



Lidl Great Britain Limited

Geo-Environmental Investigation Report

Lidl, 440 Hollinwood Avenue, Moston, Manchester

November 2024

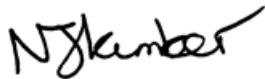


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Drawings

24-1990-P/01/A	Site Location Plan
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7123-SMR-66-ZZ-DR-A-8003-S2-P3	Proposed Site Plan Option 2

Appendices

Appendix A	Photographs
Appendix B	Exploratory Hole Records
Appendix C	Chemical Laboratory Analysis Results
Appendix D	Geotechnical Laboratory Analysis Results
Appendix E	OB-Screen Human Health Screening Assessment
Appendix F	Ground Gas Monitoring Results
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Summary

Development Proposals	The site currently comprises a large industrial/warehouse unit and associated offices that occupy a large proportion of the site in the east, a substantial hardstanding area in the west, parking areas in the south and south-west and a smaller garage/warehouse unit in the north-western corner. The proposals are to demolish the existing buildings to construct a Lidl store with associated infrastructure including access and parking areas.
Site Setting and History	<p>The site area is approximately 0.81 hectares, centred around National Grid Reference: 388570, 403200. It is irregular in shape and is shown on the appended Site Location Plan 24-1990-P/01/A.</p> <p>A review of the historical maps indicates that the site was present as open fields at the time of the first mapping series in 1848 and remained this way until the 1933 mapping when the 'Atlas engineering works' were first mapped on site. The mapping series reflects that since this initial development, the site has operated as an industrial unit with a slight expansion highlighted in the 1951-1952 mapping series, with the works footprint expanding and outbuildings being added. In the 1986 mapping, the works were relabelled as warehouses and expanded to a larger footprint with a more broadly square shape, suggesting possible demolition and redevelopment. As well as this, tanks are listed in the north-west of the site, adjacent to the outbuilding in the north-westerly corner. Later mapping series show the site being used by HGVs since at least 2000, presumably earlier than this also. There is evidence of historical vehicle maintenance on site in the north-west corner and bulk fuel storage for these vehicles has also been maintained on site, currently and historically.</p>
Potential Contaminants from Desk Study	Potential contaminants include metals, PAH's, TPH, BTEX, VOC's and asbestos. Associated ground gases such as methane, carbon dioxide, hydrogen sulphide, and carbon monoxide may also be present. Elevated pH and water-soluble sulphate concentrations may also be present within the Made Ground and natural strata.
Ground Investigation Methodology	<p>10No. window sample boreholes (WS01-WS10) were advanced across the site to depths of up to 5.00m bgl, using a small, tracked, light percussion window sampling rig. Window sample boreholes were advanced across external areas on the 15th and 16th October 2024 and across internal areas on the 16th October 2024. The internal floor and external hardstanding were reinstated upon completion with either concrete or tarmacadam.</p> <p>Four TRL DCP's (DCP01-DCP04) were undertaken within the proposed car parking and access areas in order to calculate indicative CBR values on the 15th and 16th October 2024.</p> <p>Gas and groundwater monitoring wells were installed within WS01, WS04 and WS06 to depths of up to 5.00m bgl.</p>
Encountered Strata	Beneath a layer of Made Ground, Devensian Till was encountered. The Till was composed mainly of slightly gravelly, sandy clays with localised sand layers. The bedrock was not encountered during this investigation.
Contamination Assessment	<p>Representative soil samples from across the site have been scheduled for a suite of analyses. The analysis has included a suite comprising Metals, Cyanide, Phenol, PAH's, TPH, BTEX and Asbestos.</p> <p>One sample recorded elevated PAHs as well as a positive detection of asbestos containing materials (ACM), with a quantification of 0.132%. This sample (WS07 at 0.60m bgl) is located beneath the proposed building footprint within a layer of Made Ground found between 0.50m and 0.70m bgl. The affected Made Ground is a thin layer, which will likely be stripped during the formation of the foundations. Due to its asbestos content, it will likely form hazardous waste. The extent of the affected material is unknown, it is recommended that this area is delineated either pre or post demolition works.</p> <p>The results of the pH and water-soluble sulphate testing indicate that the risk posed to future buried concrete structures is low.</p>
Ground Gas Risk Assessment	<p>In line with the recommendations provided in CIRIA 665, a GSV of 0.82 l/hr has been calculated for carbon dioxide and a GSV of 2.09 l/hr has been calculated for methane. The GSV's for both carbon dioxide and methane classify the site as 'Characteristic Situation 3' (Moderate Risk).</p> <p>The data from the Envirocheck Report indicates that no Radon protective measures are required on site.</p>



Waste Disposal	<p>The reuse of soils as engineered fill should be undertaken in accordance with an appropriate Environment Agency licence as defined in the statutory guidance on the 'Definition of Waste' or CL:AIRE Code of Practice.</p> <p>A level 1 Waste Characterisation of the soil total values would indicate a Non-Hazardous Waste Classification for the majority of the site. However, given the presence of Chrysotile and Amosite within WS07 at 0.60m bgl at a concentration of 0.132% and Benzo(a)pyrene at a concentration greater than 50mg/kg, this material would be deemed as Hazardous Waste. Should intact fragments of chrysotile or amosite asbestos be identified during the demolition works then these should be handpicked and removed from site as Hazardous Waste with the soil matrix also screened and if positive, quantified to assess its waste classification.</p> <p>Waste Acceptance Criteria (WAC) analysis has been carried out on three samples of Made Ground. The sample of Made Ground from WS02 at 0.85m bgl exceeds the inert threshold for Total PAH, pH, Copper and Antimony. This result indicates that some of the Made Ground is likely to be classified as Non-Hazardous in the absence of Hazardous material outlined above.</p> <p>The natural strata on site would be classified as default Inert Waste.</p> <p>Given the variability of the above results, it is recommended that any excavated material from site should be stockpiled and sampled prior to removal to facilitate further characterisation and classification, including WAC analysis to confirm the materials' classification.</p>
Geotechnical Assessment	<p>Made Ground is not considered to be a suitable founding stratum. Therefore, the foundations must extend into the cohesive natural strata below. However, based on the SPT data, the underlying natural strata is not suitable for conventional footings. Instead, short piles to at least 5m bgl will be required.</p> <p>In order to confirm deeper ground conditions for pile design further ground investigation comprising deep cable percussive boreholes is recommended post demolition. It is suggested that 3No. boreholes are drilled to depths of between 10m and 12m. In situ Standard Penetration Tests should be conducted when advancing the boreholes and collected soil samples submitted for appropriate geotechnical laboratory testing.</p> <p>With a piled foundation solution being adopted, it is likely that a suspended floor slab would be most appropriate. Significant excavation, compaction and supplementation will be needed for a ground bearing slab to be considered and will require additional consideration of tree influence, and the removal of the organic material recorded within the near surface strata.</p> <p>Significant excavation, supplementation and re-compaction, potentially including ground improvement would be needed and the removal of the organic material recorded within the near surface strata if a raft foundation solution was to be considered.</p> <p>The results indicate that both the Made Ground and the natural strata beneath the site fall within Design Sulphate Class DS-1 and ACEC (Aggressive Chemical Environment for Concrete) Class AC-1d.</p>
Recommendations	<p>We recommend the following steps be taken to enable the proposed development to progress:</p> <ul style="list-style-type: none"> • Undertake a tree survey so that the potential impact on proposed foundations can be fully assessed given the presence of natural, cohesive strata. • Additional boreholes to delineate the extent of the PAH and asbestos contamination around borehole WS07 either pre or post demolition. • In order to confirm deeper ground conditions for pile design further ground investigation comprising deep cable percussive boreholes is recommended post demolition. It is suggested that 3No. boreholes are drilled to depths of between 10m and 12m. • Design and install ground gas protection measures for a 'Characteristic Situation 3' (Moderate Risk) ground gas scenario. • Submission of this report and assessment to the Local Authority Environmental Health/Contaminated Land Officer and water supply authority.



1 Introduction

Obsidian Geo-Consulting Ltd (Obsidian) was commissioned by Lidl Great Britain Ltd (the Client) to carry out a Geo-Environmental Ground Investigation for a proposed store at 440 Hollinwood Avenue, Moston, Manchester.

The site currently comprises a large industrial/warehouse unit and associated offices that occupy a large proportion of the site in the east, a substantial hardstanding area in the west, parking areas in the south and south-west and a smaller garage/warehouse unit in the north-western corner. The proposals are to demolish the existing buildings to construct a Lidl store with associated infrastructure including access and parking areas.

For the preparation of this document, we have been provided with the following plans and documents:

- Proposed site plan 7123-SMR-66-ZZ-DR-A-8003-S2-P3
- Coal Mining Search (500883786.1)
- Drainage and Water Search (500981792.1)
- Enviro Flood Combined Search (500934611.1)
- Groundwise Utility Report 35185DM – GWS
- Local Search (500935522.1)

Obsidian have previously undertaken a Geo-Environmental Desk Study Report Ref. 24-1990-P-R1 dated September 2024.

1.1 Objective

The objective of this assessment is to support the planning application for the development of the site by identifying any potentially significant constraints to future proposed developments associated with the likely ground conditions prevalent beneath the site and the surrounding area and to identify any potential areas of environmental liability or geotechnical constraints associated with the site.

1.2 Scope

This investigation and assessment were carried out to an agreed brief as set out in Obsidian's proposal (ref. SD/24-1990-Q/L01 dated 12th August 2024). The instructed scope of works includes the following:

- Two days of window sampling using a tracked window sampling rig.
- Installation of gas/groundwater monitoring wells within three of the window sample holes, and four return gas monitoring visits.
- Four TRL probes to calculate CBR values.
- Chemical laboratory analysis of selected soil and groundwater samples.
- Geotechnical laboratory analysis of selected soil samples.
- Production of a geo-environmental interpretative report.



1.3 Limitations

This report has been prepared by Obsidian with all reasonable skill, care and attention within the terms of the Contract with the Client and taking account of the information made available by the Client, as well as the manpower and resources devoted to it by agreement with the Client. Obsidian disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above Contract.

This report has been produced on behalf of the Client and no responsibility is accepted to any Third Party for all or any part. This report should not be relied upon or transferred to any other parties without the express written authorisation of Obsidian. If any unauthorised Third Party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

Any plans appended to this report should not be used for scaling purposes.

2 The Site

2.1 Site Location

The site is located off Hollinwood Avenue, Moston and is accessed via a gate in the southwest corner of site. The site is approximately 0.81 hectares in area and is centred on National Grid Reference 388570, 403200.

The site is irregular in shape and is shown on the appended Site Location Plan 24-1990-P/01/A.

2.2 Site Description

The site is accessed through a double gate located on the southern boundary of the site, connecting with Hollinwood Avenue to the south. A car park covers the majority of the southern area of the site with peripheral soft landscaping the south and east. A large building comprising both offices and warehousing then covers the majority of the central, northern and eastern areas of the site with offices present within the southern third of the building and warehousing occupying the remainder.

The western area of the site is predominantly covered with concrete hardstanding. A former vehicle repair building is also located in the north-western corner of the site. We understand from anecdotal evidence that this was more recently used for storage and warehousing. There were former, above ground fuel storage tanks (AGST's) located immediately to the east of the small building; comprising a 20,000-litre diesel tank and along the northern boundary a 4000-litre liquid petroleum gas tank, however these have since been removed. There is however a newer AGST located adjacent to the western elevation of the main warehouse building comprising a 10,000-litre diesel tank within an Enviro Cube, with AdBlue tanks also present.

We have been made aware of a planning application for the installation of a below ground fuel storage tank (BGST), however there was no obvious surface evidence of its presence. Anecdotal evidence from the vendors representative on site at the time of the walkover suggests that although planning was granted, it was never installed.

Some vegetation is present around the boundary of the site, with an area of landscaping along the eastern boundary and the eastern half of the northern boundary. The majority of the mature trees found on site are located along the eastern boundary.

The surrounding land uses are predominantly residential and light commercial.

Photographs of the site walkover are presented in Appendix A.



3 Review of Previous Desk Study Report

The site has been the subject of a previous Geo-Environmental Desk Study:

- Obsidian Geo-Consulting Limited, Geo-Environmental Desk Study Report 24-1990-P-R1 dated September 2024.

The salient points of the Desk Study are detailed within the following sections.

3.1 Site History

A review of the historical maps indicates that the site was present as open fields at the time of the first mapping series in 1848 and remained this way until the 1933 mapping when the 'Atlas engineering works' were first mapped on site. The mapping series reflects that since this initial development, the site has operated as an industrial unit with a slight expansion highlighted in the 1951-1952 mapping series, with the works footprint expanding and outbuildings being added. In the 1986 mapping, the works were relabelled as warehouses and expanded to a larger footprint with a more broadly square shape, suggesting possible demolition and redevelopment. As well as this, tanks are listed in the north-west of the site, adjacent to the outbuilding in the north-westerly corner. Later mapping series show the site being used by HGVs since at least 2000, presumably earlier than this also.

3.2 Geology, Hydrogeology and Hydrology

3.2.1 Geology and Hydrogeology

Given the development history of the site, Made Ground is expected to be encountered across the site. Superficial deposits of the Devensian Till are expected overlying bedrock of the Pennine Middle Coal Measures Formation. The bedrock geology is designated as a Secondary 'A' Aquifer and the superficial strata is designated as a Secondary Undifferentiated Aquifer. The site is not located within a Source Protection Zone.

3.2.2 Hydrology

According to the Envirocheck report, the nearest surface water feature is approximately 154m east of site. This feature corresponds to a potential drain or ditch associated with the railway. The next nearest surface water feature is the Rochdale Canal approximately 500m northeast of site.

The site is not considered to be at risk of flooding from rivers or sea without defences and is not located within an area benefiting from flood defences.

There is a potential for groundwater flooding of property situated below ground level across the entire site area.

3.3 Environmental Considerations from Desk Study

Potential contaminants include the presence of metals, PAH, TPH, VOC's asbestos, pH, water-soluble sulphate and ground gases. It should be noted that the presence of the potential contaminants is likely to be in localised, isolated areas of historical activity.

These risks cannot be removed through a desk-based risk assessment alone and hence it is recommended that these potential risks are assessed further through an appropriate intrusive investigation which should be sufficient in scope to assess the potential risks and enable development of a remedial strategy for the site if required.

The data from the Envirocheck Report indicates that no Radon protective measures are required on site.



3.4 Geotechnical Considerations from Desk Study

The desk study highlighted that based on the anticipated geology, conventional strip or trench fill foundations may be appropriate, however if significant depths of Made Ground are encountered or if soft or loose natural strata with poor bearing characteristics are encountered, it may be the case that deeper piled foundations may be necessary, this will be subject to confirmation after a targeted ground investigation has taken place.

Elevated pH and water-soluble sulphates can arise from Made Ground and natural strata; this is deemed to be low to medium risk.

There is a likelihood of limited tree/hedgerow influence with tree growth bounding the majority of the border of the site. Therefore, the potential for heave should be considered dependent upon the near surface strata present on site.

The identified fault line will be present within the deeper, bedrock geology. Given the absence of any proposed, deep basement type structures, it is unlikely that this will require further investigation, unless it is evident that its presence has resulted in a significant impact on the near surface geology.

3.5 Preliminary Source-Pathway-Receptor Relationships

The preliminary Source-Pathway-Receptor relationships identified for the site bearing in mind the anticipated redevelopment proposals are summarised as follows:

Table 3.1: Preliminary Source-Pathway-Receptor Relationships

Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
Made Ground associated with potential infilled area, access areas and built structures	Metals, PAH, TPH, BTEX, VOC's	Inhalation, Ingestion, Dermal contact	Future site workers, Construction workers, Customers	Low to Medium
	Asbestos containing materials.	Inhalation	Future site workers, Construction workers, Customers	Low to Medium
	pH Water-soluble Sulphate	Aggressive attack	Buried concrete	Low to Medium
	PAH, TPH, BTEX VOC's	Direct Contact	Water Supply Pipes	Low to Medium
	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Low to Medium
	Metals, PAH, TPH, BTEX, VOC's	Migration of Dissolved Phase/Aqueous Contaminants	Secondary A Aquifers	Low
Natural Strata Across Site	pH Water-soluble Sulphate	Aggressive attack	Buried concrete	Low to Medium
	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Low to Medium



Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
'Tanks' Mapped on Site	PAH, TPH, BTEX VOC's	Direct Contact, Inhalation, Ingestion, Dermal contact	Future site workers, Construction workers, Customers	Medium
Made Ground on Adjacent Sites	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Low
	Metals, PAH, TPH, BTEX, VOC's, PCB's	Inhalation, Ingestion, Dermal contact	Future site workers, Construction workers, Customers	Low
	PAH, TPH, BTEX VOC's	Direct Contact	Water Supply Pipes	Low
	Metals, PAH, TPH, BTEX, VOC's	Migration of Dissolved Phase/Aqueous Contaminants	Secondary A Aquifers	Low
Natural Strata on Adjacent Sites	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Low

4 Investigation Methodology

4.1 Objective

The objective of this assessment is to support the planning application for the redevelopment of the site by identifying any potentially significant constraints to future proposed developments associated with the likely ground conditions prevalent beneath the site and the surrounding area and to identify any potential areas of environmental liability or geotechnical constraints associated with the site.

4.2 Clearance of Underground Services

All exploratory holes were positioned in order to avoid known services marked on the provided Topographic and Underground Services Survey Plan. In addition, all exploratory hole locations were scanned on site by Obsidian using a cable avoidance tool (CAT) and signal generator (Genny).

Obsidian have been provided a plan labelled as the Emergency Pollution Incident Response Plan. It included the location of a fuel interceptor in the west of the site, which was not included on any of the other service plans provided. Although not underground, this plan also showed the location of a historic 20,000 litre diesel tank, a historic 4000 litre liquid petroleum gas tank and a historic 7000 litre heating oil tank.

