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LIDL, RUSHOLME

FLOOD RISK ASSESSMENT

Final Report for:



March 2025

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APPENDIX B – TOPOGRAPHICAL SURVEY

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APPENDIX D – ENVIRONMENT FLOOD RECORDS FOR PLANNING

APPENDIX E – SFRA FUTURE FLOOD MAP

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APPENDIX G – INDICATIVE DRAINAGE STRATEGY

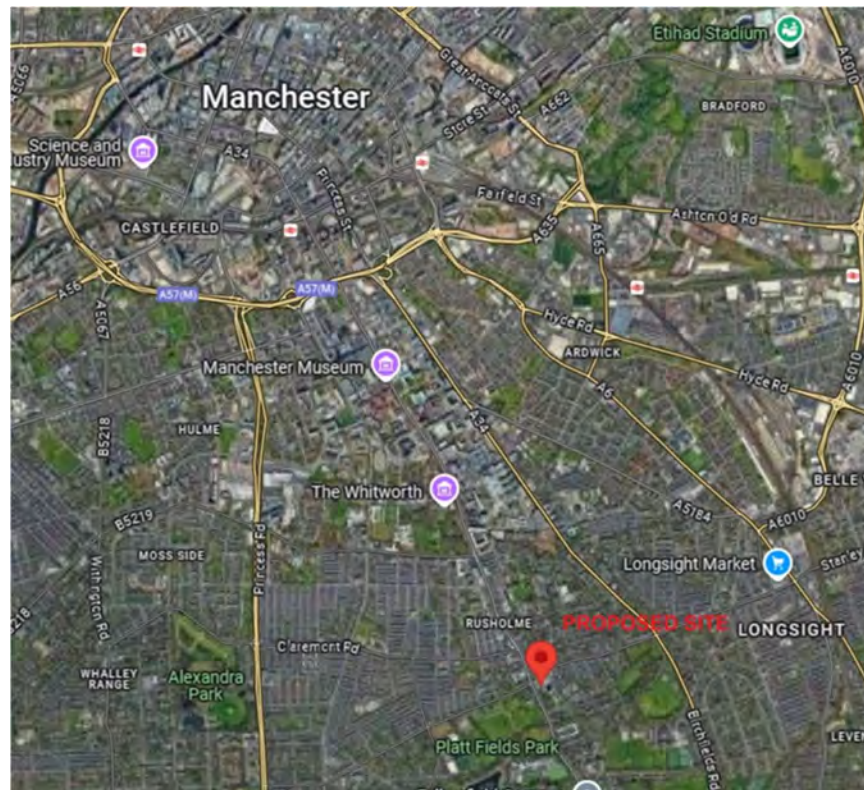
APPENDIX H – GEOTECHNICAL REPORT

1.0 INTRODUCTION

1.1 Overview

- 1.1.1 Cora IHT have been instructed by Lidl to prepare a Flood Risk Assessment [FRA] to support proposals for a new store located off the A6010 Wilmslow Road, Manchester M14 5HA. **Figure 1.1** illustrates the site location.

Figure 1.1: Site Location



- 1.1.2 This report presents the findings of an FRA, which has been carried out in accordance with the National Planning Policy Framework (NPPF), Flood Risk and Coastal Change Technical Guidance, Environment Agency (EA) interactive maps and Manchester City, Salford City and Trafford Councils Level 2 Hybrid SFRA (SFRA).
- 1.1.3 This FRA aims to identify and assess the risks of all forms of flooding to and from the site and demonstrate how these flood risks will be managed, taking climate change into account. The FRA also considers the management of surface water run-off and outlines the proposed drainage strategy.
- 1.1.4 As the proposed site resides within an area designated as flood zone 1 with an approximate site area within the application boundary of 0.66 hectares (6,585m²) an FRA is not strictly required see **figure 1.2** below.

Figure 1.2: Requirements within Flood zone 1

This location is in flood zone 1

What flood zone 1 means

Land within flood zone 1 has a low probability of flooding from rivers and the sea.

Most developments that are less than 1 hectare (ha) in flood zone 1 do not need a flood risk assessment (FRA) as part of the planning application. The site you have drawn is 0.66 ha.

- 1.1.5 Notwithstanding the above, the development should not increase the risk of flooding elsewhere and this FRA has therefore also been prepared to demonstrate that this has been achieved. Consideration has also been given to minimising the risk of pollution to controlled waters and the site conditions prior to, during and after development.

2.0 SITE DESCRIPTION AND EXISTING CONDITIONS

2.1 Site Description

- 2.1.1 The site forms circa 0.66 hectares of Brownfield land previously occupied by the Rusholme Depot of First Buses. The site is located approximately 3.4km to the South of Manchester centre. National Grid reference 385418, 394997 is located at the central point of the proposed site area with the nearest postcode is identified as M14 5HA.
- 2.1.2 A proposed site layout plan drawing reference 2594 P410 by HTC architects is presented in **Appendix A**.
- 2.1.3 The Platt Brook and Gore Brook are located approximately 230m to the south of the site with the area immediately around the brooks covered by the [Middle River Mersey catchment including areas near Bramhall, Stockport, Sale, Altrincham and Urmston](#) flood alert, however at the time of writing there are no current or recent warnings issued for this area, flood alert area shown in **Figure 2.1** below.

Figure 2.1: Flood Alert Area



- 2.1.4 The existing site is serviced by a comprehensive network of manholes and inspection chambers providing positive discharge for both foul and surface water flows.
- 2.1.5 Two surface water discharge positions are highlighted on the existing topographical survey Shown in **Appendix B**, the first via MH ref 04 located adjacent to Wilmslow Road, which is assumed to discharge to the offsite Untied Utilities combined system due to the presence of a foul connection within the same chamber, the second connection appears to be a dedicated surface water connection located to the rear of the site via MH ref 20 which is considered to flow offsite in the direction of Marcus Grove.
- 2.1.6 Prior to detailed design commencing a comprehensive CCTV survey should be completed to establish the current depth and condition of the existing assets, to establish current discharge position and suitability for reuse
- 2.1.7 Although no records have been identified the presence of underground culverts, should any culverts be identified at detailed design a detailed condition and connectivity survey should be completed to establish the exact routes and confirm condition for reuse.

2.2 *Proposed Future Use*

- 2.2.1 It is proposed to develop the site for food retail purposes. The scheme layout is shown on drawing reference 2594 P410 by HTC architects.

