kg	102000	-	-	-	-	-	-	-	< 1.0	-	-	-	-	-	-	-	< 1.0	-	-

SVOCs																			
N-Nitrosodimethylamine	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Phenol	mg/kg	760	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
2-Chlorophenol	mg/kg	3500	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Bis-(2-Chloroethyl)Ether	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
1,3-Dichlorobenzene	mg/kg	30	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
1,4-Dichlorobenzene	mg/kg	2000	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
1,2-Dichlorobenzene	mg/kg	4400	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
2-Methylphenol	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Bis(2-Chloroisopropyl)Ether	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
Hexachloroethane	mg/kg	-	-	-	-	-	-	-	-	< 0.05	-	-	-	-	-	-	-	< 0.50	-	-
N-Nitrosodi-n-propylamine	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
4-Methylphenol	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Nitrobenzene	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Isophorone	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
2-Nitrophenol	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
2,4-Dimethylphenol	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
Bis(2-Chloroethoxy)Methane	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
2,4-Dichlorophenol	mg/kg	-	-	-	-	-	-	-	-	< 0.05	-	-	-	-	-	-	-	< 0.50	-	-
1,2,4-Trichlorobenzene	mg/kg	220	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
Naphthalene	mg/kg	190	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
4-Chloroaniline	mg/kg	3500	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Hexachlorobutadiene	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
4-Chloro-3-Methylphenol	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
2-Methylnaphthalene	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
4-Nitrophenol	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Hexachlorocyclopentadiene	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
2,4,6-Trichlorophenol	mg/kg	3500	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
2,4,5-Trichlorophenol	mg/kg	3500	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
2-Chloronaphthalene	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
2-Nitroaniline	mg/kg	-	-	-	-	-	-	-	-	< 0.3	-	-	-	-	-	-	-	< 0.50	-	-
Acenaphthylene	mg/kg	83000	-	-	-	-	-	-	-	0.32	-	-	-	-	-	-	-	< 0.50	-	-
Dimethylphthalate	mg/kg		-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
2,6-Dinitrotoluene	mg/kg	-	-	-	-	-	-	-	-	< 0.1	-	-	-	-	-	-	-	< 0.50	-	-
Acenaphthene	mg/kg	84000	-	-	-	-	-	-	-	0.26	-	-	-	-	-	-	-	< 0.50	-	-
3-Nitroaniline	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Dibenzofuran	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
4-Chlorophenylphenylether	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
2,4-Dinitrotoluene	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Fluorene	mg/kg	63000	-	-	-	-	-	-	-	0.42	-	-	-	-	-	-	-	< 0.50	-	-
Diethyl Phthalate	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
4-Nitroaniline	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
2-Methyl-4,6-Dinitrophenol	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Azobenzene	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
4-Bromophenylphenyl Ether	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Hexachlorobenzene	mg/kg	110	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Pentachlorophenol	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Phenanthrene	mg/kg	22000	-	-	-	-	-	-	-	5.8	-	-	-	-	-	-	-	< 0.50	-	-
Anthracene	mg/kg	520000	-	-	-	-	-	-	-	1.3	-	-	-	-	-	-	-	< 0.50	-	-
Carbazole	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Di-N-Butyl Phthalate	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Fluoranthene	mg/kg	23000	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	< 0.50	-	-
Pyrene	mg/kg	54000	-	-	-	-	-	-	-	9.3	-	-	-	-	-	-	-	< 0.50	-	-
Butylbenzyl Phthalate	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Benzo[a]anthracene	mg/kg	170	-	-	-	-	-	-	-	4.3	-	-	-	-	-	-	-	< 0.50	-	-
Chrysene	mg/kg	350	-	-	-	-	-	-	-	4.6	-	-	-	-	-	-	-	< 0.50	-	-
Bis(2-Ethylhexyl)Phthalate	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Di-N-Octyl Phthalate	mg/kg	-	-	-	-	-	-	-	-	< 0.2	-	-	-	-	-	-	-	< 0.50	-	-
Benzo[b]fluoranthene	mg/kg	44	-	-	-	-	-	-	-	4.9	-	-	-	-	-	-	-	< 0.50	-	-
Benzo[k]fluoranthene	mg/kg	1200	-	-	-	-	-	-	-	2.2	-	-	-	-	-	-	-	< 0.50	-	-
Benzo[a]pyrene	mg/kg	35	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	< 0.50	-	-
Indeno(1,2,3-c,d)Pyrene	mg/kg	500	-	-	-	-	-	-	-	2.1	-	-	-	-	-	-	-	< 0.50	-	-
Dibenz(a,h)Anthracene	mg/kg	3.5	-	-	-	-	-	-	-	0.49	-	-	-	-	-	-	-	< 0.50	-	-
Benzo[g,h,i]perylene	mg/kg	3900	-	-	-	-	-	-	-	2.5	-	-	-	-	-	-	-	< 0.50	-	-

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
PCBs																			
PCB 28	mg/kg	-	-	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	<0.01	-	-
PCB 52	mg/kg	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	<0.01	-	-
PCB 90 + 101	mg/kg	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	-	-	<0.01	-	-
PCB 118	mg/kg	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-	-	-	<0.01	-	-
PCB153	mg/kg	-	-	-	-	-	-	-	-	0.003	-	-	-	-	-	-	-	<0.01	-	-
PCB138	mg/kg	-	-	-	-	-	-	-	-	0.006	-	-	-	-	-	-	-	<0.01	-	-
PCB180	mg/kg	-	-	-	-	-	-	-	-	<0.001	-	-	-	-	-	-	-	<0.01	-	-
Total PCBs	mg/kg	240	-	-	-	-	-	-	-	0.028	-	-	-	-	-	-	-	<0.1	-	-

Table I
Skip Lane, Harefield
552232.0000.0000
Soil Screened Results - GAC Commercial

TRC Environmental - Chemical Assessment Record	
Contract Engineer	Lauren Sadowski
Project/Site Name	Skip Lane, Harefield
Project Number	552232.0000.0000

Sample Reference	WS1	WS1	WS2	WS2	WS2	WS3	WS3	WS4	WS4	WS5	WS6	WS7	WS8	WS9	WS10	WS11	WS12	WS13
Depth	0.6	1.2	0.3	1.5	3	0.8	1.8	0.5	1.5	1	0.6	1.2	0.5	0.5	0.7	0.4	2	1.2
Date Sampled	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	12/10/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022	11/11/2022
Time Taken																		

Analytical Parameter (Soil Analysis)	Units	S4UL																	
Pesticides																			
4,4 - DDD	mg/kg	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	-
4,4 DDT	mg/kg	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.2	-