4.3 Exploratory Holes

10No. window sample boreholes (WS01-WS10) were advanced across the site to depths of up to 5.00m bgl, using a small, tracked, light percussion window sampling rig. Window sample boreholes were advanced across external areas on the 15th and 16th October 2024 and across internal areas on the 16th October 2024. The internal floor and external hardstanding were reinstated upon completion with either concrete or tarmacadam.



Four TRL DCP's (DCP01-DCP04) were undertaken within the proposed car parking and access areas in order to calculate indicative CBR values on the 15th and 16th October 2024.

Gas and groundwater monitoring wells were installed within WS01, WS04 and WS06 to depths of up to 5.00m bgl. The wells were constructed using 50mm HDPE plain pipe in a bentonite seal from ground level to the base of the plain pipe. Below this, 50mm HDPE slotted pipe in a gravel surround to the base of the exploratory hole was installed. The wells were fitted with a gas tap assembly at ground level suitable for connection to proprietary gas monitoring equipment and a lockable cover at ground level to provide protection. The other exploratory holes were backfilled with arisings and reinstated at surface.

The approximate locations of the exploratory holes are shown on the appended Exploratory Hole Location Plan (24-1990-P/02/A).

4.4 Investigation Constraints

During the investigation on the 15th October 2024, Obsidian were instructed to stop works by A.G. Barr PLC on two occasions. A total of approximately 2 hours of standing time was accrued, which prevented two proposed boreholes from being completed.

The first time Obsidian were told to stop works was after 1m of drilling had occurred on borehole WS02. Casing had been drilled to 1m, with a second metre of casing ready to go down. This was on hold for approximately 1 hour. After the second metre was able to be drilled, the casing had gone down at an angle therefore losing verticality. This prevented drilling any deeper than 2m bgl.

Borehole WS05 was not advanced beyond 0.31m bgl. The tarmacadam was cored and removed and a TRL DCP test undertaken. The ground was proven to be hard to penetrate, so an SPT was undertaken from 0.10m bgl. This refused at 0.31m bgl. As such, the borehole was not forwarded further.

Borehole WS06 was drilled to 3m, with encountered groundwater water being cased out. However, the core between 2m and 3m would not stay in the barrel and could not be recovered. Therefore, the borehole could not be drilled any further.

4.5 Logging and Sampling

Engineer's logs of the strata encountered were developed in accordance with BS EN ISO 14688 and BS EN 14689 and copies are presented as Appendix B.

Standard Penetration Tests (SPT's) were taken at regular intervals within the window sample boreholes to provide 'N' values for empirical assessment of strength and density parameters of the strata.

Environmental soil samples and small disturbed soil samples were taken at selected depths in all exploratory holes, placed in appropriate containers and submitted for chemical and geotechnical laboratory testing.

4.6 Chemical Laboratory Analysis

Selected soil samples were subjected to appropriate chemical testing at the MCERTS and UKAS accredited laboratories of i2 Analytical for a suite of potential contaminants taking account of the Preliminary Conceptual Site Model and site observations. The scheduled chemical laboratory analysis is summarised in Table 4.1 below:



Table 4.1: Scheduled Chemical Laboratory Analysis

Analysis Type	Number of Samples
Metals	10
Cyanide	10
Phenol	10
PAH	10
Asbestos Screen	10
TPH CWG Inc BTEX	6
Soil Organic Matter	6
VOC	4
WAC Suite	3

The results of the chemical laboratory analysis are presented in Appendix C.

4.7 Geotechnical Laboratory Analysis

Selected soil samples were subjected to appropriate geotechnical testing at the UKAS accredited laboratories of Geolabs and i2 Analytical. The scheduled geotechnical laboratory analysis is summarised in Tables 4.3 below:

Table 4.3: Scheduled Geotechnical Laboratory Analysis

Analysis Type	Number of Samples
Plasticity Index Tests	6
Natural Moisture Content	6
pH	22
Water Soluble Sulphate	22

The results of the pH and water-soluble sulphate testing are included with the chemical testing results presented as Appendix C. The results of the soil moisture content and plasticity index testing are included as Appendix D.

5 Results of Investigation

5.1 Recorded Strata

The ground conditions encountered are similar to the mapped geology. Beneath a layer of Made Ground, the Devensian Till was encountered. The bedrock was not encountered during this investigation.

5.1.1 Made Ground

Made Ground was encountered across the site in all boreholes (WS01-WS10). All boreholes except WS05 and WS06 were advanced through concrete. Borehole WS05 was advanced through tarmacadam and WS06 through Made Ground Topsoil. The concrete varied in thickness from 0.18m to 0.21m and the tarmacadam was 0.07m thick.

The Made Ground Topsoil encountered in borehole WS06 only was encountered to 0.10m bgl. It was composed of a dark brown, sandy clay. Below the Made Ground Topsoil was a layer of Made Ground to 0.70m bgl. It was composed of a slightly clayey, slightly sandy gravel of concrete gravel.

Beneath the concrete across the site (internal and external) and the tarmacadam was a sub-base material. It varied in colour from light brown to grey, with one location being beige. The sub-base was typically composed of a slightly clayey, slightly sandy gravel of limestone. The base of the sub-base material varied from 0.30m to 0.80m bgl and was not proven in WS05 due to refusal.

Made Ground was also encountered below the sub-base material in all boreholes except WS05. It was generally composed of a black or grey, slightly gravelly, sandy clay or locally a slightly sandy gravel. The gravel included brick fragments, limestone, sandstone and concrete. Localised clinker



was also encountered. The Made Ground material typically had a natural organic odour, with occasional to frequent decaying rootlets and wood fragments. Where proven, the base of the Made Ground varied from 0.60m bgl to 1.30m bgl. The base of the Made Ground was not proven in borehole WS02, which was terminated at 2.00m bgl due to the casing having gone down at an angle.

5.1.2 Devensian Till

The Devensian Till, which will be referred to as Till from this point onwards, was encountered in all boreholes except WS05. Two distinct layers of Till was observed across the site. These two layers varied in colour with the upper layer being grey in colour and the lower layer being brown in colour.

The upper layer was generally described as a slightly sandy to sandy clay with localised sandstone gravel, mudstone gravel and coal fragments. The lower layer was generally described as a slightly gravelly, sandy clay with gravel of quartzite, flint, mudstone, sandstone and coal fragments. Occasional beds of sand were also encountered.

The base of the Till was not proven, with a maximum proven depth of 5.00m bgl.

5.2 Standard Penetration Tests (SPT's)

SPT's were undertaken within the window sample boreholes at regular intervals. The recorded, uncorrected SPT 'N' Values for the external and internal window samples are summarised in Tables 5.1 and 5.2, respectively.

Table 5.1: Uncorrected SPT 'N' Values from External Window Sample Boreholes

Depth (m bgl)	Exploratory Hole					
	WS01	WS02	WS03	WS04	WS05	WS06
0.1	-	-	-	-	>50	-
1.00	-	4	4	6	-	4
1.20	3	-	-	-	-	-
2.00	2	6	4	4	-	6
3.00	6	-	6	7	-	15
4.00	11	-	9	4	-	-
5.00	13	-	13	14	-	-

Table 5.2: Uncorrected SPT 'N' Values from Internal Window Sample Boreholes

Depth (m bgl)	Exploratory Hole			
	WS07	WS08	WS09	WS10
1.00	0	1	5	4
2.00	6	12	8	7
3.00	4	7	7	11
4.00	7	11	10	12
5.00	17	16	14	15

-	No Data
	Made Ground
	Till

The only SPT refusal occurred within the sub-base material of borehole WS05.



5.3 Groundwater

During the site investigation works, groundwater was encountered within boreholes WS01, WS02 and WS04 to WS07. Groundwater was found within the Made Ground in borehole WS02 at 1.50m bgl and boreholes WS05 and WS06 at 0.30m bgl. Groundwater was also encountered within the Till at 2.30m bgl in borehole WS01, 4.20m bgl in borehole WS04 and at 3.10m bgl in borehole WS07.

During the subsequent monitoring visits, the following, standing groundwater levels were recorded:

Table 5.3: Recorded Standing Groundwater Levels

Monitoring Well	Recorded Water Depth (m bgl)			
	23/10/2024	30/10/2024	06/11/2024	13/11/2024
WS01	1.75	1.69	1.83	1.89
WS04	2.69	2.67	3.15	2.86
WS06	0.36	0.33	0.38	0.42

Groundwater rose slightly in all boreholes between the first and second visit. By the third visit, groundwater levels had fallen to levels slightly lower than the first visit. The groundwater has fallen again by the fourth visit.

Borehole WS06 was purged on the second visit to see if the groundwater would rebound. The borehole was purged to 1.88m bgl (base is at 1.92m bgl). After 45 minutes, the groundwater rose to 0.58m bgl.

5.4 Chemical Laboratory Analysis Results

The results of the chemical laboratory analysis have been reviewed and screened in line with the current legislative framework and criteria to assess the risk to human health.

The screening has been undertaken using the Obsidian OB-Screen Human Health Screening Tool which compares the recorded concentrations to the DEFRA 'Category 4 Screening Levels' (C4SL's) and the LQM/CIEH 'Suitable 4 Use Levels' (S4UL's) to be protective of human health. Where C4SL's and S4UL's are not available, the EIC/AGS/CL:AIRE Generic Assessment Criteria (GAC's) have been used. Given the proposals, the Commercial end use scenario has been adopted.

Soil Organic Matter (SOM) analysis has been undertaken to determine the most appropriate screening values for organic contaminants. Based on the average values, 2.5% SOM has been adopted for the screening assessment.

5.4.1 Metals

Ten samples have been analysed for metals. None of the recorded concentrations exceed their adopted screening values.

5.4.2 Total Cyanide and Phenol

Ten samples have been analysed for total cyanide and phenol. None of the recorded concentrations exceed their adopted screening values.

5.4.3 PAH's

Ten samples were analysed for a suite of speciated PAH's. An additional three samples were WAC tested and also include speciated PAH's. Only one sample records elevated PAH, the remaining nine samples do not record any concentrations above their adopted screening values.

A total of three compounds were recorded above their respective screening values in borehole WS07 at 0.60m bgl. Benzo(b)fluoranthene was recorded at 69mg/kg compared to the screening value of 44mg/kg, Benzo(a)pyrene was recorded at 63mg/kg compared to the screening value of 35mg/kg and Dibenz(a,h)anthracene was recorded at 4.4mg/kg compared to the screening value of 3.6mg/kg.



5.4.4 Asbestos

Ten samples were screened for the presence of fibrous asbestos materials. Amosite and Chrysotile were positively detected within one sample of Made Ground and was subsequently scheduled for quantification analysis. The results of the positive detection are summarised in Table 5.2.

Table 5.2: Positive Asbestos Detection Summary

Sample Reference	Depth (m bgl)	Asbestos Screening Result	Asbestos Quantification Result
WS07	0.60	Loose fibres and loose fibrous debris comprising Amosite and Chrysotile.	0.132%

All other samples analysed showed no positive detection for asbestos.

5.4.5 TPH CWG, BTEX & MTBE

Six samples were analysed for speciated TPH and BTEX including MTBE. None of the recorded concentrations exceeded their adopted screening values.

5.4.6 VOC's

Four samples were analysed for VOC's. The majority of the analysed compounds were below their lower laboratory detection limits. Minor, trace concentrations were detected within sample WS01/0.80m, however they were not recorded at concentrations that exceed their adopted screening values or at concentrations that pose a risk to human health.

The results of the screening assessments are presented in Appendix E.

5.5 Geotechnical Laboratory Analysis Results

5.5.1 pH and Water-Soluble Sulphate

Twenty-two samples were tested for pH and water-soluble sulphates, ten from Made Ground materials and twelve from the underlying natural strata. The results are summarised in Table 5.4:

Table 5.4: pH and Water-Soluble Sulphate Results Summary

Analysis	Made Ground		Natural Strata	
	Min Value	Max Value	Min Value	Max Value
pH (pH units)	7.1	9.6	5.5	8.1
Water-Soluble Sulphate (mg/l)	14.1	328	8.14	68.8

The combined results of the pH and water-soluble sulphate analysis indicate that the risk posed to future buried concrete structures is negligible. This is discussed further in Section 7.4.

5.5.2 Plasticity Index Testing

The results of the plasticity index testing undertaken on six natural clay samples are summarised in Table 5.5.

Table 5.5: Plasticity Index Test Results Summary

Location	Depth (m) bgl	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Percentage Passing 425um (%)	Modified Plasticity Index
WS03	1.50	23.2	35	15	20	99	19.8
WS07	1.10	22.7	36	19	17	85	14.45
WS08	2.20	22.4	36	17	19	99	18.81
WS09	0.80	14.2	25	13	12	98	11.76
WS10	1.30	26.7	38	18	20	100	20
WS10	1.70	21.8	37	18	19	99	18.81



The cohesive samples analysed were all low to medium plasticity and are of low volume change potential.

5.6 Ground Gas Monitoring Results

The gas monitoring results completed have been compared to guidance presented in CIRIA Report C665, Assessing Risks Posed by Hazardous Ground Gases to Buildings, 2007. However, one more gas monitoring visit needs to be completed in order to comply with the guidance.

CIRIA C665 indicates that ground gas protection measures may be necessary in new buildings on sites where methane concentrations exceed a threshold value of 1% v/v and/or where carbon dioxide concentrations exceed a threshold value of 5% v/v. The gas flow rate is also considered in the required level of protection.

Maximum methane (CH₄) and carbon dioxide (CO₂) concentrations, as percentage volume in air (%v/v), minimum oxygen (O₂) concentrations (%v/v), maximum carbon monoxide (CO) and hydrogen sulphide (H₂S) concentrations, in parts per million (ppm), and gas flow rates in litres per hour (l/hr) have been monitored in the three window sample monitoring wells on four occasions.

The ground gas monitoring results are presented in Appendix F and the detections are summarised in Table 5.7.

Table 5.7: Ground Gas Monitoring Results Summary

Well	Carbon Dioxide concentrations (% v/v)	Methane concentration (% v/v)	Flow Rates (l/hr)
WS01	1.0-8.6	ND-23.2	0.0
WS04	8.6-9.1	ND	-0.4-9.0
WS06	0.2-1.3	ND	0.0

During the gas monitoring programme, no positive readings of carbon monoxide or hydrogen sulphide were observed. Atmospheric pressures ranged between 1015mb and 1024mb.

On the second gas monitoring visit. Borehole WS06 was monitored twice. It was monitored first on arrival and then purged to almost dry. The remainder of the gas monitoring was completed and after 45 minutes, a second gas reading was taken. The gas readings were slightly lower than the first reading. However, the groundwater had rebounded to almost the same level as before the purge. This created the piston effect in the borehole, resulting in a flow of 11.7l/hr. This flow has been ignored as the groundwater has pushed the gas into the plain pipe, creating a false reading.

6 Environmental Assessment

6.1 Soil

Representative soil samples from across the site have been scheduled for a suite of analyses. The analysis has included a suite comprising Metals, Cyanide, Phenol, PAH's, TPH, BTEX, VOC's and Asbestos.

The results of the analysis have been reviewed and compared against appropriate screening criteria for Human Health within a Commercial end use scenario. None of the recorded concentrations of Metals, Cyanide, Phenol, TPH, BTEX or VOC's were recorded above their adopted screening values.

One sample recorded elevated PAHs as well as a positive detection of asbestos containing materials (ACM), with a quantification of 0.132%. This sample (WS07 at 0.60m bgl) is located beneath the proposed building footprint within a layer of Made Ground found between 0.50m and 0.70m bgl. The



affected Made Ground is a thin layer, which will likely be stripped during the formation of the foundations. Due to its asbestos content, it will likely require a Hazardous Waste classification. The extent of the affected material is unknown, it is recommended that this area is delineated either pre or post demolition works. Given the nature of the Made Ground, it may be the case that asbestos is present elsewhere on site.

The results of the pH and water-soluble sulphate testing indicate that the risk posed to future buried concrete structures is low. This is further discussed in Section 7.4.

6.2 Ground Gas Risk Assessment

The preliminary risk assessment identified the ground gas risk to be low to medium for the site.

A maximum carbon dioxide concentration of 9.1% v/v and maximum methane concentration of 23.2% v/v has been recorded during the monitoring visits. A maximum flow rate of 9.0 l/hr has also been recorded during the monitoring visits.

The maximum carbon dioxide concentration of 9.1% v/v, the maximum methane concentration of 23.2% v/v and a gas flow rate of 9.0 l/hr have been selected to calculate an initial Gas Screening Values (GSV) for the site in accordance with CIRIA Report C665 to determine the required level of methane and carbon dioxide protection measures for the proposed future site development.

The GSV is calculated as follows:

$$\text{GSV} = (\text{Gas Concentration}/100) \times \text{Flow Rate}$$

In line with the recommendations provided in CIRIA 665, a GSV of 0.82 l/hr has been calculated for carbon dioxide and a GSV of 2.09 l/hr has been calculated for methane. The GSV's for both carbon dioxide and methane classify the site as 'Characteristic Situation 3' (Moderate Risk). Taking into account the proposed building type (Type C) and the Characteristic Situation, then in accordance with BS8485:2015+A1:2019 Code of Practice for the Design of Protection Measures for Ground Gas, the minimum gas protection score required is 3.0 points.

In accordance with BS8485:2015+A1:2019, a score of 3.0 points can be achieved through the adoption of the following:

- Cast in-situ monolithic reinforced ground bearing ratio or reinforced suspended floor slabs with minimal penetrations. (1 or 1.5 points)
- The installation of a high strength and durable methane and carbon dioxide resistant membrane. (2 points)

No radon protection measures are likely to be required for this site.

6.3 Revised Conceptual Site Model

The revised Conceptual Site Model based on the information obtained from the intrusive investigation, the Human Health Risk Assessment and Preliminary Ground Gas Risk Assessment has confirmed that some of the potential pollutant linkages in Table 6.1 remain. This Conceptual Site Model will need to be updated on the completion of the ground gas risk assessment.