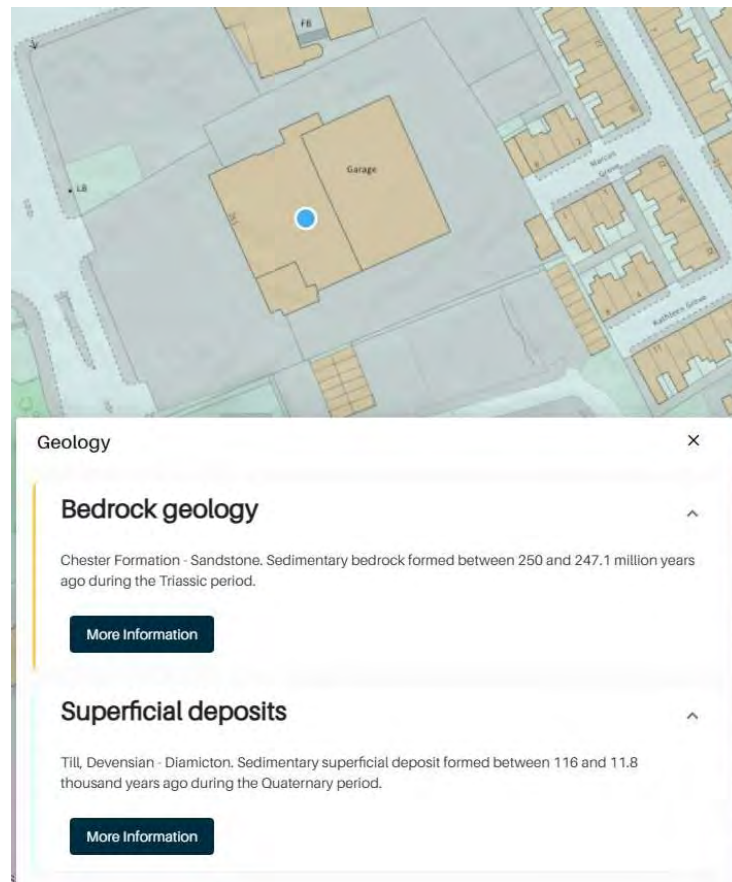
2.3 *Site Levels*

- 2.3.1 Following assessment of the topographical survey produced by Technics Geospatial Consultant Surveyors shown in **Appendix B**, the site appears to have a nominal fall from south to north and east to west.

2.4 *Underlying Ground*

- 2.4.1 Review of British Geological Survey (BGS) geology mapping records indicates that the bedrock geology through the vast majority of the site is underlain by Chester Formation – Sandstone sedimentary bedrock, with superficial deposits of Till Devensian, Extract of the BGS information is shown in **Figure 2.2** below.

Figure 2.2: BGS Information



- 2.4.2 The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

- *Igneous rocks - are derived from molten magma in the Earth's crust. They may, for example, be extruded at the surface by volcanic activity to form lavas and tuffs (ash) or intruded into other rocks to form large masses of granite and gabbro at depth or minor, cross-cutting basalt dykes near the surface.*
- *Metamorphic rocks - such as schist and gneiss are those that have been changed from one rock type to another in the solid state by the recrystallisation of minerals, often at high temperatures and pressures when buried deep in the Earth's crust.*
- *Sedimentary rocks - are formed when grains and fragments of existing rocks are eroded away by ice, water and wind action, transported elsewhere and redeposited as a sediment. These sediments are often laid down in layers or strata of loose particles of gravel, sand, silt and clay. Over time they may be buried by later sediments and consolidated or cemented to form stratified or bedded rocks such as conglomerate, sandstone, siltstone and claystone. Other sedimentary rocks such as ironstone and limestone are created by chemical or biogenic (life) action.*

- 2.4.3 Although the online BGS records does not include any boreholes located within the proposed site, an existing borehole log is available to the north of the proposed site completed by City Engineer and Surveyors Department dated 5th August 1984 reference SJ89NE675, location shown in **Figure 2.2** Below.
- 2.4.4 Although the borehole is not applicable to the site the existing borehole log indicates the presence of stiff/hard clay at approximately 1.2m deep with no water ingress observed, full log included within **Appendix C** which provides a guide to potential ground conditions which may be encountered.

Figure 2.2: BGS Borehole Locations



- 2.4.5 In June 2024 Obsidian Geo-Consulting completed a Phase 2 geotechnical report document reference 24-1965-P-R1 full document shown in **Appendix H** which describes the ground conditions encountered as:

The ground conditions encountered in the exploratory holes across the site comprised variable thicknesses of reinforced concrete surfacing, present to 0.15m bgl to 0.23m bgl with localised bituminous surfacing in WS02 and concrete paving blocks in WS04. Beneath the hardstanding, variable, granular Made Ground was present to 0.25m bgl to 1.15m bgl. A concrete obstruction, believed to be an old concrete foundation was encountered at 0.90m bgl in WS01. The natural strata comprised predominantly firm to very stiff, gravelly CLAY.

Localised hydrocarbon odours were noted within WS01, WS02, WS08 and WS11.

- 2.4.6 Due to the presence of stiff clays and the potential for the mobilising of hydrocarbons, infiltration has been unfortunately discounted as a discharge methodology

3.0 FLOOD RISK and FLOOD ZONES

3.1 Brief

3.1.1 The vulnerability of the site to flooding from rivers, sea and other sources has been considered, along with the potential to increase flooding elsewhere through the addition of impermeable areas and the effect on surface water run-off. Typical sources of flooding include fluvial, tidal, surface water, groundwater, sewers and anthropogenic sources; these are considered below.

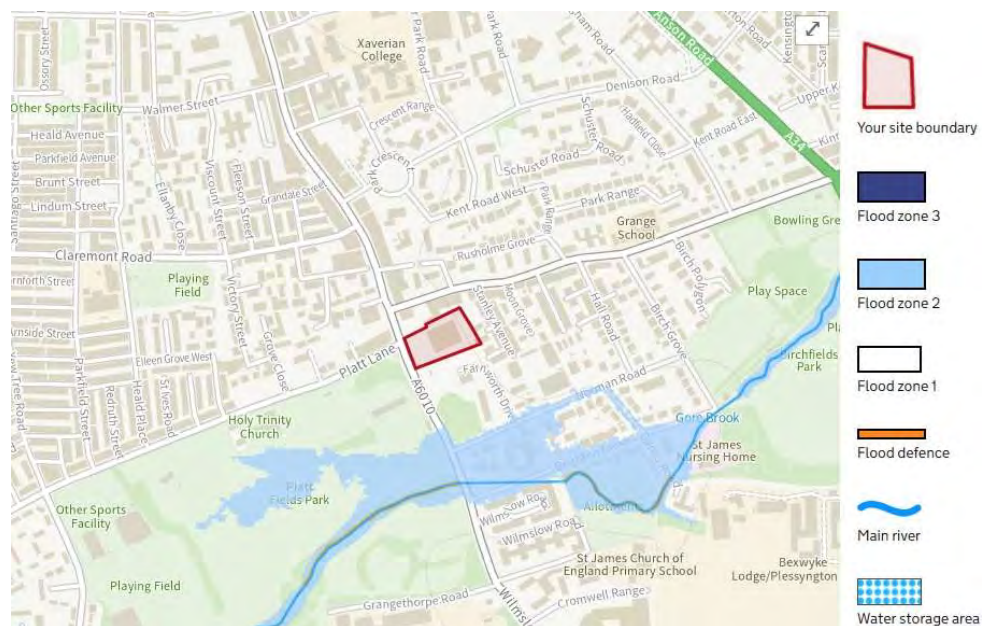
3.1.2 The local SFRA has also been consulted.