Table 6.1: Preliminary Source-Pathway-Receptor Relationships

Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
Made Ground associated with potential infilled area, access areas and built structures	PAH	Inhalation, Ingestion, Dermal contact	Future site workers, Construction workers, Customers	Medium
	Asbestos containing materials.	Inhalation	Future site workers, Construction workers, Customers	High
	PAH	Direct Contact	Water Supply Pipes	Medium (WS07 only)
	Methane, Carbon Dioxide,	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Medium
Natural Strata Across Site	Methane, Carbon Dioxide,	Migration of Ground Gas/Vapours	Future site workers, Construction workers, Customers	Medium

6.4 Health and Safety

The Principal Contractor should provide an assessment of the appropriate procedures required to protect site workers from the materials likely to be encountered at the site.

The following basic health and safety measures should be adopted as a minimum during the site development works:

- Basic Personal Protective Equipment (PPE) including hard hats, gloves, coveralls and steel toe-capped boots to be worn at all times;
- Eating, drinking and smoking to be forbidden except in designated mess areas; and
- Breathing equipment to be available for those working in confined or unventilated spaces.

If ground conditions should differ significantly from those encountered during the intrusive investigation, including the discovery of any visible or odorous contamination, site redevelopment works should be suspended until the suspect material has been inspected and assessed by a competent Geo-Environmental Engineer.

6.5 Waste Disposal

The reuse of soils as engineered fill should be undertaken in accordance with an appropriate Environment Agency licence as defined in the statutory guidance on the 'Definition of Waste' or CL:AIRE Code of Practice.

A level 1 Waste Characterisation of the soil total values would indicate a Non-Hazardous Waste Classification for the majority of the site. However, given the presence of Chrysotile and Amosite within WS07 at 0.60m bgl at a concentration of 0.132% and Benzo(a)pyrene at a concentration greater than 50mg/kg, this material would be deemed as Hazardous Waste. Should intact fragments of chrysotile or amosite asbestos be identified during the demolition works then these should be handpicked and removed from site as Hazardous Waste with the soil matrix also screened and if positive, quantified to assess its waste classification.

Waste Acceptance Criteria (WAC) analysis has been carried out on three samples of Made Ground. The sample of Made Ground from WS02 at 0.85m bgl exceeds the inert threshold for Total PAH,



pH, Copper and Antimony. This result indicates that some of the Made Ground is likely to be classified as Non-Hazardous in the absence of Hazardous material outlined above.

The natural strata on site would be classified as default Inert Waste.

Given the variability of the above results, it is recommended that any excavated material from site should be stockpiled and sampled prior to removal to facilitate further characterisation and classification, including WAC analysis to confirm the materials' classification.

6.6 Regulator Liaison

It is recommended that this report be submitted to the Local Authority Environmental Health Officer for review and comment prior to any irrevocable action taking place.

Based on the PAH and TPH concentrations within the Made Ground, it is likely that barrier water supply pipes will be required at this site. However, it is still recommended that the results of this assessment are confirmed with the local water supply authority prior to any water supply pipes being installed.

6.7 Environmental Protection

The following environmental protection measures should be adopted as a minimum during the site redevelopment works:

- Covering or dampening of spoil to prevent the spread of dust;
- Containment of surface water runoff to prevent the pollution of surface water drains, sewers etc and;
- Cleaning and washing of boots, vehicle wheels and other equipment at site entry and exit points to prevent the spread of mud.

7 Geotechnical Assessment

7.1 Introduction

Ground conditions across the site are considered to be in line with the anticipated, published geology for the site and surrounding area.

Across the proposed development footprint, a low to medium strength natural strata profile was encountered at variable depths.

The recorded SPT 'N' values taken from exploratory locations within proximity of the proposed building footprint are summarised in Table 7.1.

Table 7.1: Uncorrected SPT 'N' Values Within Proximity of the Proposed Building Footprint

Depth (m bgl)	Exploratory Hole						
	WS01	WS02	WS03	WS07	WS08	WS09	WS10
1.00	-	4	4	0	1	5	4
1.20	3	-	-	-	-	-	-
2.00	2	6	4	6	12	8	7
3.00	6	-	6	4	7	7	11
4.00	11	-	9	7	11	10	12
5.00	13	-	13	17	16	14	15



-	No Data
	Made Ground
	Till

The recorded SPT's, geotechnical soil analyses and borehole descriptions show a relatively consistent distribution of soil parameters within the Made Ground and natural strata beneath the site. The 'N' values within the Made Ground across the proposed footprint are very low and range between 0 and 6. Within the natural strata, 'N' values range between 2 and 17, generally increasing in strength with depth.

7.2 Foundations and Floor Slab

Made Ground is not considered to be a suitable founding stratum. Therefore, the foundations must extend into the cohesive natural strata below. However, based on the SPT data above, the underlying natural strata is not suitable for conventional strip or trench fill foundations. Instead, short piles to a minimum depth of at least 5.00m bgl will be required.

Piles are recommended as the underlying natural strata is deemed too soft and variable for conventional foundations. The brickwork of the current warehouse buildings has also been observed to have some significant cracks and many replacement areas throughout. It is likely that this building has not been piled and the damage has been caused by either differential settling or soil heave due to the boundary trees.

As stated above, the existing trees may cause soil heave. In the influence zone of trees, pile caps and ground beams will have to be separated from the soil by a suitable void former on the sides and in the case of ground beams, underneath. Piles will have to be designed to withstand the seasonal movements exerted by the remaining and proposed vegetation either by the use of suitable reinforcement or by the provision of sleeving through the swelling zone. Such precautions against heave should be designed and constructed in accordance with NHBC Standards.

It is recommended that consultation with a specialist piling contractor is undertaken in order to evaluate likely pile loads, diameter and depths based upon the ground conditions revealed within the context of the specified technical requirements of the chosen piling method. In any event, positive contractual assurances should be sought from the piling contractor in respect of the performance of their proprietary system.

In order to confirm deeper ground conditions for pile design further ground investigation comprising deep cable percussive boreholes is recommended post demolition. It is suggested that 3No. boreholes are drilled to depths of between 10m and 12m. In situ Standard Penetration Tests should be conducted when advancing the boreholes and collected soil samples submitted for appropriate geotechnical laboratory testing.

With a piled foundation solution being adopted, it is likely that a suspended floor slab would be most appropriate. Significant excavation, compaction and supplementation will be needed for a ground bearing slab to be considered and will require additional consideration of tree influence, and the removal of the organic material recorded within the near surface strata.

Significant excavation, supplementation and re-compaction, potentially including ground improvement would be needed and the removal of the organic material recorded within the near surface strata if a raft foundation solution was to be considered.

7.3 Construction

Anticipated excavation depths should be readily achieved using conventional plant (wheeled back-actor or similar) within the Made Ground and natural strata.



Support must be provided for all excavations requiring entry by site workers in accordance with guidance presented in CIRIA Report 97 'Trenching Practice'.

Groundwater was encountered within a number of boreholes between 0.30m and 3.15m bgl, so will likely be encountered during the construction of the proposed store foundations.

7.4 Concrete Specification

The ground conditions, pH values and water-soluble sulphate concentrations results have been assessed for potential aggressive attack on concrete in accordance with BRE Special Digest 1 'Concrete in Aggressive Ground (2005)'.

The results indicate that both the Made Ground and the natural strata beneath the site fall within Design Sulphate Class DS-1 and ACEC (Aggressive Chemical Environment for Concrete) Class AC-1^d.

The specific concrete mixes for the DS Class to be used at the site will be determined, mindful of the ACEC Class, by the site-specific concrete requirements in terms of the required durability and structural performance. These are assessed in terms of the Structural Performance Level (SPL) and any Additional Protection Measures (APM).

7.5 Pavement Design

TRL DCP's were undertaken at four locations within the proposed parking areas. The TRL DCP results are included within Appendix G.

The calculated CBR's from the in-situ test results are as follows:

Table 7.2: Calculated In-situ CBR Values

TRL DCP Location	Depth Range	Strata	Calculated CBR %
DCP01	180-420	Made Ground	>50
DCP01	420-460	Made Ground	20
DCP01	460-760	Made Ground/Natural Clay	7
DCP02	70-116	Made Ground	>50
DCP02	116-135	Made Ground	>50
DCP02	135-197	Made Ground	>50
DCP03	187-415	Made Ground	48
DCP03	415-797	Made Ground/Natural Clay	11
DCP04	200-279	Made Ground	>50
DCP04	279-437	Made Ground	>50
DCP04	158-555	Made Ground	>50

The recorded CBR values display medium to high strength sub-base materials. Where the sub-base materials are fully penetrated, the underlying Made Ground and natural strata is of low to medium strength.

The above calculated values should be taken as indicative only and should not be used for deriving a design CBR value. It is recommended that further confirmatory CBR testing will be needed closer to the time of construction to inform the design, whereby the proposed formation levels can be exposed using an excavator and in-situ plate CBR tests can be undertaken.



8 Recommendations

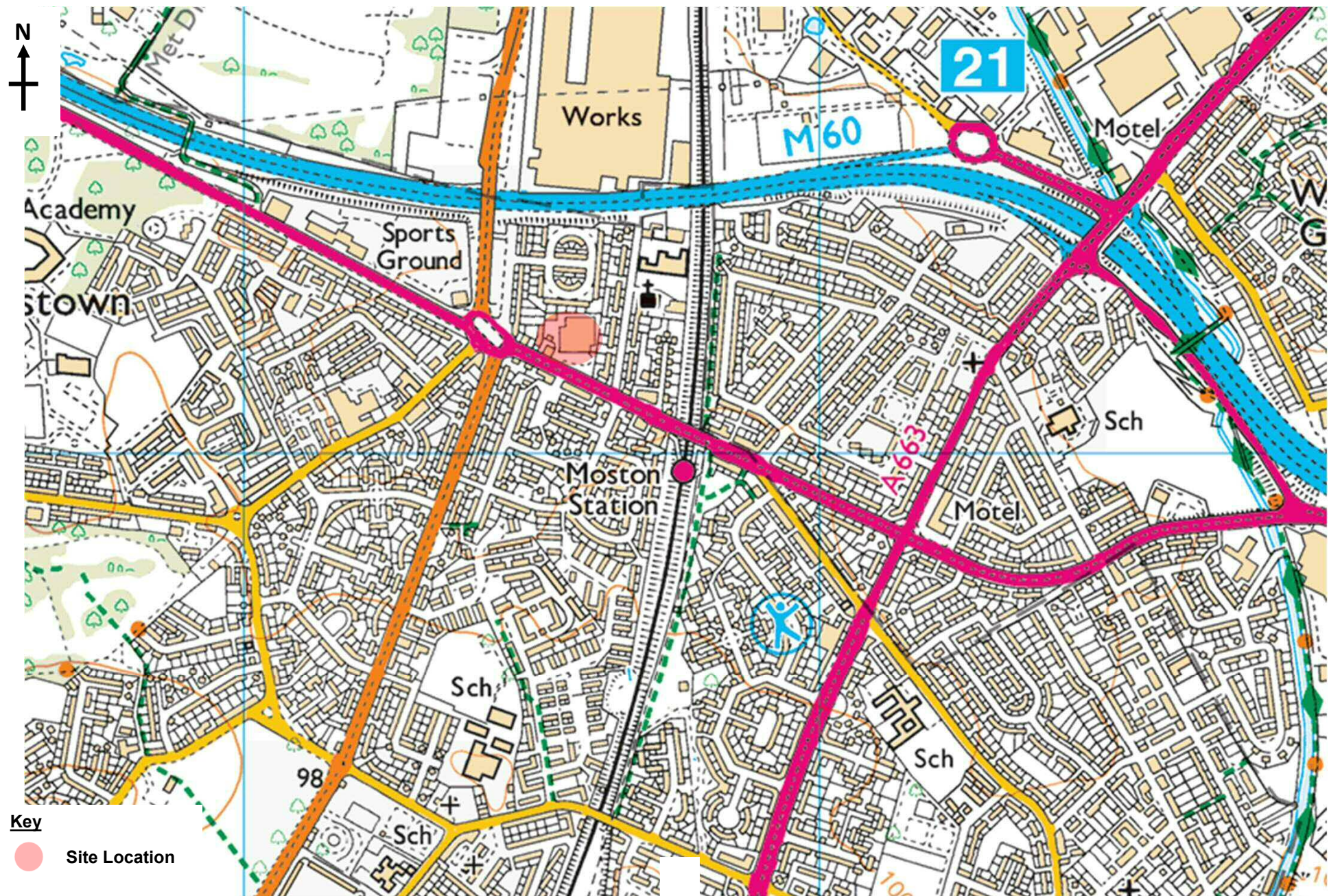
We recommend the following steps be taken to enable the proposed development to progress:

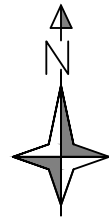
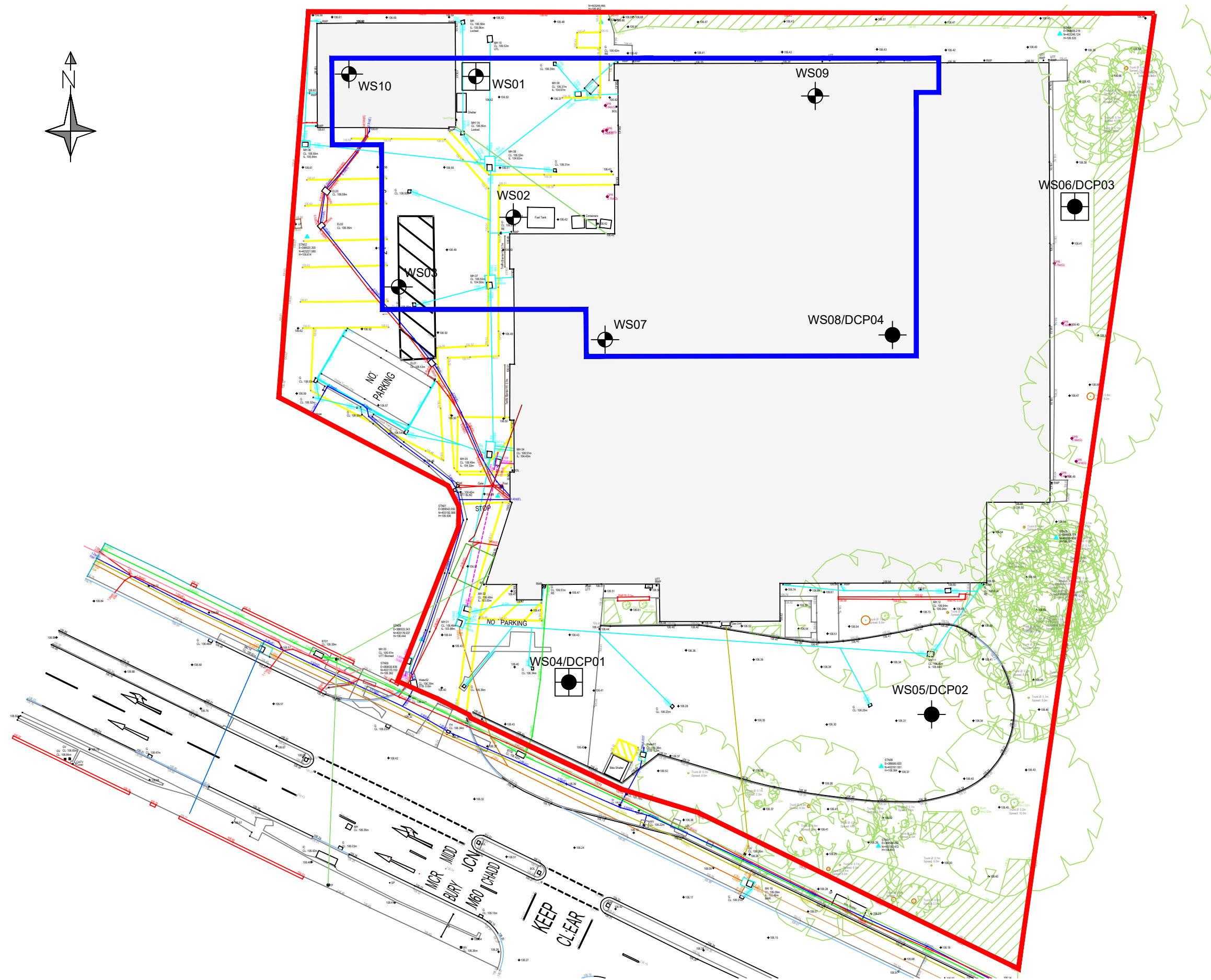
- Undertake a tree survey so that the potential impact on proposed foundations can be fully assessed given the presence of natural, cohesive strata.
- Additional boreholes to delineate the extent of the PAH and asbestos contamination around borehole WS07 either pre or post demolition.
- In order to confirm deeper ground conditions for pile design further ground investigation comprising deep cable percussive boreholes is recommended post demolition. It is suggested that 3No. boreholes are drilled to depths of between 10m and 12m.
- Design and install ground gas protection measures for a 'Characteristic Situation 3' (Moderate Risk) ground gas scenario.
- Submission of this report and assessment to the Local Authority Environmental Health/Contaminated Land Officer and water supply authority.