3.2 Fluvial, Tidal

3.2.1 Flood maps are produced by the EA for the whole of the UK to highlight areas at particular risk of flooding by categorising them into different Zones. These maps are based on a broad assessment of areas using digital mapping techniques and extracts from the EA flood maps for the site and its surroundings are included in the figures below.

3.2.2 The EA flood map for planning shows river and sea flooding data only, extract in **Figure 3.1**, full report provided in **Appendix D**, shows that the development area and its immediate surroundings are wholly located within EA Flood Zone 1 (unshaded areas).

Figure 3.1: Flood Map for Planning Extract



3.2.3 Areas located in flood zone 1 are defined as having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b).

3.2.4 The risk of flooding from Rivers and Sea has been identified as Very Low

3.2.5 All uses are considered appropriate in both Flood Zone 1 as shown in Table 2 of the NPPF shown in **Figure 3.2**.

Figure 3.2: NPPF Table 2

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	X	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	X	X	X	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

3.2.6 Inspection of Annex 3 of the NPPF shown in **Figure 3.3**, indicates buildings used for shops are classified as Less Vulnerable as such the proposed use is acceptable in the identified flood zone.

Figure 3.3: Annex 3: Flood risk vulnerability classification

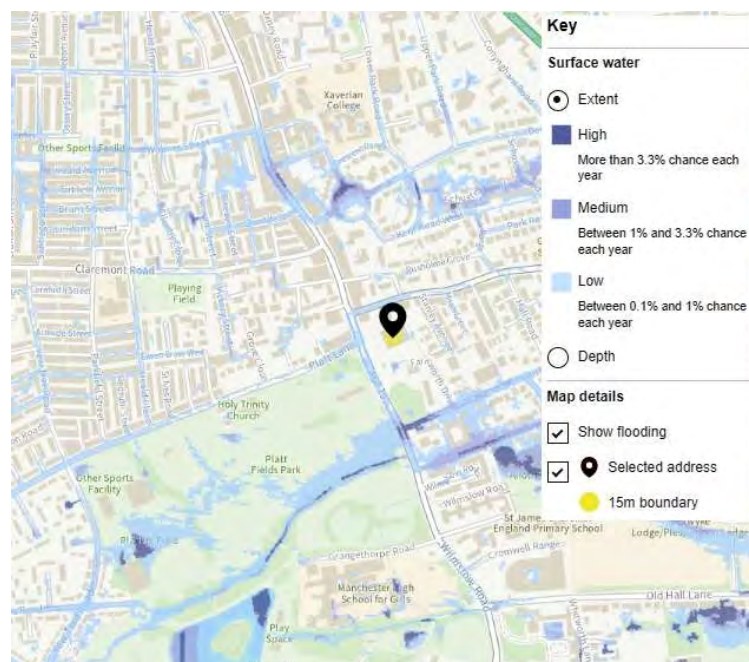
Less vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill* and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.
- Car parks.

3.3 Surface Water

- 3.3.1 The EA's surface water flood map shown in **Figures 3.4** identifies the surface water flood risk for the proposed site. The surface water flood category for the site has been identified as being very low, with no areas of flooding identified.

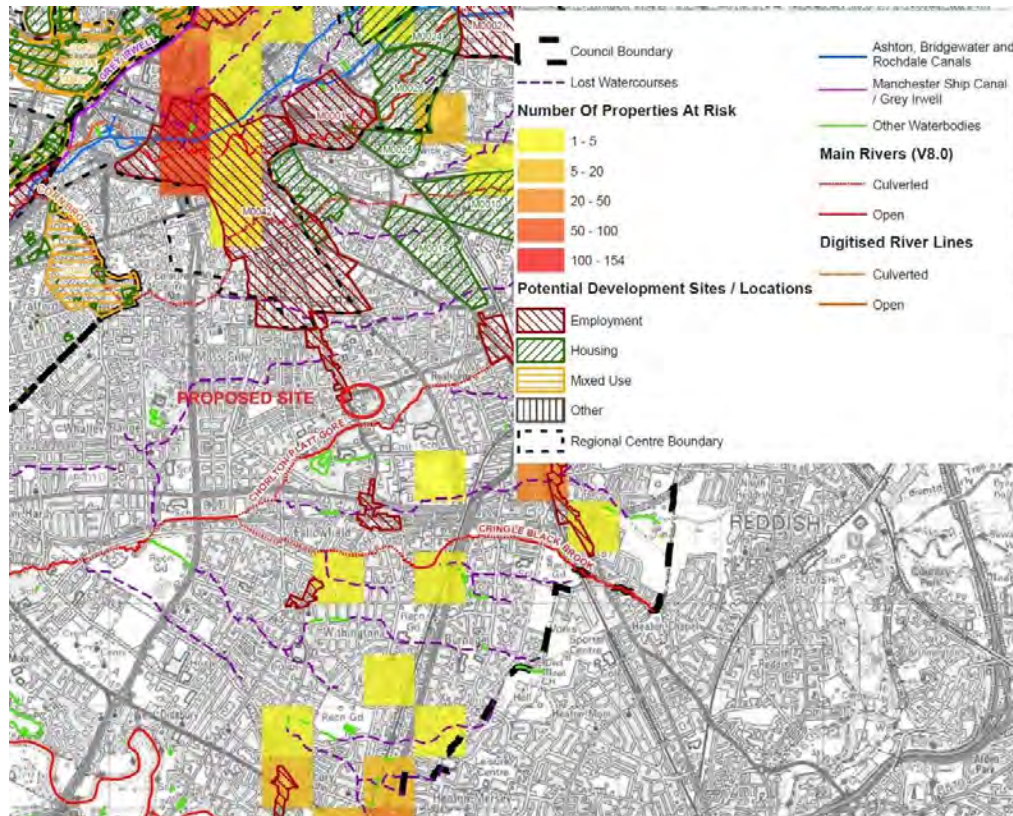
Figure 3.4 Surface Water flood Map



- 3.3.2 Surface water flooding occurs when rainwater does not drain away through normal drainage systems or soak into the ground but lies on or flows over the ground instead.

- 3.3.3 The Manchester City, Salford City and Trafford Councils Level 2 SFRA includes mapping for both current and future surface water flood scenarios, which identifies the number of properties at risk of flooding extract shown in **Figure 3.5** below with the full drawing shown in **Appendix E**
- 3.3.4 The proposed site is clear of any shaded areas as such it is considered not to be at risk from future flooding scenarios.

Figure 3.5 EA Summary – Surface Water



- 3.3.5 Post development the introduction of buildings and roadways across the site will result in interception of rainfall via the building roofs and road surfaces. Management of surface water is being considered as part of the development proposals and a preliminary drainage strategy is outlined within Section 6 of this FRA report.