Drawings



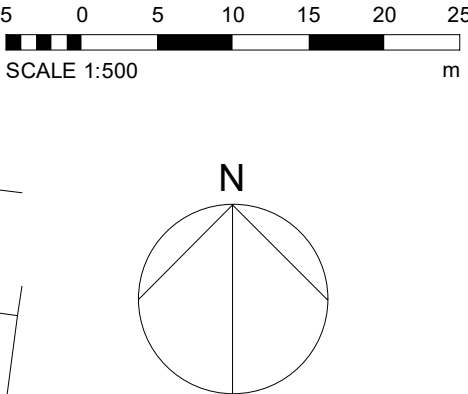




Key:	
	Window Sample Borehole Location
	Window Sample Location with Monitoring Well Installation
	TRL DCP Location
	Site Boundary
	Proposed Lidl Store Footprint



PROJECT: Proposed Lidl Store, Hollinwood Avenue, Moston, Manchester	PROJECT NO:	24-1990-P	DRAWING NO:	02
	REVISION:	A	SCALE:	NTS
TITLE: Exploratory Hole Location Plan	DRAWN BY:	BM	DATE:	08/11/2024
	APPROVED BY:	SMD	DATE:	08/11/2024



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Contractors must check all dimensions on site.
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To be read in conjunction with relevant design standards/protocols

This is a colour drawing. In order to ensure any subsequent reproduction is viewed correctly it should be printed in full colour.

FEASIBILITY CHECKLIST

☒	Initial Client Brief
☒	Ordinance Survey Map
☐	Legal Input to include Title Information
☐	Topographical Information Incorporation
☐	Client Review
☐	Highways Input / Review
☐	Structural Input / Review
☐	Landscape Design Input / Review
☐	Existing Statutory Services / Utilities Review
☐	Planning Consultant Guidance / Input
☐	Cost Managment Advice - Budget Determined

SITE AREAS			
	SITE BOUNDARY	ACRES	HECTARES
	ASSUMED SITE BOUNDARY	1.99	0.81

PARKING SCHEDULE OPTION 2	
PARKING TYPE	QUANTITY
EVC SPACES	2
LIDL ACCESSIBLE SPACES	6
LIDL PARENT & CHILD SPACES	9
LIDL STANDARD SPACES	92
	109

LIDL BBS 23/24 - LIDL TYPE 1300		
	SQM	SQFT
SALES AREA	1334	14,359
WAREHOUSE	410	4413
ANCILLARY (INCL INT WALLS)	218	2346
GIA	1961	21,108

C1	UPDATED AREA SCHEDULE TO LATEST LAYOUT	25.07.24	MN	NP
P2	OVERLAY OF THE SITE ACCESS ARRANGEMENTS DRAWING	26.04.24	MN	NP
P1	FIRST ISSUE	27.03.24	JM	NP
Rev	Description	Date	Drm	Ckd

Status
SKETCH - NOT FOR CONSTRUCTION

SMR

SMALLEY MARSEY RISPIN

ARCHITECTS

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Project
HOLLINWOOD AVENUE, MOSTON



Drawing Title

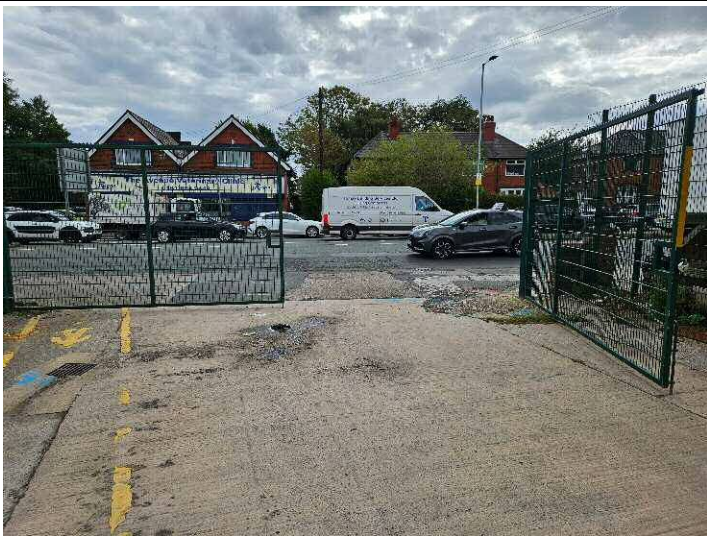
PROPOSED SITE PLAN OPTION 2

Proj Ref	Origin	Zone	Level	Type	Role	Num	Status	Rev
7123 - SMR	-	66	-	ZZ	-	DR	-	A - 8003 - S2 - C1
SMR Job Ref	Sheet	Scale	Drawn					
7123-66-8003	A2	1 : 500	SP					

Appendix A

Photographs





Photograph 1 – Access to the site.



Photograph 2 – The office building in the south of the site. Viewed north.



Photograph 3 – Two of the warehouses.



Photograph 4 – Former vehicle maintenance building.



Photograph 5 – Present above ground fuel tank in left of image. Former above ground fuel tank in location of shelter.



Photograph 6 – Area of landscaping along eastern border.



Photograph 7 – The southern warehouse.



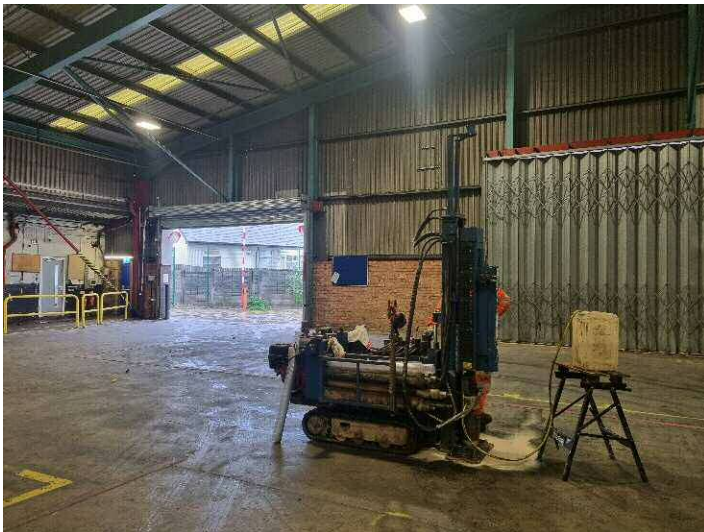
Photograph 8 – The northern warehouse.



Photograph 9 – Location and drilling of borehole WS01.



Photograph 10 – The hand dug pit excavated material and core recovery for WS01.



Photograph 11 – Location and drilling of borehole WS07 in the southern warehouse.



Photograph 12 – Core recovery of borehole WS07.

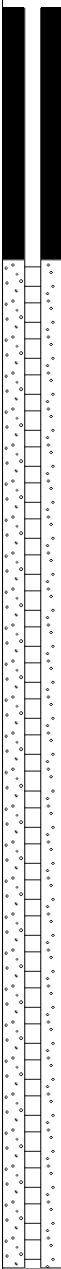
Appendix B

Exploratory Hole Records



Percussion Drilling Log

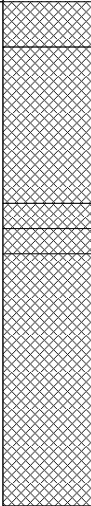
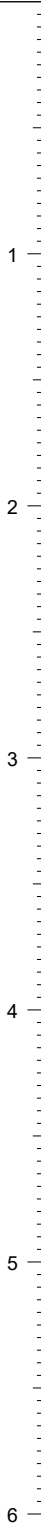
Project Name: Lidl, 440 Hollinwood Avenue		Client: Lidl Great Britain Ltd		Date: 15/10/2024	
Location: Moston		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1990-P		Crew Name: Dynamic Sampling UK Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS01	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.22			MADE GROUND: Concrete.	1
		0.30	ES		0.50			MADE GROUND: Light brown, slightly sandy gravel of fine to coarse, angular to subangular limestone. (sub-base)	
		0.80	ES		1.10			MADE GROUND: Black, slightly gravelly, sandy clay. Gravel of fine to coarse, subangular brick fragments and limestone. Natural organic odour and decaying rootlets.	
		1.20	SPT	N=3 (0,0/0,1,1,1)	1.20			MADE GROUND: Grey, sandy clay with occasional brick fragments, some decaying rootlets and a natural organic odour.	2
		1.30	D		2.00			Soft to firm, dark grey mottled brown in places, slightly sandy CLAY with coal fragments, decaying rootlets and a very weak organic odour. Pocket of brown sand at 0.80m and 0.90m. GLACIAL TILL	
		2.00	SPT	N=2 (0,0/0,0,1,1)	2.00			Loose, brown, SAND. Wet from 2.30m. GLACIAL TILL	
		2.10	D		2.40			Soft to firm, moist, brown, slightly gravelly, sandy CLAY. Gravel of fine to medium, subrounded quartzite. GLACIAL TILL	3
		2.80	D		2.60			Firm to stiff, brown, slightly gravelly, sandy CLAY. Gravel of fine to coarse, subrounded quartzite, flint and coal fragments. Possible pockets of sand with water. Poor recovery between 3m and 5m. GLACIAL TILL	
		3.00	SPT	N=6 (1,1/1,1,2,2)					
		4.00	SPT	N=9 (2,2/2,2,2,3)					4
									
									
		5.00	SPT	N=13 (3,3/3,4,3,3)	5.00				5
									
									
									6
									
									
									End of Borehole at 5.000m
									
									

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
1. Window sample position scanned with CAT and Genny. 2. Hand excavated service pit advanced to 1.20m bgl. 3. Groundwater encountered at 2.30m bgl during drilling. 4. Gas and groundwater monitoring well installed as detailed above. 5. 40% recovery between 3m and 4m. 6. 50% recovery between 4m and 5m.



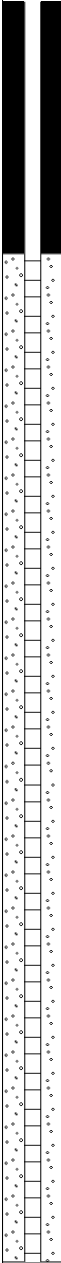
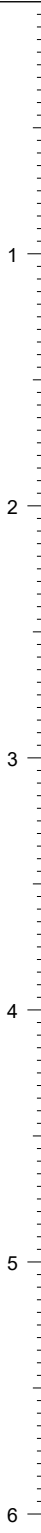
		<h1>Percussion Drilling Log</h1>																																													
Project Name: Lidl, 440 Hollinwood Avenue					Client: Lidl Great Britain Ltd				Date: 15/10/2024																																						
Location: Moston					Contractor: Obsidian Geo-Consulting Ltd																																										
Project No. : 24-1990-P					Crew Name: Dynamic Sampling UK Ltd				Drilling Equipment: Window Sampling Rig																																						
Borehole Number WS02		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1																																					
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description																																							
		Depth (m)	Type	Results																																											
		0.20	ES		0.18			MADE GROUND: Concrete.																																							
								MADE GROUND: Light brown, slightly sandy gravel of fine to coarse, angular to subangular limestone. (sub-base)																																							
		0.85	ES		0.80			MADE GROUND: Black, slightly gravelly, sandy clay. Gravel of fine to coarse, subangular brick fragments and limestone. Natural organic odour and decaying rootlets.																																							
		1.00	SPT	N=4 (1,1/1,1,1,1)	0.90			MADE GROUND: Grey, slightly sandy gravel of fine to coarse, angular concrete.																																							
		1.20	ES		1.00			MADE GROUND: Soft to firm, moist to wet, dark grey slightly mottled brown in places, slightly gravelly, very sandy clay. Gravel of fine to coarse, subangular brick fragments. Occasional rootlets.																																							
		1.90	D					End of Borehole at 2.000m																																							
		2.00	SPT	N=6 (1,1/2,1,2,1)	2.00																																										
<table><tr><td colspan="2">Hole Diameter</td><td colspan="2">Casing Diameter</td><td colspan="4">Chiselling</td><td colspan="4">Inclination and Orientation</td></tr><tr><td>Depth Base</td><td>Diameter</td><td>Depth Base</td><td>Diameter</td><td>Depth Top</td><td>Depth Base</td><td>Duration</td><td>Tool</td><td>Depth Top</td><td>Depth Base</td><td>Inclination</td><td>Orientation</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation				Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation												
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation																																							
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation																																				
Remarks 1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 1.50m bgl during drilling. 3. Borehole terminated at 2.00m bgl due to casing going down at an angle, which prevented further drilling. 4. Borehole backfilled with arisings upon completion.																																															

[illegible]

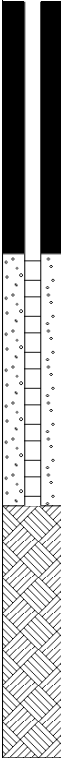
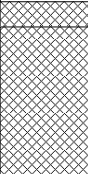
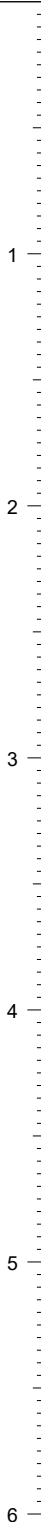
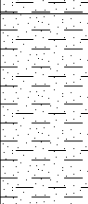
Remarks

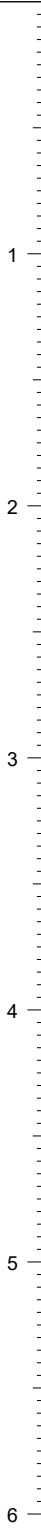
1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.



		<h1>Percussion Drilling Log</h1>									
Project Name: Lidl, 440 Hollinwood Avenue					Client: Lidl Great Britain Ltd				Date: 15/10/2024		
Location: Moston					Contractor: Obsidian Geo-Consulting Ltd						
Project No. : 24-1990-P					Crew Name: Dynamic Sampling UK Ltd				Drilling Equipment: Window Sampling Rig		
Borehole Number WS04		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.18			MADE GROUND: Concrete.			
					0.40			MADE GROUND: Grey, slightly clayey, slightly sandy gravel of fine to coarse, subangular limestone. (sub-base)			
		0.50	ES		0.60			MADE GROUND: Black, slightly clayey, sandy gravel of fine to coarse, subangular to subrounded brick fragments and clinker.			
					0.80			Stiff, grey slightly mottled brown, slightly gravelly, slightly sandy CLAY. Gravel of fine to coarse, subangular to subrounded mudstone.			
		0.90	ES		1.00			GLACIAL TILL			
		1.00	SPT	N=6 (1,2/1,2,1,2)				Stiff, orange brown slightly mottled grey, slightly gravelly, slightly sandy CLAY. Gravel of fine to medium, subangular to subrounded mudstone.			
		1.20	D					GLACIAL TILL			
								Soft to firm, becoming stiff, brown slightly mottled grey, slightly gravelly, sandy CLAY. Gravel of fine to coarse, subangular to subrounded mudstone and sandstone with occasional coal fragments and relic rootlets. At 2.90m is a small pocket of sand.			
		1.80	D					GLACIAL TILL			
		2.00	SPT	N=4 (1,1/1,1,1,1)							
		2.20	D								
											
		3.00	SPT	N=7 (1,1/2,1,2,2)							
		3.20	D								
											
											
											
											
											
											
											
											
											
											
											
											
											
											
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 4.20m bgl during drilling. 3. Gas and groundwater monitoring well installed as detailed above.											

		<h1>Percussion Drilling Log</h1>									
Project Name: Lidl, 440 Hollinwood Avenue				Client: Lidl Great Britain Ltd				Date: 16/10/2024			
Location: Moston				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1990-P				Crew Name: Dynamic Sampling UK Ltd				Drilling Equipment: Window Sampling Rig			
Borehole Number WS05		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.10	SPT	N=50 (25 for 75mm/50 for 35mm)	0.07 0.10			MADE GROUND: Two layers of tarmacadam. MADE GROUND: Grey, slightly sandy gravel of limestone. (sub-base) End of Borehole at 0.100m			
	▼										1
											2
											3
											4
											5
											6
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 0.30m bgl within SPT hole. 3. Borehole terminated at 0.31m bgl due to SPT Refusal. 4. Borehole backfilled with arisings upon completion.											

		<h1>Percussion Drilling Log</h1>									
Project Name: Lidl, 440 Hollinwood Avenue					Client: Lidl Great Britain Ltd				Date: 16/10/2024		
Location: Moston					Contractor: Obsidian Geo-Consulting Ltd						
Project No. : 24-1990-P					Crew Name: Dynamic Sampling UK Ltd				Drilling Equipment: Window Sampling Rig		
Borehole Number WS06		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.10			MADE GROUND TOPSOIL: Grass over dark brown, sandy clay.			
								MADE GROUND: Brown, slightly clayey, slightly sandy gravel of fine to coarse, subangular concrete and limestone. (sub-base)			
		0.30	ES			0.70		Stiff, dark brown, sandy CLAY with abundant decaying wood.			
		0.90	ES					GLACIAL TILL			
		1.00	SPT	N=4 (1,1/1,1,1,1)	1.00			Soft to firm, greyish brown, slightly sandy CLAY with rare fine to coarse, subangular sandstone gravel.			
		1.10	D				GLACIAL TILL				
		1.50	D								
		1.90	D			1.80		Firm, moist, greyish brown, sandy CLAY.			
		2.00	SPT	N=6 (1,1/2,1,2,1)	2.00	GLACIAL TILL					
									No core recovery.		
3.00	SPT	N=15 (2,3/3,4,4,4)	3.00			End of Borehole at 3.000m					
Remarks											
1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 0.30m bgl during drilling. 3. Borehole terminated at 3.00m bgl as the core between 2m and 3m kept slipping out the barrel. 4. Gas and groundwater monitoring well installed as detailed above.											