3.4 Reservoirs

- 3.4.1 The EA's reservoir flood map shown in **Figures 3.6** identifies the potential extents of reservoir flooding. The extract below indicates that when the river levels are normal the site is affected.
- 3.4.2 The Long-term flood guidance indicates that there are potentially 3 reservoirs that may affect the proposed site, which are operated and maintained by United Utilities, list shown in **Figure 3.7** below.

- 3.4.3 Although the consequences of such a reservoir failure would be significant following a dam breach or over topping, it should be emphasized that under the requirements of the reservoir Act 1975 any reservoir classified as high risk must be regularly monitored and inspected by an independent qualified civil engineer who will make recommendations to the operator.
- 3.4.4 As a result of the ongoing inspections, the opportunity for such a breach to be experienced could be considered to be low.

Figure 3.6 Reservoir flood Map

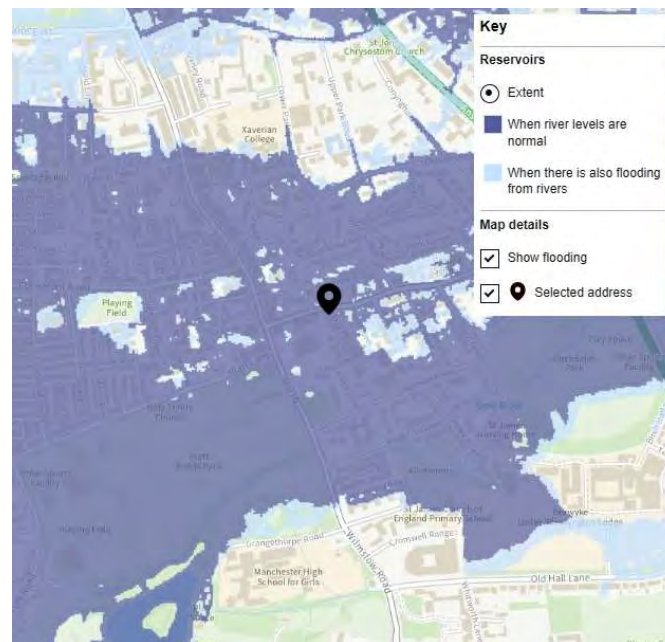


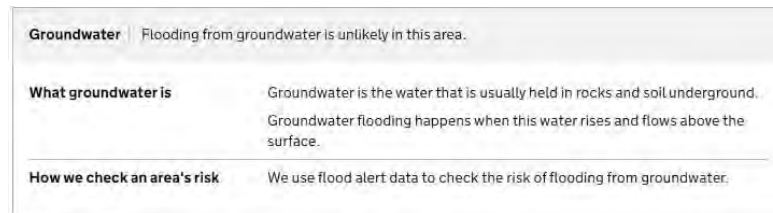
Figure 3.7 Reservoir list

Reservoirs There is a risk of flooding from reservoirs in this area.	
What a reservoir is	A reservoir is a large natural or artificial lake that is designed to collect and store water.
How we check an area's risk	We use predicted scenarios to understand the risk of flooding from reservoirs. Flooding from reservoirs is extremely unlikely. An area is considered at risk if people's lives could be threatened in the event of a dam or reservoir failure. View a map of the risk of flooding from reservoirs ▼ Reservoirs that could affect this area Audenshaw No.1 (grid reference SJ9170096800) Owner: United Utilities PLC Lead Local Flood Authority: Tameside Comments: If you have questions about local emergency plans for this reservoir you should contact the named Local Authority Audenshaw No.2 (grid reference SJ9140096200) Owner: United Utilities PLC Lead Local Flood Authority: Tameside Comments: If you have questions about local emergency plans for this reservoir you should contact the named Local Authority Audenshaw No.3 (grid reference SJ9110096700) Owner: United Utilities PLC Lead Local Flood Authority: Tameside Comments: If you have questions about local emergency plans for this reservoir you should contact the named Local Authority

3.5 Ground Water

- 3.5.1 Groundwater flooding typically results from heavy/prolonged rainfall causing the level of the groundwater table to rise, which may lead to emergence of groundwater at the surface or into underground features such as basements. Low lying areas of land with permeable underlying strata may be particularly susceptible.
- 3.5.2 **Figure 3.8** below shows the site to not be affected by areas of groundwater flooding.

Figure 3.8 Groundwater Susceptibility extract



- 3.5.3 The historical bore hole log shown in **Appendix C** did not observe any water within the excavation, however the groundwater monitoring results included as part of the Obsidian geotechnical report in **Appendix H** indicated levels to vary significantly across the study period with levels recorded at WS11 being the highest recorded. The water identified was potentially perched above the layer of firm brown clay at around 0.3m depth. Overall, the risk from groundwater flooding is considered to be low.

3.6 Internal Drainage Board

- 3.6.1 The Internal Drainage Board is a public body that manage water levels within defined areas, the proposed site is not located within an area under the control of the IDB.

3.7 Critical Drainage Area

- 3.7.1 Paragraph 5.3 of the SFRA states:

The Town and Country Planning Order 2006¹¹ defines Critical Drainage Areas as “an area within Flood Zone 1 which has critical drainage problems, and which has been notified...[to]...the local planning authority by the Environment Agency”. However, the Environment Agency Standing Advice¹² also recognises the part that SFRAs play in identifying areas with drainage problems and in doing so highlighting areas that need an FRA to consider drainage in detail.

3.7.2 The proposed site is located within the Conurbation Core Critical Drainage Area which is defined within Table 5-1 of the SFRA as:

Conurbation Core	Manchester, Trafford, Salford, Tameside, Oldham, Rochdale, Bury, Bolton.	• Localised flooding problems in central Manchester and Salford. • Includes Lower Broughton which was focus of Defra Making Space for Water IUD pilot. • Focus of major regeneration and redevelopment that could have a significant impact on surface water runoff to local watercourses and the sewer network. • Many lost watercourses that are interconnected with the sewers, canals and open channel watercourses that pose a significant risk. • SFRA analysis shows significant surface water flooding hotspots between the Irk and Medlock and in Crumpsall, Cheetham Hill, Clifton Green, Newtown, Charlestown and Broughton. • 5 postcode areas with over 10 properties affected in the DG5 register.
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3.7.3 Paragraph 5.46 of the Local Flood Risk Management Strategy document and states:

Within Critical Drainage Areas, and consistent with Core Strategy policy EN14 Flood Risk, developers should aim to minimise surface water runoff from developments, and achieve at least the following runoff rates:

- *Greenfield runoff on Greenfield sites up to a 1 in 100-year storm event, including consideration of climate change*
- *A 50% runoff rate reduction for Brownfield sites, with an aim of reducing runoff to Greenfield rates up to a 1 in 100-year storm event, including consideration of climate change.*

4.0 SUMMARY

- 4.1.1 The site is designated as Brownfield.
- 4.1.2 The proposed site lies wholly within an area designated as flood zone 1 and is categorised as less vulnerable use.
- 4.1.3 All Land uses including less vulnerable are acceptable within flood zone 1 areas.
- 4.1.4 Both the Surface Water and Rivers and Sea flood risk for the site has been identified as being Very low.
- 4.1.5 The proposed site lies within the maximum extent of flooding from nearby reservoirs, should the waterbodies be suitably maintained the risk for flooding from reservoirs can be considered low.
- 4.1.6 The site is not considered to suffer from groundwater flooding.
- 4.1.7 The proposed site lies within the conurbation critical drainage area, as such restriction on surface water discharge will be imposed.
- 4.1.8 The proposed flow rate from the site should be restricted to 50% of the predevelopment brownfield discharge rate as a minimum.
- 4.1.9 Although an initial 2 pipe network has been established, a more comprehensive discharge rate can be established once the site-specific CCTV survey has been completed.
- 4.1.10 A preliminary drainage strategy is discussed in Section 6 which shows that post-development flood risks will not be increased due to the development plans.

5.0 MANAGING SURFACE WATER

5.1 *Brief*

- 5.1.1 In accordance with the NPPF and SFRA, consideration should be given to natural water flows at the site. The development should not adversely affect flow or increase flood risk elsewhere, including increasing run-off rates. The disposal of surface water should be dealt with in a sustainable way and climate change should also be accounted for. The site drainage strategy is discussed in Section 7.

5.2 *Previous Situation and Development Proposals*

- 5.2.1 The proposed site is predominantly Brownfield with minor instances of vegetated areas within verge areas as such we have assumed the site in its current state is 99% impermeable.

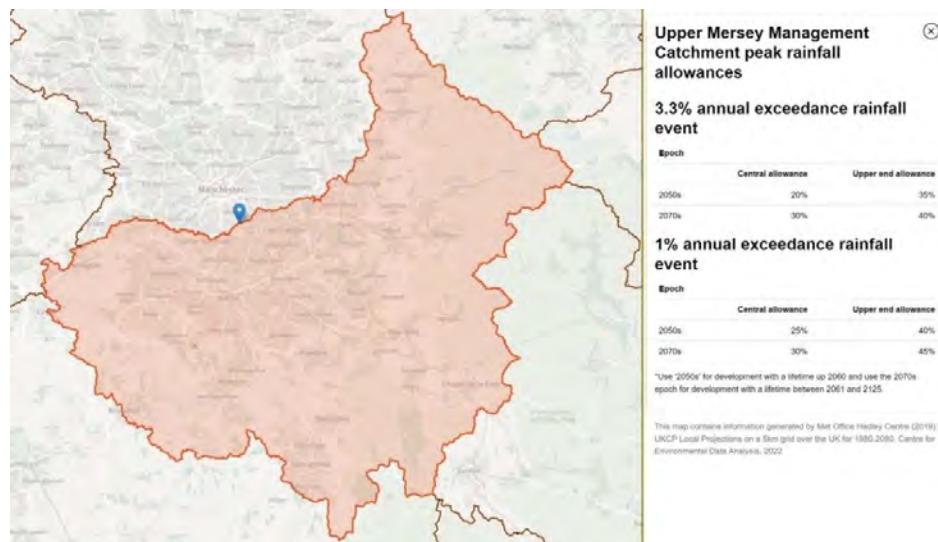
The introduction of the proposed development would provide opportunities to increase the existing areas of vegetation and provide a significant betterment over the existing brownfield discharge rate. The future site layout is shown on the architect's layout drawing in **Appendix A**,

- 5.2.2 Post-development the existing site impermeable area could potentially be reduced with the introduction of additional vegetated spaces and rain garden area, where surface waters will soak naturally into the underlying ground before being transferred to the proposed outfall. Nevertheless, surface water collected from impermeable areas, such as roofs and roads, will need to be managed and the proposed drainage strategy is included Section 6.

5.3 *Climate Change*

- 5.3.1 There is evidence to suggest that the climate is changing with sea levels predicted to continue to rise along with more frequent short-duration, high-intensity rainfall and more frequent periods of long-duration rainfall. The NPPF recommends that the effects of climate change be accounted for in FRA, with consideration of the EA flood maps and local authority SFRA.

Figure 5.1 Climate Change Allowances



- 5.3.2 Increased rainfall or higher intensity short-duration rainfall may increase as a result of climate change. The .GOV website states that for the Upper Mersey Management Catchment peak rainfall

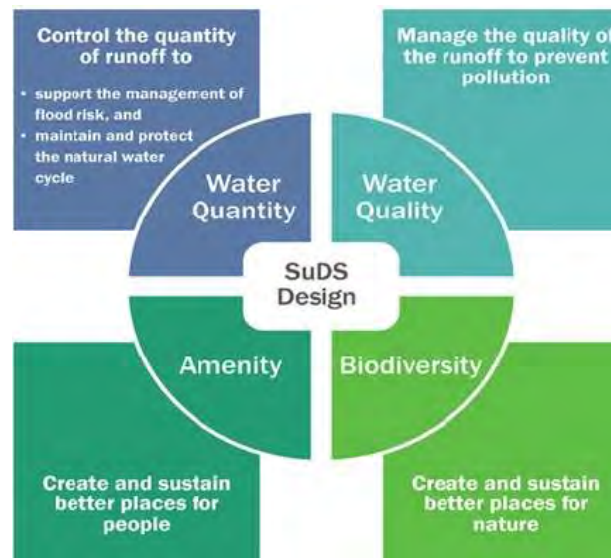
allowances – that the upper allowance for the 3.3% annual exceedance rainfall event a 40% allowance for climate change should be applied and 45% for the 1% annual exceedance rainfall event is therefore being allowed for within the new surface water drainage design to take account of climate change.

- 5.3.3 Climate change may also lead to variations in groundwater level which will also be considered during the drainage design.

5.4 Sustainable Drainage Systems (SUDS)

- 5.4.1 SUDS are a desirable way to manage surface water disposal within new developments and SUDS methods for surface water drainage management are discussed further within the SUDS Manual. When designing surface water drainage strategies priority should be given to disposal of surface water via infiltration drainage systems over (first) discharge to watercourses (second) prior to identifying a possible discharge to sewers.

Figure 5.2 Four Pillars of SuDS



- 5.4.2 The proposed development will address the above 4 pillars of SuDS design criteria with the inclusion of a range of sustainable features through a comprehensive treatment train.

- **Water Quantity** As the existing site is currently in use and serviced by a comprehensive network of manholes and catchpits, in order to define the current brownfield discharge rate, a 2-pipe network based on the predevelopment impermeable area, which provides a far more detailed and realistic representation of the predevelopment discharge rate.

The 2-pipe method has accordingly been employed to calculate the flows arising from the existing site. As the site currently benefits from 2 individual outfalls, until a comprehensive CCTV survey has been completed, the existing impermeable area has been split equally across each outfall, as such the critical outflow result below is assumed to be applied for each connection.