		<h1>Percussion Drilling Log</h1>									
Project Name: Lidl, 440 Hollinwood Avenue					Client: Lidl Great Britain Ltd				Date: 16/10/2024		
Location: Moston					Contractor: Obsidian Geo-Consulting Ltd						
Project No. : 24-1990-P					Crew Name: Dynamic Sampling UK Ltd				Drilling Equipment: Window Sampling Rig		
Borehole Number WS07		Hole Type WS		Level		Logged By NK		Scale 1:30		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
					0.19			MADE GROUND: Concrete.			
		0.30	ES		0.50			MADE GOURND: Beige, slightly clayey, slightly sandy gravel of fine to coarse, angular to subangular limestone. (sub-base)			
		0.60	ES		0.70			MADE GROUND: Black, gravelly, sandy clay. Gravel of fine to coarse, subangular to subrounded quartzite, sandstone, glass fragments and limestone. Natural organic odour.			
		1.00	SPT	N=0 (0,0/0,0,0,0)	1.00			MADE GROUND: Dark brown, gravelly, sandy clay. Gravel of fine to coarse, subangular brick fragments and sandstone.			
		1.10	D					Very soft to firm, grey, slightly gravelly, slightly sandy CLAY. Gravel of fine to medium, subangular sandstone. Moist from 1.40m. GLACIAL TILL			
		2.00	SPT	N=6 (1,1/2,1,2,1)	2.10			Medium dense, greyish brown, slightly clayey SAND. GLACIAL TILL			
		2.30			2.30			Stiff, brown, sandy CLAY. GLACIAL TILL			
		2.50	D					Loose, wet, brown, slightly clayey SAND with occasional coal fragments. GLACIAL TILL			
		3.00	SPT	N=4 (1,1/1,1,1,1)	3.10			Firm, moist, brown, sandy CLAY with occasional sandstone gravel. GLACIAL TILL			
		3.20	D		3.40						
		4.00	SPT	N=7 (1,2/1,2,2,2)							
		5.00	SPT	N=17 (3,3/4,4,5,4)	5.00						
								End of Borehole at 5.000m			
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
1. Window sample position scanned with CAT and Genny. 2. Groundwater encountered at 3.10m bgl during drilling. 3. Borehole backfilled with arisings upon completion.											

Percussion Drilling Log

Project Name: Lidl, 440 Hollinwood Avenue			Client: Lidl Great Britain Ltd			Date: 16/10/2024		
Location: Moston			Contractor: Obsidian Geo-Consulting Ltd					
Project No. : 24-1990-P			Crew Name: Dynamic Sampling UK Ltd			Drilling Equipment: Window Sampling Rig		
Borehole Number WS08		Hole Type WS		Level		Logged By NK		Scale 1:30
								Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			MADE GROUND: Concrete. Plastic on base of concrete.	
					0.30			MADE GROUND: Brown, sandy gravel of fine to coarse, subangular to subrounded limestone. (sub-base)	
		0.60	ES					MADE GROUND: White, sandy gravel of fine to coarse, subangular limestone.	
		0.90	D		0.80			MADE GROUND: Black, sandy gravel of fine to medium clinker.	
		1.00	SPT	N=1 (1,0/0,1,0,0)	0.90			Stiff, grey, slightly gravelly, slightly silty CLAY. Gravel of fine to coarse, subrounded sandstone and mudstone.	1
		1.20	D		1.00			GLACIAL TILL Very soft, becoming firm to stiff, grey mottled brown, slightly silty CLAY with occasional coal fragments.	
								GLACIAL TILL	
		2.00	SPT	N=12 (3,2/3,3,3,3)	2.00			Medium dense, moist, brown SAND.	2
		2.20	D		2.10			GLACIAL TILL Firm, brown, silty CLAY with rare fine to coarse, subangular to subrounded mudstone and sandstone gravel. Occasional coal fragments. Pink gravel at 3m, possible burnt coal.	
								GLACIAL TILL	
		2.90	D						
		3.00	SPT	N=7 (1,2/2,2,1,2)					3
									
		3.40	D						
									
		4.00	SPT	N=11 (2,3/3,2,3,3)					4
									
									
									
		5.00	SPT	N=16 (3,3/4,4,4,4)	5.00				5
								End of Borehole at 5.000m	
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
 1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.

Project Name: Lidl, 440 Hollinwood Avenue		Client: Lidl Great Britain Ltd		Date: 16/10/2024	
Location: Moston		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1990-P		Crew Name: Dynamic Sampling UK Ltd		Drilling Equipment: Window Sampling Rig	
Borehole Number WS09	Hole Type WS	Level	Logged By NK	Scale 1:30	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.21			MADE GROUND: Concrete.		
		0.30	ES		0.40			MADE GROUND: Brown, slightly sandy, clayey gravel. Gravel of fine to coarse, subangular limestone.		
					0.60			MADE GROUND: Light brown, slightly sandy, slightly clayey gravel of fine to coarse, subangular limestone.		
		0.80	ES					Stiff, grey, slightly gravelly, slightly sandy CLAY. Gravel of fine to coarse, subangular to subrounded mudstone. Natural organic odour. GLACIAL TILL		1
		1.00	SPT	N=5 (1,1/2,1,1,1)	1.00			Firm, dark grey mottled brown, slightly sandy CLAY. GLACIAL TILL		
		1.10	D		1.20			Firm, brown mottled grey and orange brown, sandy CLAY with occasional coal fragments. GLACIAL TILL		
		1.90	D							
		2.00	SPT	N=8 (1,1/2,2,2,2)	2.00			Firm, brown, slightly silty CLAY. GLACIAL TILL		2
		2.20	D		2.40			Firm to stiff, brown, slightly silty CLAY with occasional fine to medium, subrounded mudstone and sandstone gravel as well as coal fragments. GLACIAL TILL		
		2.80	D							
		3.00	SPT	N=7 (1,1/2,2,1,2)						3
		3.80	D							
		4.00	SPT	N=10 (2,3/2,3,3,2)						4
		4.80	D							
		5.00	SPT	N=14 (4,3/4,4,3,3)	5.00					5
										End of Borehole at 5.000m

[illegible]

Remarks
1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.



Project Name: Lidl, 440 Hollinwood Avenue					Client: Lidl Great Britain Ltd					Date: 16/10/2024					
Location: Moston					Contractor: Obsidian Geo-Consulting Ltd										
Project No. : 24-1990-P					Crew Name: Dynamic Sampling UK Ltd					Drilling Equipment: Window Sampling Rig					
Borehole Number WS10			Hole Type WS		Level		Logged By NK			Scale 1:30		Page Number Sheet 1 of 1			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description							
		Depth (m)	Type	Results											
					0.20			MADE GROUND: Concrete.					1 -		
								MADE GROUND: Light brown, slightly sandy gravel of limestone. (sub-base)							
		0.60	ES		N=4 (1,1/1,1,1,1)	0.70			MADE GROUND: Black, sandy CLAY with a natural organic odour.					2 -	
		0.80	ES												
		1.00	SPT			1.00			Soft to firm, grey, slightly sandy CLAY with occasional fine to coarse, subangular to subrounded mudstone and coal fragments. GLACIAL TILL						
		1.30	D												
		1.70	D												
		2.00	SPT	N=7 (1,1/2,1,2,2)	2.20			Firm to stiff, brown, silty CLAY. GLACIAL TILL					3 -		
		2.40	D												
		3.00	SPT	N=11 (2,3/3,2,3,3)	2.80			Stiff, brown, slightly gravelly, sandy CLAY. Gravel of fine to coarse, subangular to subrounded sandstone and mudstone as well as coal fragments. Moist in places. GLACIAL TILL							
		3.10	D												
		4.00	SPT	N=12 (3,3/3,3,3,3)										4 -	
		5.00	SPT	N=15 (3,3/4,4,4,3)	5.00				End of Borehole at 5.000m					5 -	
															6 -
		Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation					
		Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation		
Remarks															
1. Window sample position scanned with CAT and Genny. 2. No groundwater encountered. 3. Borehole backfilled with arisings upon completion.															

Appendix C

Chemical Laboratory Analysis Results



Obsidian Geo-Consulting Ltd
Unit C4
Castle Vale Enterprise Park
Park Lane
Birmingham
West Midlands
B35 6LJ

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steven.dempsey@obsidian-geoconsulting.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 : 24-048752

Replaces Analytical Report Number: 24-048752, issue no. 1
Additional analysis undertaken.
Asbestos Quantification added to 353414, as per client's request

Project / Site name:	Lidl 440 Hollinwood Avenue Moston	Samples received on:	18/10/2024
Your job number:	24-1990-P	Samples instructed on/ Analysis started on:	18/10/2024
Your order number:	PO-01633	Analysis completed by:	31/10/2024
Report Issue Number:	2	Report issued on:	06/11/2024
Samples Analysed:	25 soil samples - 3 2stage WAC samples		

Signed: 

Claire Bancroft
Customer Service Advisor
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: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Lab Sample Number	353405	353406	353407	353408	353409
Sample Reference	WS01	WS01	WS02	WS02	WS02
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.80	0.20	0.85	1.20
Date Sampled	15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	83.2	< 0.1	74.5	44.7	< 0.1
Moisture Content	%	0.01	NONE	6.3	33	3.5	9.2	14
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.8	0.7	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	-	KJK	KJK	-	KJK
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	10.6	-	-	9.5	-
pH (L099)	pH Units	N/A	MCERTS	-	7.1	9.6	-	7.9
Total Cyanide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	210	130	-	46
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	104	64	-	22.8
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	-	12	4.2	-	3.3
Organic Matter	%	0.1	MCERTS	-	18	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	1.3
Total Organic Carbon (TOC) – Manual	%	0.1	MCERTS	0.4	-	-	2.6	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	0.9	-	-	5.7	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	58	-	-	21	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	1.8	0.06	2.6	0.06
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.32	0.06	1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.98	0.24	21	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	2.7	0.28	25	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	9.5	1.2	120	0.1
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.32	39	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.8	1.3	120	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	2.8	1.1	92	0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.58	0.54	39	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.79	0.51	36	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.69	0.6	39	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.25	0.26	15	< 0.05

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353405	353406	353407	353408	353409
Sample Reference				WS01	WS01	WS02	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.20	0.85	1.20
Date Sampled				15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.53	0.53	33	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.26	0.26	17	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	2.8	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.28	0.29	18	< 0.05
Coronene	mg/kg	0.05	NONE	< 0.05	-	-	9.6	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	23.3	7.64	-	< 0.80
Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	-	-	620	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	11	2.8	-	2.2
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.7	0.5	-	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	0.4	1.4	-	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	< 1.2	< 1.2	-	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	18	9.4	-	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	33	23	-	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	36	30	-	8.8
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	17	12	-	20
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	46	60	-	42

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	0.021	< 0.010	-	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	0.067	< 0.010	-	0.051
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	49	< 1.0	-	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	420	< 2.0	-	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	770	< 8.0	-	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	270	8.4	-	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	1500	< 10	-	< 10

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	< 0.010	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	0.16	< 0.020	-	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	30	< 1.0	-	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	320	< 2.0	-	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	400	11	-	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	120	11	-	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	880	22	-	< 10

Mineral Oil (EC10 - EC40) _{EH_CU_1D_AL}	mg/kg	10	NONE	75	-	-	380	-
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VOCs

Chloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353405	353406	353407	353408	353409
Sample Reference				WS01	WS01	WS02	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.20	0.85	1.20
Date Sampled				15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	< 5.0	-	-	-
Chloroform	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	< 7.0	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	< 10	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	< 10	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	< 6.0	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	54	< 8.0	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Bromoform	µg/kg	5	MCERTS	-	< 5.0	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	-	19	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	< 5.0	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	31	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	65	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	180	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	26	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	29	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	< 8.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	-
Total BTEX	µg/kg	10	MCERTS	< 10	-	-	< 10	-

Analytical Report Number: 24-048752
 Project / Site name: Lidl 440 Hollinwood Avenue Moston
 Your Order No: PO-01633

Lab Sample Number				353405	353406	353407	353408	353409
Sample Reference				WS01	WS01	WS02	WS02	WS02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.20	0.85	1.20
Date Sampled				15/10/2024	15/10/2024	15/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	-	-	< 0.007	-

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

Analytical Report Number: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Lab Sample Number	353410	353411	353412	353413	353414
Sample Reference	WS03	WS04	WS06	WS07	WS07
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.10	0.50	0.30	0.30	0.60
Date Sampled	15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	80.4	77.6	< 0.1
Moisture Content	%	0.01	NONE	15	17	4.9	3.3	14
Total mass of sample received	kg	0.1	NONE	0.8	0.7	0.7	0.8	0.8

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Detected
Asbestos Analyst ID	N/A	N/A	N/A	KJK	KJK	KWB	-	KWB
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	Detected
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	Detected
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	Not-detected

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	0.132
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	Loose Fibres, Loose Fibrous Debris
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General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	8.5	-
pH (L099)	pH Units	N/A	MCERTS	7.6	8	9	-	8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	660	210	80	-	230
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	328	105	40.1	-	117
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	< 1.0	6.5	2.1	-	41
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	2.4	3	-	-	7.3
Total Organic Carbon (TOC) – Manual	%	0.1	MCERTS	-	-	-	0.3	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	1.8	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	30	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	0.35	0.32	0.08	< 0.05	0.64
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.76
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.11	< 0.05	0.07	9.8
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.08	< 0.05	0.06	9.4
Phenanthrene	mg/kg	0.05	MCERTS	0.2	0.91	0.3	0.42	70
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.17	0.07	0.11	21
Fluoranthene	mg/kg	0.05	MCERTS	0.18	1.8	0.75	0.82	140
Pyrene	mg/kg	0.05	MCERTS	0.17	1.7	0.71	0.71	120
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.75	0.4	0.3	48
Chrysene	mg/kg	0.05	MCERTS	0.11	1.1	0.45	0.42	49
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.1	0.97	0.51	0.46	69
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.47	0.35	0.2	24

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353410	353411	353412	353413	353414
Sample Reference				WS03	WS04	WS06	WS07	WS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	0.50	0.30	0.30	0.60
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.67	0.39	0.46	63
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.36	0.21	0.19	25
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	4.4
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.47	0.27	0.27	28
Coronene	mg/kg	0.05	NONE	-	-	-	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.11	9.8	4.5	-	677
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	4.51	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	28	37	4.2	-	17
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.6	0.5	-	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	< 0.2	0.5	-	1.4
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	-	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	23	7.3	-	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	2900	88	16	-	200
Lead (aqua regia extractable)	mg/kg	1	MCERTS	170	45	23	-	170
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	40	44	6	-	43
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	1.3
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	520	61	42	-	280

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	-	-	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	0.018	-	-	0.012
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	-	< 0.010	-	-	0.17
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-	< 1.0	-	-	2.8
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-	4.3	-	-	40
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	< 8.0	-	-	190
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-	61	-	-	700
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-	65	-	-	930

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	-	-	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	< 0.010	-	-	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	< 0.020	-	-	0.029
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	< 1.0	-	-	3.4
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	2.4	-	-	75
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	16	-	-	990
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	32	-	-	2000
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	49	-	-	3000

Mineral Oil (EC10 - EC40) _{EH_CU_1D_AL}	mg/kg	10	NONE	-	-	-	47	-
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VOCs

Chloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Chloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Bromomethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353410	353411	353412	353413	353414
Sample Reference				WS03	WS04	WS06	WS07	WS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	0.50	0.30	0.30	0.60
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	-	< 5.0	-	-	< 5.0
Chloroform	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2-Dichloroethane	µg/kg	7	MCERTS	-	< 7.0	-	-	< 7.0
1,1-Dichloropropene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2-Dichloropropane	µg/kg	6	MCERTS	-	< 6.0	-	-	< 6.0
Trichloroethene	µg/kg	10	MCERTS	-	< 10	-	-	< 10
Dibromomethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Bromodichloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	< 10	-	-	< 10
Toluene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	< 6.0	-	-	< 6.0
1,3-Dichloropropane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Dibromochloromethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Tetrachloroethene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Chlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	-	< 8.0	-	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Bromoform	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	-	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	< 5.0	-	-	< 5.0
Bromobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
n-Propylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Total BTEX	µg/kg	10	MCERTS	-	-	-	< 10	-

Analytical Report Number: 24-048752
 Project / Site name: Lidl 440 Hollinwood Avenue Moston
 Your Order No: PO-01633

Lab Sample Number				353410	353411	353412	353413	353414
Sample Reference				WS03	WS04	WS06	WS07	WS07
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.10	0.50	0.30	0.30	0.60
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	< 0.007	-

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

Analytical Report Number: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Lab Sample Number	353415	353416	353417	353418	353419
Sample Reference	WS08	WS09	WS10	WS01	WS01
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.60	0.30	0.60	1.30	2.10
Date Sampled	16/10/2024	16/10/2024	16/10/2024	15/10/2024	15/10/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	94.4	58.4	95.3	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	0.74	4.9	0.89	17	14
Total mass of sample received	kg	0.1	NONE	0.8	0.8	0.8	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Asbestos Analyst ID	N/A	N/A	N/A	KWB	KWB	KWB	-	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	8.8	9.3	8.6	7.6	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	47	140	28	21	16
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	23.3	69.8	14.1	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	10.4	8.14
Sulphide	mg/kg	1	MCERTS	4.1	7.6	2.6	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	0.4	-	-	-	-
Total Organic Carbon (TOC) – Manual	%	0.1	MCERTS	-	-	-	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	-	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	-	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.09	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.09	0.26	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.15	0.31	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.14	0.25	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	0.1	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.11	0.12	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.14	0.11	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.06	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353415	353416	353417	353418	353419
Sample Reference				WS08	WS09	WS10	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.30	0.60	1.30	2.10
Date Sampled				16/10/2024	16/10/2024	16/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.06	-	-
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	1.34	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.1	5.8	1.4	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.5	0.4	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	1.1	1.2	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	4	8.9	3.9	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.1	10	4.2	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.2	9.2	8.6	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	2.4	9.5	4.1	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	16	96	19	-	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.01	MCERTS	< 0.010	-	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	-	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	-	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	-	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	16	-	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	16	-	-	-	-

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

Mineral Oil (EC10 - EC40) _{EH_CU_1D_AL}	mg/kg	10	NONE	-	-	-	-	-
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VOCs

Chloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353415	353416	353417	353418	353419
Sample Reference				WS08	WS09	WS10	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.30	0.60	1.30	2.10
Date Sampled				16/10/2024	16/10/2024	16/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	-	-
Chloroform	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	< 10	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	-	-	-	-
Styrene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Bromoform	µg/kg	5	MCERTS	< 5.0	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	-
Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353415	353416	353417	353418	353419
Sample Reference				WS08	WS09	WS10	WS01	WS01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.30	0.60	1.30	2.10
Date Sampled				16/10/2024	16/10/2024	16/10/2024	15/10/2024	15/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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