The maximum discharge from the existing site, for the 1 in 1-year critical storm, exclusive of climate change has been calculated to be 36.2 l/s per outfall (72.4 l/s in total) based on an assumed pipe diameter of 150mm at a gradient of 1 in 80 see **Figure 5.3**.

The exact flow can be generated following completion of the site-specific CCTV survey

Figure 5.3 Brownfield 2 pipe network

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	EX SW ENTRY	11	38.364	0.144	36.3	0.9928	0.0000	OK
15 minute winter	SADDLE CONNECTION	11	38.218	0.135	36.3	0.0383	0.0000	OK
15 minute winter	MH04	11	37.870	0.127	36.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	EX SW ENTRY	1.000	SADDLE CONNECTION	36.3	1.399	0.623	0.2839	
15 minute winter	SADDLE CONNECTION	1.001	MH04	36.2	1.506	0.623	0.6541	18.3

Although a maximum flow rate from the existing has been established as 36.2 l/s which represents a 50% reduction in existing flows, in line with Paragraph 5.46 of the Local Flood Risk Management Strategy document, it is anticipated that the identified flow will be contested by the United Utilities, as such a flow of no more than 5 l/s will be achieved through both sustainable and traditional flow control features for the 1 in 100 year storm plus 45% allowance for climate change.

- **Water Quality** will be provided with the inclusion of a rain garden to not only attenuate but also treat the proposed flows from both the building and car parking areas, prior to outfall.

The simple index approach tool has been used shown in **Appendix F**, for both commercial roofing and external car parking, the spreadsheets have been included to confirm that the proposed treatment train is sufficient to achieve pollution mitigation indices for the selected SuDS components.

The proposed treatment train has been deemed sufficient to achieve an acceptable level of water quality prior to discharge from the site.

- **Biodiversity** will be provided with the introduction of a bioretention / raingarden areas to be developed in conjunction with the landscape architect at detailed design stage, creating a better environment for nature to thrive.
- **Amenity** connecting people with water has been proven to improve the well-being of people that work in or visit the proposed store. Although we do not anticipate the sustainable features proposed to create destination for the visitor, The design has taken the opportunity to create visually attractive areas which can connect people to water during their visit.

5.4.3 It is assumed at this time that the current site benefits from 2 current outfalls to United Utilities adopted assets, in line with the SuDS hierarchy infiltration is not considered suitable due to the presence of not only stiff clays but also hydrocarbons within the existing boreholes together with no watercourses in the immediate vicinity of the proposed site, It is proposed to discharge all surface water flows generated by the proposed development, at an attenuated rate, into the

United Utilities asset potentially via the existing connection once condition and suitability for reuse has been established.

- 5.4.4 The proposed drainage strategy will reduce discharge from the site to no more than 5 l/s inclusive of an allowance for climate change.

6.0 NON-STATUTORY TECHNICAL STANDARDS FOR SUSTAINABLE DRAINAGE SYSTEMS

6.1 *Flood risk outside the development*

S1 Where the drainage system discharges to a surface water body that can accommodate uncontrolled surface water discharges without any impact on flood risk from that surface water body (e.g. the sea or a large estuary) the peak flow control standards (S2 and S3 below) and volume control technical standards (S4 and S6 below) need not apply.

- 6.1.1 The proposed discharge position cannot accept uncontrolled discharge therefore references S2, S3, S4 and S6 apply.

6.2 *Peak flow control*

S2 For greenfield developments, the peak runoff rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100-year rainfall event should never exceed the peak greenfield runoff rate for the same event.

- 6.2.1 Proposed site is identified as brownfield not applicable.

S3 For developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event.

- 6.2.2 The proposed discharge rate will be restricted to 5 l/s.

6.3 *Volume control*

S4 Where reasonably practicable, for greenfield development, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100-year, 6-hour rainfall event should never exceed the greenfield runoff volume for the same event.

- 6.3.1 Proposed site is identified as brownfield not applicable.

S5 Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but should never exceed the runoff volume from the development site prior to redevelopment for that event.

The proposed discharge rate will be restricted to 5 l/s

S6 Where it is not reasonably practicable to constrain the volume of runoff to any drain, sewer or surface water body in accordance with S4 or S5 above, the runoff volume must be discharged at a rate that does not adversely affect flood risk.

- 6.3.2 The proposed drainage system has been designed to accommodate for the runoff volumes noted in section S4.

6.4 Flood risk within the development

S7 The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30-year rainfall event.

- 6.4.1 The proposed system has been designed to avoid any exceedance from the system indicating all flows will be held within the storage areas/layers designed, for all storms including the 1 in 30-year storm.

S8 The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100 year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.

- 6.4.2 The proposed system has been designed to avoid any exceedance from the system for all storms including the 1 in 100-year storm.

S9 The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100-year rainfall event are managed in exceedance routes that minimise the risks to people and property.

- 6.4.3 Any rainfall in excess of the 1 in 100-year storm will be contained within the proposed car parking areas.

6.5 Structural integrity

S10 Components must be designed to ensure structural integrity of the drainage system and any adjacent structures or infrastructure under anticipated loading conditions over the design life of the development taking into account the requirement for reasonable levels of maintenance.

- 6.5.1 All features through the proposed drainage system have been specifically chosen using detailed manufactures specifications as well as current technical guidance to accommodate for the anticipated sites use and associated loadings across the design life of the site.

S11 The materials, including products, components, fittings or naturally occurring materials, which are specified by the designer must be of a suitable nature and quality for their intended use.

- 6.5.2 All materials through the proposed drainage system have been specifically chosen using detailed manufactures specifications as well as current technical guidance to make sure they are of sufficient quality for their intended use.

6.6 Designing for maintenance considerations

S12 Pumping should only be used to facilitate drainage for those parts of the site where it is not reasonably practicable to drain water by gravity.

- 6.6.1 Pumping is not anticipated.

6.7 Construction

S13 The mode of construction of any communication with an existing sewer or drainage system must be such that the making of the communication would not be prejudicial to the structural integrity and functionality of the sewerage or drainage system.

- 6.7.1 Considerate construction practices should be employed by the nominated civils contractor when forming the proposed connection.

S14 Damage to the drainage system resulting from associated construction activities must be minimised and must be rectified before the drainage system is considered to be completed.

- 6.7.2 Continuous checks both during and post construction should be completed by the nominated contractor and supervising agent. Completion of the continuous inspections should limit the potential opportunity for damage/defects. All surveys should be made available to the design team subsequent approval or issue of appropriate remedial actions.

7.0 DRAINAGE STRATEGY

7.1 *Surface Water Drainage Strategy*

- 7.1.1 Infiltration testing should be completed prior to detailed design.
- 7.1.2 With both infiltration and discharge to watercourse not considered possible, and due to the presence of existing connection off site, in accordance with the SUDS hierarchy, it is proposed that all surface water flows arising from the proposed development are to discharge at an attenuated rate into the offsite adopted united utilities network potentially via an existing connection.
- 7.1.3 A CCTV survey must be completed prior to detailed design to confirm existing connectivity to the offsite adopted network or other discharge position together with depths and condition.
- 7.1.4 The site area inclusive of the proposed access road extends to an area of approximately 0.66 hectare (6,585m²), However following the introduction of the proposed development the impermeable area will subsequently decrease with the inclusion Increased vegetated spaces by 753m² to 0.58 ha (5,832m²).
- 7.1.5 With the above in mind the post scheme impermeable area to inform the storage estimate is currently assumed as 0.58 ha.
- 7.1.6 the anticipated volume of storage required we have based the calculation shown in **Figure 7.1** on an impermeable of 0.58ha (5832m²)

Figure 7.1 Storage Estimate

Storage Estimate

Return Period (years)	1	OK Cancel
Climate Change (%)	45	
Impermeable Area (ha)	0.580	Update
Peak Discharge (l/s)	5.000	Calc
Infiltration Coefficient (m/hr) (leave blank if no infiltration)		
Required Storage (m ³)	Calc	
	from 59	
	to 97	
With infiltration (m ³)		
	from	
	to	

- 7.1.7 The estimated volume of storage required is 59m³ to 97m³

- 7.1.8 Attenuation will be provided on the site to ensure that the flow rate of 5 l/s is not exceeded during a 1 in 100-year storm event, inclusive of a 45% allowance for climate change.
- 7.1.9 The Rain Garden area will provide an approximate volume of storage currently estimated as 64.5m³ for an assumed construction depth of 1.5m, with the cellular storage area providing an additional volume of storage of 80m³ at a depth of 0.8m.
- 7.1.10 The available void ratio throughout the rain garden is understood to be a maximum of only 35%, as such the actual available volume within the storage layer has been reduced to 22.5m³.
- 7.1.11 As the cellular storage area includes an improved void ratio of 95%, when the storage features are combined, this represents a total storage volume of 98.5m³ which is in excess of the maximum estimated storage volume required.
- 7.1.12 The .GOV website states that for the Upper Mersey Management Catchment Peak Rainfall Allowances – that the upper allowance for the 3.3% annual exceedance rainfall event a 40% allowance for climate change should be applied and 45% for the 1% annual exceedance rainfall event.
- 7.1.13 The site drainage network will be designed in accordance with current best practice to have sufficient capacity not to flood during the critical 1 in 30-year storm (plus 40% allowance for climate change) and also to constrain within the site the flood water generated for the critical 1 in 100-year storm event (plus 45% allowance for climate change). In this way the risk of off-site flooding, which could result in damage to other buildings and essential services, will be minimised and the risk of flooding elsewhere should not be increased as a result of the development proposals.
- 7.1.14 Using Sustainable drainage techniques, it will be possible to avoid any exceedance occurring at the site for all storms up to and significantly beyond the 1 in 100-year storm plus 45% climate change allowance
- 7.1.15 Although it is not considered to be a problem, to reduce the potential impact of flood water entering the building and to ensure no permanent damage is caused, these items are as follows:
- *Electrical circuitry installed at a higher level with power cables being carried down from the ceiling rather than up from the floor level.*
 - *Water-resistant materials for floors, walls and fixtures such as tiled floors, with waterproof adhesive and grout.*
 - *Front doors that reduce ingress of water all the time with no further installation required. Such methods must consider hydrostatic pressure, and that water may still come in through the floor. Such methods offer time and reduce damage but may not remove flood water from entering the house completely.*
- 7.1.16 An indicative drainage strategy is shown in **Appendix G**.
- 7.1.17 Further discussions with the appropriate approving bodies are required to agree the proposed drainage strategy.

7.2 Foul Flows

- 7.2.1 The existing site is assumed to benefit from an existing connection to the offsite public United Utilities Network, once identified through the site CCTV survey, it is proposed that all foul flows will be discharged through the existing connection.

8.0 Maintenance Strategy

8.1.1 SuDS components require good maintenance including inspections to identify performance issues and plan appropriate maintenance needs, checks on the operation and maintenance of the drainage system and landscape management. Therefore, it is intended that those responsible for the drainage within a development will be provided with an Operation and Maintenance Manual as part of the documentation provided under the Construction (Design and Management) regulations 2015 at the end of the construction works. Maintenance requirements that would be appropriate for this development, to be included in the document are outlined below.

8.1.2 All maintenance necessary will be undertaken, appointed and/or suitably managed by Lidl Great Britain Limited.

8.1.3 The Drainage network and inherent SuDS have been designed with minimal maintenance in mind. The maintenance is generally of a 'common sense' approach and is to comprise:

- Regular day to day care: - litter collection, grass cutting and checking the inlets and outlets where water enters or leaves a drainage feature.
- Occasional tasks: - managing vegetation in wet areas (ponds, swales, etc.) and removing any silt that builds up in the drainage features.
- Remedial work: -repairing damage when, and where, necessary.

Specific recommendations for each feature are provided in the following sections and should be referred to in the first instance if there are any issues.

Manholes and PPICs

8.1.4 Manholes are typically sized in accordance with Sewers for Adoption, which relates to the incoming and outgoing pipe diameters. However, as the system is not Adopted, PPICs have been used where manufacturer's limitations permit. Typically, PPICs can be used for depths up to 3m and for pipe diameters up to 150mm.

Personnel access into PPIC chambers is not possible, and therefore rodding/jetting should be carried out from ground level. This is generally accepted as good practice and in accordance with good health and safety procedures. Where larger manholes, which could accommodate man access, have been included maintenance should also take place from ground level. Man, access should be resisted and only used as a last resort.

Maintenance schedule	Required action	Frequency
Occasional Maintenance and Monitoring	Covers should be lifted and inspected for litter and debris to ensure that the runs are free flowing.	3 Monthly (or as required).

Rain Garden

- 8.1.5 A Rain Garden / Biodiversity area is proposed as part of a comprehensive treatment train to remove contaminants prior to discharge

Maintenance Schedule	Required Action	Frequency
Regular maintenance	Litter and debris removal.	Monthly (or as required).
	Grass cutting – to retain grass height within specified design range (refer to landscape architects recommendations).	Monthly (during growing season), or as required.
	Manage other vegetation and remove nuisance plants.	Monthly (at start, then as required).
Occasional maintenance	Check for poor vegetation growth due to lack of sunlight or dropping of leaf litter, and cut back adjacent vegetation where possible.	Annually.
	Re-seed areas of poor vegetation growth. Alter plant types to better suit conditions, if required.	Annually, or if bare soil is exposed over 10% or more of the swale.
Remedial actions	Repair erosion or other damage by re-turfing or reseeding.	As required.
	Re-level uneven surfaces and reinstate design levels.	As required.
	Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface.	As required.
Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required.	Monthly.
	Inspect infiltration surfaces for ponding, compaction, and silt accumulation. Record areas where water is ponding for > 48hours.	Monthly, or when required. Advise BKPL if ponding is occurring as noted.