Analytical Report Number: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Lab Sample Number	353420	353421	353422	353423	353424
Sample Reference	WS04	WS04	WS06	WS06	WS06
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.20	1.80	1.10	1.50	1.90
Date Sampled	15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	17	18	16	14
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	5.5	7.5	7.5	8	7.9
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	57	73	37	28	38
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	28.3	36.3	18.3	13.7	19
Sulphide	mg/kg	1	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC) – Manual	%	0.1	MCERTS	-	-	-	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	-	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	-	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353420	353421	353422	353423	353424
Sample Reference				WS04	WS04	WS06	WS06	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	1.80	1.10	1.50	1.90
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

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

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	-

Mineral Oil (EC10 - EC40) _{EH_CU_1D_AL}	mg/kg	10	NONE	-	-	-	-	-
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VOCs

Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353420	353421	353422	353423	353424
Sample Reference				WS04	WS04	WS06	WS06	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	1.80	1.10	1.50	1.90
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353420	353421	353422	353423	353424
Sample Reference				WS04	WS04	WS06	WS06	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	1.80	1.10	1.50	1.90
Date Sampled				15/10/2024	15/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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

Analytical Report Number: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Lab Sample Number	353425	353426	353427	353428	353429
Sample Reference	WS08	WS08	WS09	WS09	WS10
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	1.20	1.10	2.20	2.40
Date Sampled	16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	9.7	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	17	16	14	17	18
Total mass of sample received	kg	0.1	NONE	0.5	0.5	0.5	0.5	0.5

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-	-	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-	-
Actinolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	-	-	-	-	-

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	-	-	-	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	-	-
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General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	8	7.8	7.7	8.1	8
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	97	140	39	62	30
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	48.3	68.8	19.6	31.1	15.1
Sulphide	mg/kg	1	MCERTS	-	-	-	-	-
Organic Matter	%	0.1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC) – Manual	%	0.1	MCERTS	-	-	-	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	-	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	-	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353425	353426	353427	353428	353429
Sample Reference				WS08	WS08	WS09	WS09	WS10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	1.20	1.10	2.20	2.40
Date Sampled				16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	-	-
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	-	-	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

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

TPHCWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.01	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.02	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-	-	-	-	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-	-	-	-	-

Mineral Oil (EC10 - EC40) _{EH_CU_1D_AL}	mg/kg	10	NONE	-	-	-	-	-
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VOCs

Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

Your Order No: PO-01633

Lab Sample Number				353425	353426	353427	353428	353429
Sample Reference				WS08	WS08	WS09	WS09	WS10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	1.20	1.10	2.20	2.40
Date Sampled				16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	8	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-

Analytical Report Number: 24-048752
 Project / Site name: Lidl 440 Hollinwood Avenue Moston
 Your Order No: PO-01633

Lab Sample Number				353425	353426	353427	353428	353429
Sample Reference				WS08	WS08	WS09	WS09	WS10
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	1.20	1.10	2.20	2.40
Date Sampled				16/10/2024	16/10/2024	16/10/2024	16/10/2024	16/10/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

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



Analytical Report Number: 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston
Your Order No: PO-01633

Certificate of Analysis - Asbestos Quantification

Methods:

Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

Quantitative Analysis

The analysis was carried out using our documented in-house method A006 based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

Sample Number	Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	Asbestos by hand picking/weighing (%)	Total % Asbestos in Sample
353414	WS07	0.60	163	Loose Fibres, Loose Fibrous Debris	Amosite & Chrysotile	0.132	0.132

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

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Waste Acceptance Criteria Analytical Results

Report No:	24-048752						
				Client: OBSIDIAN			
Location	Lidl 440 Hollinwood Avenue Moston						
Lab Reference (Sample Number)	353405			Landfill Waste Acceptance Criteria			
Sampling Date	15/10/2024			Limits			
Sample ID	WS01			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	0.4			3%	5%	6%	
Loss on Ignition (%) **	0.9			--	--	10%	
BTEX (µg/kg)**	< 10			6000	--	--	
Sum of PCBs (mg/kg)**	< 0.007			1	--	--	
Mineral Oil (mg/kg) <small>EH ID CU AL</small>	75			500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85			100	--	--	
pH (units)**	10.6			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	58			--	To be evaluated	To be evaluated	
Eluate Analysis				Limit values for compliance leaching test			
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.0020	< 0.0020		< 0.020	0.5	2	25
Barium *	0.068	0.038		0.42	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0093	0.0035		0.043	0.5	10	70
Copper *	0.097	0.021		0.33	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.0054	< 0.0014		< 0.014	0.5	10	30
Nickel *	0.0082	0.0025		0.033	0.4	10	40
Lead *	< 0.0017	0.0053		0.046	0.5	10	50
Antimony *	< 0.0020	< 0.0020		< 0.020	0.06	0.7	5
Selenium *	< 0.0050	< 0.0050		< 0.050	0.1	0.5	7
Zinc *	0.0019	0.0096		0.084	4	50	200
Chloride *	< 4.0	< 4.0		17	800	15000	25000
Fluoride*	0.90	0.39		4.7	10	150	500
Sulphate *	15	4.7		63	1000	20000	50000
TDS*	240	42		720	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	14.3	13		129	500	800	1000
Leach Test Information							
Stone Content (%)	83.2						
Sample Mass (kg)	0.8						
Dry Matter (%)	94						
Moisture (%)	6.3						
Stage 1							
Volume Eluate L2 (litres)	0.339						
Filtered Eluate VE1 (litres)	0.26						
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.



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Report No:	24-048752						
					Client: OBSIDIAN		
Location	Lidl 440 Hollinwood Avenue Moston						
Lab Reference (Sample Number)	353408				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	15/10/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS02						
Depth (m)	0.85						
Solid Waste Analysis							
TOC (%)**	2.6				3%	5%	6%
Loss on Ignition (%) **	5.7				--	--	10%
BTEX (µg/kg)**	< 10				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) ^{EH, I2, CU, AL}	380				500	--	--
Total PAH (WAC-17) (mg/kg)	620				100	--	--
pH (units)**	9.5				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	21				--	To be evaluated	To be evaluated
Eluate Analysis					Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	0.025	0.013		0.14	0.5	2	25
Barium *	0.067	0.025		0.29	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0022	0.0013		0.014	0.5	10	70
Copper *	0.41	0.24		2.6	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.014	0.0022		0.034	0.5	10	30
Nickel *	0.011	0.0042		0.050	0.4	10	40
Lead *	0.080	0.040		0.44	0.5	10	50
Antimony *	0.092	0.016		0.24	0.06	0.7	5
Selenium *	0.0076	< 0.0050		< 0.050	0.1	0.5	7
Zinc *	0.015	0.0094		0.10	4	50	200
Chloride *	48	9.5		130	800	15000	25000
Fluoride*	0.38	0.24		2.6	10	150	500
Sulphate *	140	39		500	1000	20000	50000
TDS*	180	66		780	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	41.1	23		245	500	800	1000
Leach Test Information							
Stone Content (%)	44.7						
Sample Mass (kg)	0.7						
Dry Matter (%)	91						
Moisture (%)	9.2						
Stage 1							
Volume Eluate L2 (litres)	0.333						
Filtered Eluate VE1 (litres)	0.18						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation							
** = UKAS accredited (liquid eluate analysis only)							
** = 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.

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Report No:	24-048752						
					Client: OBSIDIAN		
Location	Lidl 440 Hollinwood Avenue Moston						
Lab Reference (Sample Number)	353413				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	16/10/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS07						
Depth (m)	0.30						
Solid Waste Analysis							
TOC (%)**	0.3				3%	5%	6%
Loss on Ignition (%) **	1.8				--	--	10%
BTEX (µg/kg)**	< 10				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) <small>EH, ID, CU, AL</small>	47				500	--	--
Total PAH (WAC-17) (mg/kg)	4.51				100	--	--
pH (units)**	8.5				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	30				--	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 *	< 0.0020	< 0.0020		< 0.020	0.5	2	25
Barium *	0.084	0.12		1.1	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0046	< 0.00060		0.011	0.5	10	70
Copper *	0.0048	0.0090		0.085	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.0061	< 0.0014		< 0.014	0.5	10	30
Nickel *	0.0017	< 0.00090		< 0.0090	0.4	10	40
Lead *	0.0036	< 0.0017		< 0.017	0.5	10	50
Antimony *	0.0029	< 0.0020		< 0.020	0.06	0.7	5
Selenium *	< 0.00050	< 0.0050		< 0.050	0.1	0.5	7
Zinc *	0.0081	0.0058		0.061	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.94	0.19		2.9	10	150	500
Sulphate *	15	2.7		43	1000	20000	50000
TDS*	57	39		410	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	7.87	9.7		94.3	500	800	1000
Leach Test Information							
Stone Content (%)	77.6						
Sample Mass (kg)	0.8						
Dry Matter (%)	97						
Moisture (%)	3.3						
Stage 1							
Volume Eluate L2 (litres)	0.340						
Filtered Eluate VE1 (litres)	0.23						
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 : 24-048752
Project / Site name: Lidl 440 Hollinwood Avenue Moston

* 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 *
353405	WS01	None Supplied	0.3	Brown clay and sand with stones
353406	WS01	None Supplied	0.8	Brown loam and clay with gravel
353407	WS02	None Supplied	0.2	Brown clay and sand with stones
353408	WS02	None Supplied	0.85	Brown clay and loam with gravel and stones
353409	WS02	None Supplied	1.2	Brown clay and sand
353410	WS03	None Supplied	1.1	Brown clay and sand with gravel
353411	WS04	None Supplied	0.5	Brown loam and sand with gravel
353412	WS06	None Supplied	0.3	Brown clay and sand with gravel and stones
353413	WS07	None Supplied	0.3	Brown clay and sand with stones
353414	WS07	None Supplied	0.6	Brown clay and loam with gravel
353415	WS08	None Supplied	0.6	Brown sand with stones
353416	WS09	None Supplied	0.3	Brown clay and sand with gravel and stones
353417	WS10	None Supplied	0.6	Brown sand with stones
353418	WS01	None Supplied	1.3	Brown clay and sand with gravel
353419	WS01	None Supplied	2.1	Brown sandy clay with gravel
353420	WS04	None Supplied	1.2	Brown clay and sand with gravel
353421	WS04	None Supplied	1.8	Brown clay and sand
353422	WS06	None Supplied	1.1	Brown clay and sand with gravel
353423	WS06	None Supplied	1.5	Brown clay and sand
353424	WS06	None Supplied	1.9	Brown clay and sand with gravel
353425	WS08	None Supplied	0.9	Brown clay and sand with gravel and stones
353426	WS08	None Supplied	1.2	Brown clay
353427	WS09	None Supplied	1.1	Brown clay
353428	WS09	None Supplied	2.2	Brown clay
353429	WS10	None Supplied	2.4	Brown clay

Analytical Report Number : 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

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
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Asbestos Quantification - Gravimetric	Asbestos quantification by gravimetric method - in house method based on references	HSE Report No: 83/1996, HSG 248 (2021), HSG 264 (2012) & SCA Blue Book (draft)	A006B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode	In-house method	L010-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Organic matter in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L023B	D	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L023B	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
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.	L031B	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.	L033B	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.	L037B	W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS

Analytical Report Number : 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

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	L039B	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	L039B	W	ISO 17025
Preparation WAC leachate		In-house method	L043B	W	NONE
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 on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	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
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic	In-house method	L076B/L088-PL	D/W	MCERTS
Total petroleum hydrocarbons by GC-FID/GC-MS HS in soil	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS	In-house method	L076B/L088-PL	D/W	NONE
Hexavalent chromium in soil (low level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	NONE
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	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS

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

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

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

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

Analytical Report Number : 24-048752

Project / Site name: Lidl 440 Hollinwood Avenue Moston

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
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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.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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

The result for sum should be interpreted with caution

Appendix D

Geotechnical Laboratory Analysis Results



GEOLABS Limited
Unit D3 HRS Business Park
Granby Avenue
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B33 0SJ

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Obsidian Geo-Consulting Limited
Unit C4 Castle Vale Enterprise Park
Park Lane
Birmingham
B35 6LJ

29 October 2024

Report No : GEO/41437/01

Page 1 of 1

For the attention of Ms N Kimber

Our ref	GEO / 41437	Date samples received	24/10/2024
Your ref	24-1990-P	Date written instructions received	24/10/2024
Order ref	PO-01634	Date testing commenced	25/10/2024
		Date of sample disposal	26/11/2024

Project **LIDL, 440 HOLLINWOOD AVENUE, MOSTON**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	~	Liquid & Plastic Limits Summary
~	6	Water Content
2	6	Liquid & Plastic Limits

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**



J A Reynolds
Director

Test Type:	2 - 4 point 80g / 30° fall cone method.	Sample condition:	1 - As Received 2 - Air Dried 3 - Washed & Air Dried
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J A Reynolds - Director
29/10/2024

**LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P**



LIQUID AND PLASTIC LIMITS

Location WS03
Depth (m) 1.50
Sample Type D

Description:

Brownish grey sandy CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 23.2 %

Estimated percentage passing 425µm sieve : 99 %

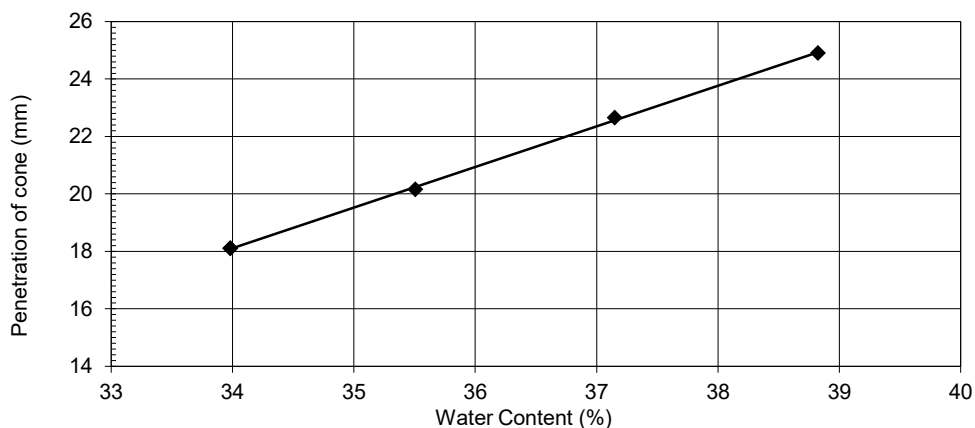
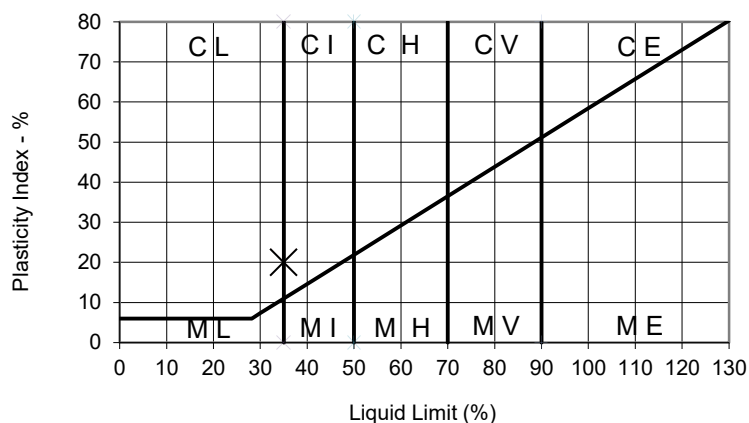
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 35 %

Plastic Limit : 15 %

Plasticity Index : 20 %

Equivalent Water Content of material passing 425µm sieve : 23.5 %

Liquidity Index : 0.43



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P



LIQUID AND PLASTIC LIMITS

Location WS07
Depth (m) 1.10
Sample Type D

Description:

Brownish grey mottled dark brown sandy CLAY with some fine to medium gravel.

Preparation : Particles >425µm removed by wet sieving and air drying.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 22.7 %

Measured percentage passing 425µm sieve : 85 %

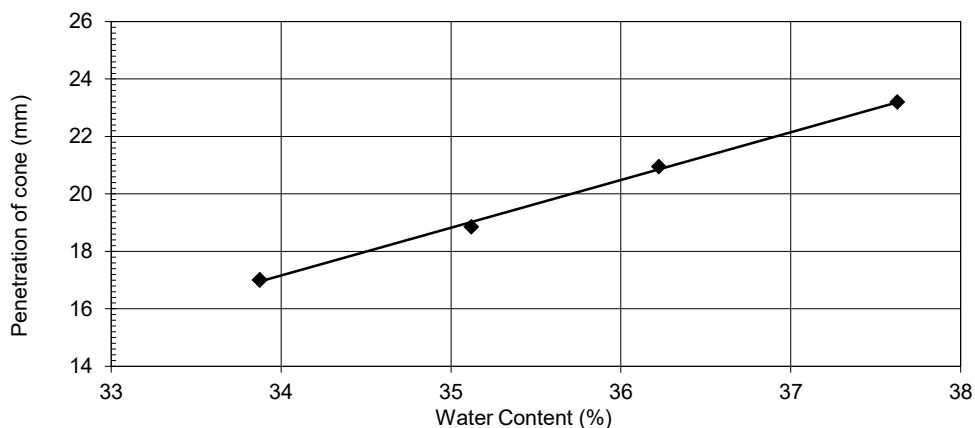
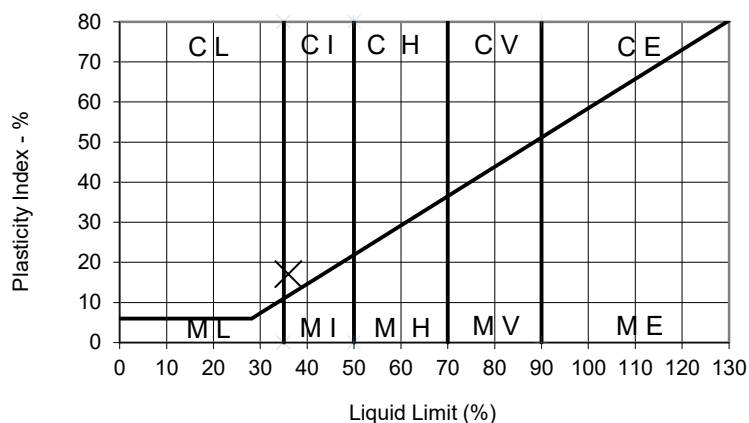
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 36 %

Plastic Limit : 19 %

Plasticity Index : 17 %

Equivalent Water Content of material passing 425µm sieve : 26.9 %

Liquidity Index : 0.46



Tested by AD
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J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

**LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P**



LIQUID AND PLASTIC LIMITS

Location WS08
Depth (m) 2.20
Sample Type D

Description:

Brownish grey slightly sandy CLAY with rare fine to medium gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 22.4 %

Estimated percentage passing 425µm sieve : 99 %

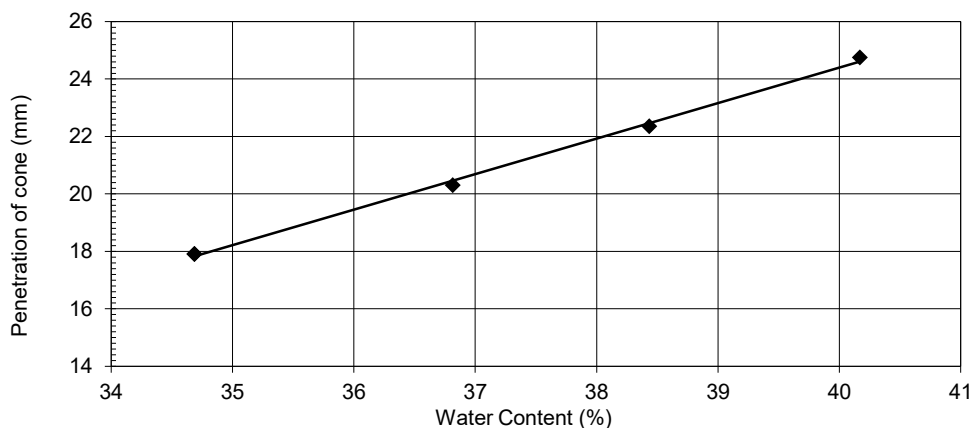
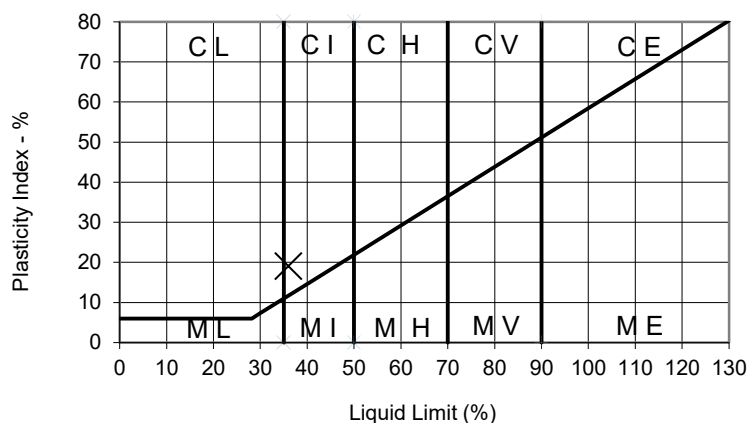
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 36 %

Plastic Limit : 17 %

Plasticity Index : 19 %

Equivalent Water Content of material passing 425µm sieve : 22.7 %

Liquidity Index : 0.30



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

**LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P**



LIQUID AND PLASTIC LIMITS

Location WS09
Depth (m) 0.80
Sample Type D

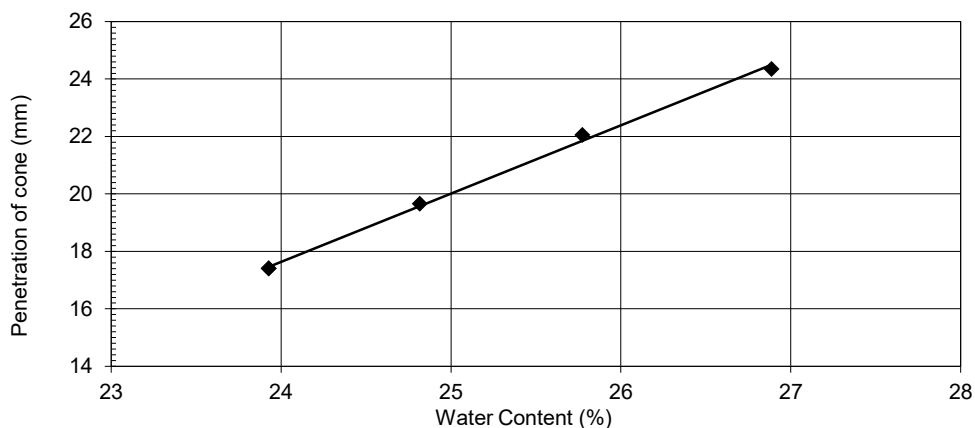
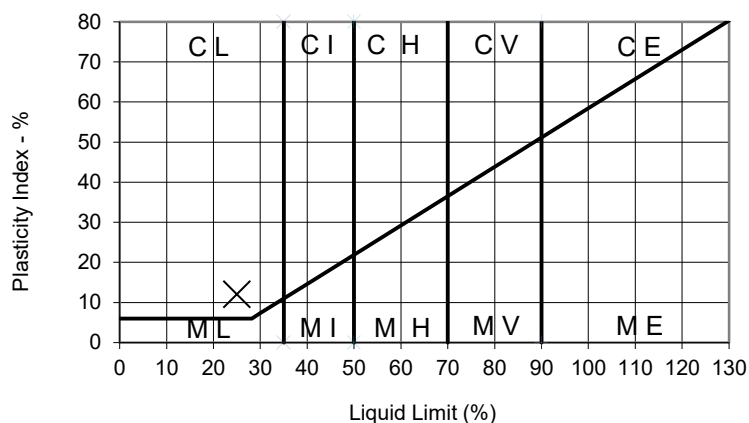
Description:

Brownish grey very sandy CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 14.2 %
Estimated percentage passing 425µm sieve : 98 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 25 %
Plastic Limit : 13 %
Plasticity Index : 12 %

Equivalent Water Content of material passing 425µm sieve : 14.5 %
Liquidity Index : 0.13



Tested by AD
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J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

**LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P**



LIQUID AND PLASTIC LIMITS

Location WS10
Depth (m) 1.30
Sample Type D

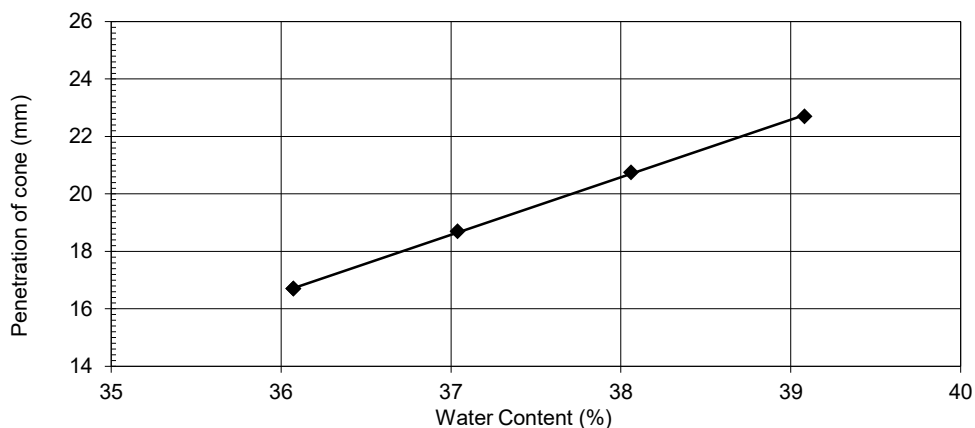
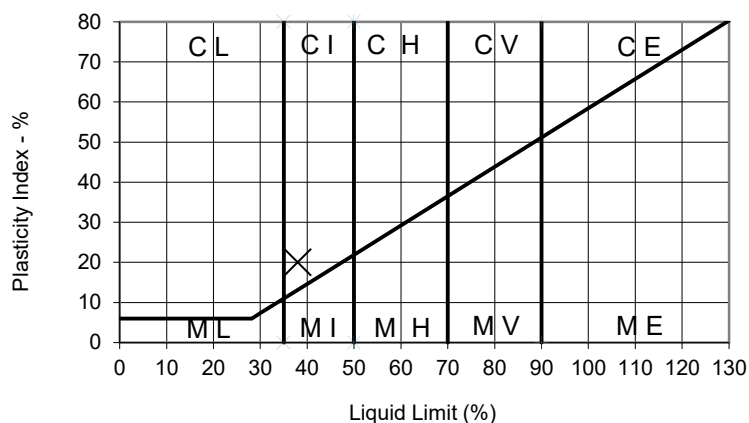
Description:

Brownish grey mottled greyish brown slightly sandy CLAY.

Preparation : Sample as received.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 26.7 %
Estimated percentage passing 425µm sieve : 100 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 38 %
Plastic Limit : 18 %
Plasticity Index : 20 %

Equivalent Water Content of material passing 425µm sieve : 26.7 %
Liquidity Index : 0.44



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

**LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P**



LIQUID AND PLASTIC LIMITS

Location WS10
Depth (m) 1.70
Sample Type D

Description:

Brownish grey CLAY with rare fine gravel.

Preparation : Sample as received with discrete coarse particles removed by hand.

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 21.8 %

Estimated percentage passing 425µm sieve : 99 %

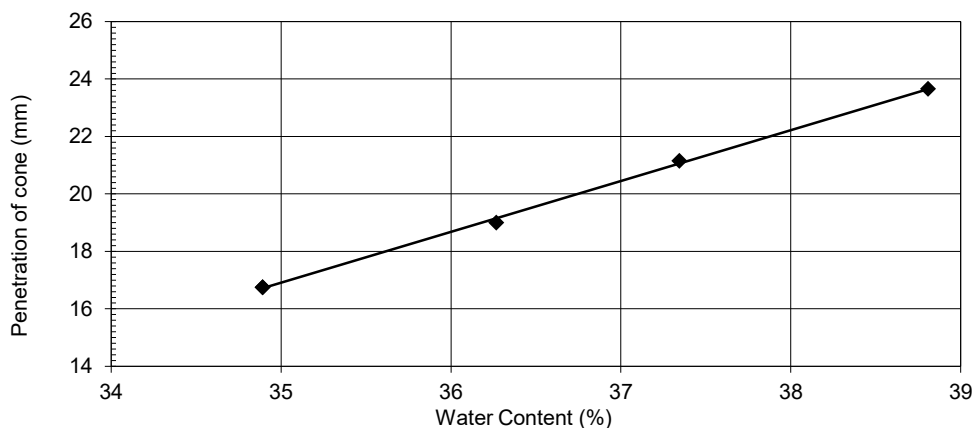
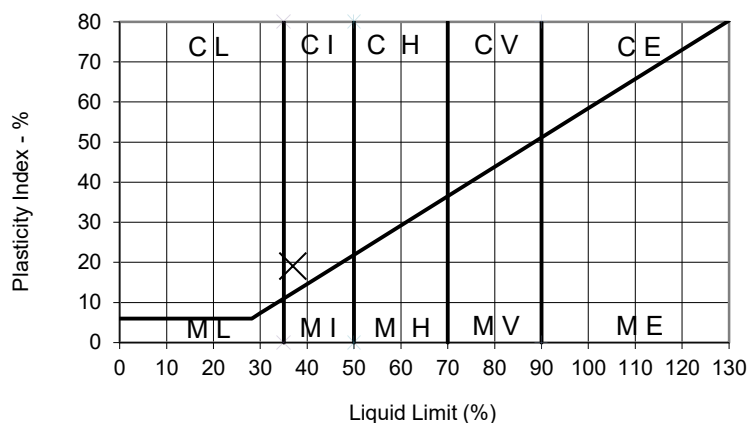
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 37 %

Plastic Limit : 18 %

Plasticity Index : 19 %

Equivalent Water Content of material passing 425µm sieve : 22.1 %

Liquidity Index : 0.22



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
29/10/2024

Project Number:

GEO / 41437

Project Name:

LIDL, 440 HOLLINWOOD AVENUE, MOSTON
24-1990-P



Appendix E

OB-Screen Human Health Screening Assessment



OBScreen Human Health Screening Assessment

Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
Assessment Date:	28/10/2024
End Use Scenario:	Commercial 2.5% SOM

Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
End Use Scenario:	Commercial 2.5% SOM

Metals & Asbestos		Exploratory Hole Ref		WS01	WS02	WS02	WS03	WS04	WS06	WS07	WS08	WS09	WS10
		Additional Ref											
		Sample Depth (m)		0.8	0.2	1.2	1.1	0.5	0.3	0.6	0.6	0.3	0.6
Determinand	Screening Value	Source	Units										
Arsenic (As)	640	C4SL	mg/kg	11	2.8	2.2	28	37	4.2	17	1.1	5.8	1.4
W/S Boron	240,000	S4UL	mg/kg	1.7	0.5	0.7	0.7	0.6	0.5	1	0.5	0.5	0.4
Cadmium (Cd)	410	C4SL	mg/kg	0.4	1.4	< 0.2	0.6	< 0.2	0.5	1.4	0.7	1.1	1.2
Chromium (hexavalent)	49	C4SL	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Copper (Cu)	68,000	S4UL	mg/kg	33	23	30	2900	88	16	200	5.1	10	4.2
Lead (Pb)	2,300	C4SL	mg/kg		30	8.8	170	45	23	170	9.2	9.2	8.6
Mercury (Hg)	1,100	S4UL	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (Ni)	980	S4UL	mg/kg	17	12	20	40	44	6	43	2.4	9.5	4.1
Selenium (Se)	12,000	S4UL	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	< 1.0
Zinc (Zn)	730,000	S4UL	mg/kg	46	60	42	520	61	42	280	16	96	19
Cyanide	34	OBScreen	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Asbestos Screen	Detection	OBScreen	-	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Detected	Not-detected	Not-detected	Not-detected
Asbestos Quantification	Detection	OBScreen	%							0.132			

Concentrations Highlighted in Red Exceed their Adopted Screening Value

Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
End Use Scenario:	Commercial 2.5% SOM

PAH Based on 2.5% SOM		Exploratory Hole Ref		WS01	WS01	WS02	WS02	WS02	WS03	WS04	WS06	WS07	WS07	WS08	WS09	WS10
		Additional Ref		WAC			WAC			WAC						
		Sample Depth (m)		0.3	0.8	0.2	0.85	1.2	1.1	0.5	0.3	0.3	0.6	0.6	0.3	0.6
Determinand	Screening Value	Source	Units													
Naphthalene	460	S4UL	mg/kg	< 0.05	1.8	0.06	2.6	0.06	0.35	0.32	0.08	< 0.05	0.64	< 0.05	0.09	< 0.05
Acenaphthylene	97,000	S4UL	mg/kg	< 0.05	0.32	0.06	1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.76	< 0.05	< 0.05	< 0.05
Acenaphthene	97,000	S4UL	mg/kg	< 0.05	0.98	0.24	21	< 0.05	< 0.05	0.11	< 0.05	0.07	9.8	< 0.05	< 0.05	< 0.05
Fluorene	68,000	S4UL	mg/kg	< 0.05	2.7	0.28	25	< 0.05	< 0.05	0.08	< 0.05	0.06	9.4	< 0.05	< 0.05	< 0.05
Phenanthrene	22,000	S4UL	mg/kg	< 0.05	9.5	1.2	120	0.1	0.2	0.91	0.3	0.42	70	< 0.05	0.09	0.26
Anthracene	540,000		mg/kg		< 0.05	0.32	39	< 0.05	< 0.05	0.17	0.07	0.11	21	< 0.05	< 0.05	0.07
Fluoranthene	23,000	S4UL	mg/kg	< 0.05	1.8	1.3	120	< 0.05	0.18	1.8	0.75	0.82	140	< 0.05	0.15	0.31
Pyrene	54,000	S4UL	mg/kg	< 0.05	2.8	1.1	92	0.05	0.17	1.7	0.71	0.71	120	< 0.05	0.14	0.25
Benzo(a)anthracene	170	S4UL	mg/kg	< 0.05	0.58	0.54	39	< 0.05	< 0.05	0.75	0.4	0.3	48	< 0.05	0.07	0.1
Chrysene	350	S4UL	mg/kg	< 0.05	0.79	0.51	36	< 0.05	0.11	1.1	0.45	0.42	49	< 0.05	0.11	0.12
Benzo(b)fluoranthene	44	S4UL	mg/kg	< 0.05	0.69	0.6	39	< 0.05	0.1	0.97	0.51	0.46	69	< 0.05	0.14	0.11
Benzo(k)fluoranthene	1,200	S4UL	mg/kg	< 0.05	0.25	0.26	15	< 0.05	< 0.05	0.47	0.35	0.2	24	< 0.05	< 0.05	0.06
Benzo(a)pyrene	35	S4UL	mg/kg	< 0.05	0.53	0.53	33	< 0.05	< 0.05	0.67	0.39	0.46	63	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	510	S4UL	mg/kg	< 0.05	0.26	0.26	17	< 0.05	< 0.05	0.36	0.21	0.19	25	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	3.6	S4UL	mg/kg	< 0.05	< 0.05	0.07	2.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	4.4	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	4,000	S4UL	mg/kg	< 0.05	0.28	0.29	18	< 0.05	< 0.05	0.47	0.27	0.27	28	< 0.05	< 0.05	0.06
Total Phenols (monohydric)	690	S4UL	mg/kg		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0

Concentrations Highlighted in Red Exceed their Adopted Screening Value

Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
End Use Scenario:	Commercial 2.5% SOM

TPH, BTEX & MTBE Based on 2.5% SOM		Exploratory Hole Ref		WS01	WS01	WS02	WS02	WS02	WS04	WS07	WS07	WS08
		Additional Ref		WAC			WAC			WAC		
		Sample Depth (m)		0.3	0.8	0.2	0.85	1.2	0.5	0.3	0.6	0.6
Determinand	Screening Value	Source	Units									
TPH												
Aliphatic >C5 - C6	5,900	S4UL	mg/kg	< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010	
Aliphatic >C6 - C8	17,000	S4UL	mg/kg	0.021	< 0.010		< 0.010	0.018		0.012	< 0.010	
Aliphatic >C8 - C10	4,800	S4UL	mg/kg	0.067	< 0.010		0.051	< 0.010		0.17	< 0.010	
Aliphatic >C10 - C12	23,000	S4UL	mg/kg	49	< 1.0		< 1.0	< 1.0		2.8	< 1.0	
Aliphatic >C12 - C16	82,000		mg/kg	420	< 2.0		< 2.0	4.3		40	< 2.0	
Aliphatic >C16 - C21	1,700,000	S4UL	mg/kg	770	< 8.0		< 8.0	< 8.0		190	< 8.0	
Aliphatic >C21 - C34	17,000,000	S4UL	mg/kg	270	8.4		< 8.0	61		700	16	
Aromatic >C5 - C7	27	C4SL Benzene	mg/kg	< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010	
Aromatic >C7 - C8	110,000	S4UL	mg/kg	< 0.010	< 0.010		< 0.010	< 0.010		< 0.010	< 0.010	
Aromatic >C8 - C10	8,100	S4UL	mg/kg	0.16	< 0.020		< 0.020	< 0.020		0.029	< 0.020	
Aromatic >C10 - C12	28,000	S4UL	mg/kg	30	< 1.0		< 1.0	< 1.0		3.4	< 1.0	
Aromatic >C12 - C16	37,000	S4UL	mg/kg	320	< 2.0		< 2.0	2.4		75	< 2.0	
Aromatic >C16 - C21	28,000	S4UL	mg/kg	400	11		< 10	16		990	< 10	
Aromatic >C21 - C35	28,000	S4UL	mg/kg	120	11		< 10	32		2000	< 10	
BTEX & MTBE												
Benzene	27,000	C4SL	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	110,000,000	S4UL	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	13,000,000	S4UL	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
m & p-xylene	14,000,000	S4UL	ug/kg	< 8.0	54	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
o-xylene	15,000,000	S4UL	ug/kg	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE	7,900,000	EIC/AGS/CL:AIRE	ug/kg	< 5.0	< 5.0		< 5.0	< 5.0		< 5.0	< 5.0	

Concentrations Highlighted in Red Exceed their Adopted Screening Value

LQM S4UL Publication Ref: S4UL3698

Obsidian Geo-Consulting Limited©

Appendix F

Ground Gas Monitoring Results



Ground Gas and Groundwater Monitoring Results



Project Name:	Lidl, 440 Hollinwood Avenue, Moston, Manchester
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd

Date:	23/10/2024
Visit:	1 of 4

<u>Barometric Pressure (mb)</u>	
Start:	1016
Finish:	1015
Trend:	Rising

Ambient Concentration (% vol)	
CH ₄ :	0.0
CO ₂ :	0.0
O ₂ :	20.7

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Dry, cloudy, 9°C
Surface Conditions:	Dry on concrete, wet on grass.
Operator:	NK

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Ground Gas and Groundwater Monitoring Results



Project Name:	Lidl, 440 Hollinwood Avenue, Moston, Manchester
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd

Date:	30/10/2024
Visit:	2 of 4

<u>Barometric Pressure (mb)</u>	
Start:	1016
Finish:	1015
Trend:	Rising

Ambient Concentration (% vol)	
CH ₄ :	0.0
CO ₂ :	0.0
O ₂ :	20.5

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Overcast, light rain, 11°C
Surface Conditions:	Wet
Operator:	NK

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

OBSIDIAN
GEO-CONSULTING

Date:	11/06/2024
Visit:	3 of 4

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Ground Gas and Groundwater Monitoring Results



Project Name:	Lidl, 440 Hollinwood Avenue, Moston, Manchester
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd

Date:	13/11/2024
Visit:	4 of 4

Barometric Pressure (mb)	
Start:	1024
Finish:	1022
Trend:	Rising

Ambient Concentration (% vol)	
CH ₄ :	0
CO ₂ :	0
O ₂ :	20.4

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Overcast
Surface Conditions:	Dry
Operator:	DH

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Appendix G

TRL DCP Results



TRL DCP Field Test Record Sheet



Project Name:	Lidl, 440 Hollinwood Avenue, Moston, Manchester
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd
TRL DCP Ref:	DCP01
Depth at Start of Test (mm bgl):	180mm
Date:	15/10/2024
Comments:	Test undertaken from base of concrete.

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	340	180	0
1	355	195	15
2	365	205	10
3	375	215	10
4	385	225	10
5	390	230	5
6	396	236	6
7	402	242	6
8	406	246	4
9	411	251	5
10	416	256	5
11	420	260	4
12	425	265	5
13	430	270	5
14	431	271	1
15	435	275	4
16	440	280	5
17	442	282	2
18	445	285	3
19	450	290	5
20	451	291	1
21	452	292	1
22	455	295	3
23	460	300	5
24	465	305	5
25	467	307	2
26	470	310	3
27	474	314	4
28	476	316	2
29	479	319	3
30	480	320	1
31	480	320	0
32	481	321	1
33	490	330	9
34	490	330	0
35	492	332	2
36	495	335	3
37	499	339	4
38	500	340	1
39	504	344	4
40	506	346	2
41	506	346	0
42	508	348	2
43	511	351	3
44	514	354	3
45	516	356	2
46	520	360	4
47	522	362	2
48	525	365	3
49	530	370	5
50	531	371	1

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	533	373	2
52	534	374	1
53	540	380	6
54	542	382	2
55	545	385	3
56	550	390	5
57	555	395	5
58	560	400	5
59	565	405	5
60	570	410	5
61	575	415	5
62	580	420	5
63	590	430	10
64	605	445	15
65	620	460	15
66	654	494	34
67	690	530	36
68	730	570	40
69	765	605	35
70	804	644	39
71	840	680	36
72	870	710	30
73	900	740	30
74	920	760	20
75	-	-	-
76	-	-	-
77	-	-	-
78	-	-	-
79	-	-	-
80	-	-	-
81	-	-	-
82	-	-	-
83	-	-	-
84	-	-	-
85	-	-	-
86	-	-	-
87	-	-	-
88	-	-	-
89	-	-	-
90	-	-	-
91	-	-	-
92	-	-	-
93	-	-	-
94	-	-	-
95	-	-	-
96	-	-	-
97	-	-	-
98	-	-	-
99	-	-	-
100	-	-	-
101	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
102	-	-	-
103	-	-	-
104	-	-	-
105	-	-	-
106	-	-	-
107	-	-	-
108	-	-	-
109	-	-	-
110	-	-	-
111	-	-	-
112	-	-	-
113	-	-	-
114	-	-	-
115	-	-	-
116	-	-	-
117	-	-	-
118	-	-	-
119	-	-	-
120	-	-	-
121	-	-	-
122	-	-	-
123	-	-	-
124	-	-	-
125	-	-	-
126	-	-	-
127	-	-	-
128	-	-	-
129	-	-	-
130	-	-	-
131	-	-	-
132	-	-	-
133	-	-	-
134	-	-	-
135	-	-	-
136	-	-	-
137	-	-	-
138	-	-	-
139	-	-	-
140	-	-	-
141	-	-	-
142	-	-	-
143	-	-	-
144	-	-	-
145	-	-	-
146	-	-	-
147	-	-	-
148	-	-	-
148	-	-	-
149	-	-	-
150	-	-	-
151	-	-	-

TRL DCP Field Test Record Sheet



Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd
TRL DCP Ref:	DCP02
Depth at Start of Test (mm bgl):	70mm
Date:	16/10/2024
Comments:	Test undertaken from base of tarmacadam.

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	194	70	0
1	211	87	17
2	215	91	4
3	220	96	5
4	229	105	9
5	234	110	5
6	240	116	6
7	242	118	2
8	245	121	3
9	250	126	5
10	250	126	0
11	252	128	2
12	255	131	3
13	259	135	4
14	260	136	1
15	260	136	0
16	261	137	1
17	262	138	1
18	263	139	1
19	263	139	0
20	265	141	2
21	265	141	0
22	266	142	1
23	270	146	4
24	270	146	0
25	271	147	1
26	274	150	3
27	274	150	0
28	275	151	1
29	275	151	0
30	275	151	0
31	276	152	1
32	277	153	1
33	277	153	0
34	280	156	3
35	280	156	0
36	280	156	0
37	281	157	1
38	281	157	0
39	282	158	1
40	283	159	1
41	284	160	1
42	284	160	0
43	285	161	1
44	285	161	0
45	285	161	0
46	285	161	0
47	286	162	1
48	287	163	1
49	288	164	1
50	289	165	1

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	290	166	1
52	290	166	0
53	290	166	0
54	290	166	0
55	292	168	2
56	294	170	2
57	295	171	1
58	295	171	0
59	295	171	0
60	296	172	1
61	296	172	0
62	297	173	1
63	298	174	1
64	299	175	1
65	299	175	0
66	300	176	1
67	300	176	0
68	300	176	0
69	300	176	0
70	301	177	1
71	301	177	0
72	301	177	0
73	304	180	3
74	305	181	1
75	305	181	0
76	305	181	0
77	307	183	2
78	307	183	0
79	308	184	1
80	309	185	1
81	310	186	1
82	311	187	1
83	311	187	0
84	312	188	1
85	312	188	0
86	312	188	0
87	312	188	0
88	314	190	2
89	314	190	0
90	314	190	0
91	315	191	1
92	316	192	1
93	317	193	1
94	318	194	1
95	319	195	1
96	320	196	1
97	321	197	1
98	-	-	-
99	-	-	-
100	-	-	-
101	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
102	-	-	-
103	-	-	-
104	-	-	-
105	-	-	-
106	-	-	-
107	-	-	-
108	-	-	-
109	-	-	-
110	-	-	-
111	-	-	-
112	-	-	-
113	-	-	-
114	-	-	-
115	-	-	-
116	-	-	-
117	-	-	-
118	-	-	-
119	-	-	-
120	-	-	-
121	-	-	-
122	-	-	-
123	-	-	-
124	-	-	-
125	-	-	-
126	-	-	-
127	-	-	-
128	-	-	-
129	-	-	-
130	-	-	-
131	-	-	-
132	-	-	-
133	-	-	-
134	-	-	-
135	-	-	-
136	-	-	-
137	-	-	-
138	-	-	-
139	-	-	-
140	-	-	-
141	-	-	-
142	-	-	-
143	-	-	-
144	-	-	-
145	-	-	-
146	-	-	-
147	-	-	-
148	-	-	-
148	-	-	-
149	-	-	-
150	-	-	-
151	-	-	-

TRL DCP Field Test Record Sheet



Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd
TRL DCP Ref:	DCP03
Depth at Start of Test (mm bgl):	0mm
Date:	16/10/2024
Comments:	Test undertaken from ground level.

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	113	0	0
1	130	17	17
2	140	27	10
3	145	32	5
4	157	44	12
5	176	63	19
6	190	77	14
7	212	99	22
8	246	133	34
9	265	152	19
10	280	167	15
11	290	177	10
12	300	187	10
13	304	191	4
14	306	193	2
15	310	197	4
16	312	199	2
17	314	201	2
18	316	203	2
19	317	204	1
20	320	207	3
21	325	212	5
22	330	217	5
23	335	222	5
24	340	227	5
25	346	233	6
26	355	242	9
27	365	252	10
28	376	263	11
29	380	267	4
30	385	272	5
31	392	279	7
32	395	282	3
33	400	287	5
34	405	292	5
35	411	298	6
36	420	307	9
37	425	312	5
38	430	317	5
39	435	322	5
40	442	329	7
41	450	337	8
42	458	345	8
43	462	349	4
44	466	353	4
45	470	357	4
46	475	362	5
47	480	367	5
48	485	372	5
49	500	387	15
50	510	397	10

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	519	406	9
52	528	415	9
53	550	437	22
54	588	475	38
55	620	507	32
56	650	537	30
57	680	567	30
58	715	602	35
59	745	632	30
60	770	657	25
61	795	682	25
62	815	702	20
63	835	722	20
64	860	747	25
65	880	767	20
66	892	779	12
67	900	787	8
68	910	797	10
69	-	-	-
70	-	-	-
71	-	-	-
72	-	-	-
73	-	-	-
74	-	-	-
75	-	-	-
76	-	-	-
77	-	-	-
78	-	-	-
79	-	-	-
80	-	-	-
81	-	-	-
82	-	-	-
83	-	-	-
84	-	-	-
85	-	-	-
86	-	-	-
87	-	-	-
88	-	-	-
89	-	-	-
90	-	-	-
91	-	-	-
92	-	-	-
93	-	-	-
94	-	-	-
95	-	-	-
96	-	-	-
97	-	-	-
98	-	-	-
99	-	-	-
100	-	-	-
101	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
102	-	-	-
103	-	-	-
104	-	-	-
105	-	-	-
106	-	-	-
107	-	-	-
108	-	-	-
109	-	-	-
110	-	-	-
111	-	-	-
112	-	-	-
113	-	-	-
114	-	-	-
115	-	-	-
116	-	-	-
117	-	-	-
118	-	-	-
119	-	-	-
120	-	-	-
121	-	-	-
122	-	-	-
123	-	-	-
124	-	-	-
125	-	-	-
126	-	-	-
127	-	-	-
128	-	-	-
129	-	-	-
130	-	-	-
131	-	-	-
132	-	-	-
133	-	-	-
134	-	-	-
135	-	-	-
136	-	-	-
137	-	-	-
138	-	-	-
139	-	-	-
140	-	-	-
141	-	-	-
142	-	-	-
143	-	-	-
144	-	-	-
145	-	-	-
146	-	-	-
147	-	-	-
148	-	-	-
148	-	-	-
149	-	-	-
150	-	-	-
151	-	-	-

TRL DCP Field Test Record Sheet



Project Name:	Lidl, 440 Hollinwood Avenue, Moston
Project Number:	24-1990-P
Client:	Lidl Great Britain Ltd
TRL DCP Ref:	DCP04
Depth at Start of Test (mm bgl):	200mm
Date:	16/10/2024
Comments:	Test undertaken from base of concrete.

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	295	200	0
1	320	225	25
2	330	235	10
3	335	240	5
4	335	240	0
5	344	249	9
6	346	251	2
7	349	254	3
8	350	255	1
9	354	259	4
10	356	261	2
11	360	265	4
12	364	269	4
13	367	272	3
14	370	275	3
15	374	279	4
16	375	280	1
17	377	282	2
18	380	285	3
19	381	286	1
20	382	287	1
21	384	289	2
22	387	292	3
23	388	293	1
24	390	295	2
25	392	297	2
26	394	299	2
27	395	300	1
28	396	301	1
29	397	302	1
30	399	304	2
31	400	305	1
32	402	307	2
33	404	309	2
34	406	311	2
35	410	315	4
36	414	319	4
37	417	322	3
38	420	325	3
39	426	329	4
40	430	331	2
41	431	335	4
42	434	336	1
43	436	339	3
44	437	341	2
45	437	342	1
46	440	345	3
47	440	345	0
48	440	345	0
49	443	348	3
50	445	350	2

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	447	352	2
52	448	353	1
53	449	354	1
54	450	355	1
55	454	359	4
56	454	359	0
57	454	359	0
58	456	361	2
59	456	361	0
60	457	362	1
61	459	364	2
62	461	366	2
63	464	369	3
64	467	372	3
65	469	374	2
66	475	380	6
67	476	381	1
68	477	382	1
69	480	385	3
70	482	387	2
71	485	390	3
72	490	395	5
73	491	396	1
74	495	400	4
75	500	405	5
76	500	405	0
77	505	410	5
78	507	412	2
79	510	415	3
80	513	418	3
81	516	421	3
82	516	421	0
83	518	423	2
84	519	424	1
85	519	424	0
86	519	424	0
87	520	425	1
88	521	426	1
89	523	428	2
90	523	428	0
91	525	430	2
92	525	430	0
93	526	431	1
94	526	431	0
95	530	435	4
96	530	435	0
97	532	437	2
98	537	442	5
99	540	445	3
100	545	450	5
101	546	451	1

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
102	550	455	4
103	555	460	5
104	560	465	5
105	565	470	5
106	569	474	4
107	574	479	5
108	578	483	4
109	578	483	0
110	580	485	2
111	585	490	5
112	585	490	0
113	588	493	3
114	590	495	2
115	596	501	6
116	600	505	4
117	602	507	2
118	607	512	5
119	610	515	3
120	612	517	2
121	615	520	3
122	620	525	5
123	621	526	1
124	625	530	4
125	629	534	4
126	632	537	3
127	636	541	4
128	639	544	3
129	640	545	1
130	641	546	1
131	644	549	3
132	647	552	3
133	648	553	1
134	650	555	2
135	-	-	-
136	-	-	-
137	-	-	-
138	-	-	-
139	-	-	-
140	-	-	-
141	-	-	-
142	-	-	-
143	-	-	-
144	-	-	-
145	-	-	-
146	-	-	-
147	-	-	-
148	-	-	-
148	-	-	-
149	-	-	-
150	-	-	-
151	-	-	-



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