Flow Control Device

- 8.1.6 The surface water flow off site is limited to no more than 5 l/s. The flow is limited by a Hydrobrake Optimum flow control. These are proprietary systems and will be installed in line with the manufacturers written instructions. Operation and Maintenance guidance is provided within the manufacturers' standard documentation.

Pumping Station

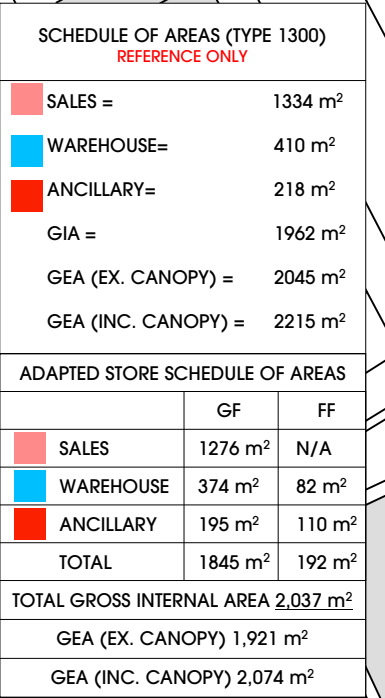
- 8.1.7 This is a proprietary system and will be installed in line with the manufacturers written instructions. Operation and Maintenance guidance is provided within the manufacturers' standard documentation.

9.0 CONCLUSIONS

- 9.1.1 The site is Wholly contained within in Environment Agency (EA) Flood Zone 1. Reference to NPPF Table 3 shows that an Exception Test is not required as buildings used for shops are classified as less vulnerable and this use is acceptable in areas categorised as Zones 1.
- 9.1.2 Infiltration tests are not considered appropriate due the presence of stiff clay and the potential to mobilise contaminants.
- 9.1.3 The risk of flooding elsewhere should not be increased as a result of the development.
- 9.1.4 A maximum permissible discharge rate of 5/s for the 1 in 100-year storm event plus 45% allowance for climate change will be used to inform the proposed design.
- 9.1.5 Attenuation will be provided on the site to ensure that the reduction to only 5 l/s which is significantly below the calculated brownfield run off rate is not exceeded during a 1 in 100-year storm event, inclusive of a 45% allowance for climate change.
- 9.1.6 The new site drainage will be designed with sufficient capacity not to flood during a 1 in 30-year storm event as well as to contain flood water generated from a 1 in 100 year plus climate change storm event (+45%) within the site. The risk of off-site flooding would not increase as a result of the development and safe access and egress will be maintained.
- 9.1.7 Although not specifically required, the use of Flood resilient measures should be considered to reduce the effect of any flooding that may be experienced over the design life of the development.
- 9.1.8 Foul flows are anticipated to communicate with the adopted United Utilities network within the following identification of the existing connection.
- 9.1.9 Discharge restrictions/charges may apply for connections to the public drainage network and for discharge of surface waters into the adjacent watercourse.

The potential for pollution of controlled waters is considered to be low provided best practice procedures are following during development. Drainage systems should be maintained to ensure that they do not become blocked and unable to discharge.

Appendix A



client	project
 Lidl GB Ltd	Wilmslow Rd, Rusholme
	drawing title
	Proposed Setting Out Site Plan

date August 2024
status Planning
scale 1:500 @ A3
drawn JBH checked MH
job no. 2594 dwg no. P402 rev. E

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Appendix B



DESKTOP UTILITY RECORDS		
Utility Type	Provider Details	Date Acquired
Gas	Cadent	11/03/2024
Water + Sewers	United Utilities	11/03/2024
Electric	Electric north west	11/03/2024
BT	Openreach	11/03/2024
Telecoms	Virgin, Vodafone	11/03/2024

1. Warning:
Water and Gas leaks to individual properties are often of a size that cannot be detected using EVLs or GPR methods. Therefore, the most possible trouble has been added from surface evidence: pipe leaks, valves, or other devices that are not covered by the GPR method. The technique should be used at all times, in line with the requirements of HSG47 and current CDM regulations.

2. Warning:
Assessment of positions are indicative only and are in an approximate position. Safe digging practices in accordance with HSG 47(G47) must be used to verify the information and establish their actual position.

3. Warning:
Records information and positions are indicative only and are in an approximate position. Safe digging practices in accordance with HSG 47(G47) must be used to verify the information and establish their actual position.

4. GPR Warning:
GPR is a non-invasive method. GPR indicates a possible utility or feature underground that we have not been able to identify fully, it is down to the client discretion if they need to dig to confirm the utility or feature. The GPR method features will identify the position. The target we show may not be complete in the order of 30 cm or 40 cm dimensions due to ground conditions affecting the quality of GPR data.

SURVEY AND DATUM INFORMATION:			
Pseudo Orthometric Survey plane grid tied to National Grid via GPS observations at survey control point ST7601. Bearing ST7601 to ST7602: 62°37'51" Survey control as indicated.			
<u>UTILITY NOTES:</u>			
Services shown outside the survey boundary are for information only and may not be complete. If information is required outside our survey boundary, please contact a Technical Project Manager.			
<u>WEATHER CONDITIONS:</u>			

Project	Lidl GB Ltd.			
	261 Wimslow Road, Rushmore, M14 5HA			
Survey Quality	Topographical and QLT"B" Utility Survey			
Start Date of Survey:	22/05/2024			
Drawing Status	Surveyed:	Drawn:	Approved:	
Final	RS	JMI	LJM	
Digital File	Original Size	Scale:	Sheet:	
SP24659-0524-01.dwg	A0	1:200	Sheet:	1 of 1
Drawing No.:	SP24659-0524-01			Revision:
				*



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Registered
Surveyors



ICES



THE SURVEYORS



GPR



Avalon



HAS



INSTITUTION OF
SURVEYORS

Appendix C

CITY ENGINEER AND SURVEYORS DEPARTMENT

SJ89NE 8538 9506 675

SITE INVESTIGATION FOR Main Drainage					DATE COMMENCED 5.8.84					
LOCATION Dickenson Road			REF:		BORING METHOD Cable Percussive					
BOREHOLE No. 1					BORING DIAMETER 200mm					
GRID REFERENCE					SCALE: 1.50 approx.					
DATE	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION		No. of Blows	Legend
							From	To		
5.8.84			0.25		Bituminous Surfacing					
			0.60		Crushed Stone					
			1.20		Housebricks, ashes, stone etc. Made ground.	P1	1.15	1.45	4	
					Very stiff/hard Sandy CLAY, slightly laminated in parts, with stone inclusions and occasional lenses of silt and sand.	U2	2.0	2.45		
				D3		2.45				
				U4		3.0	3.45			
				D5		3.45				
				U6		4.0	4.45			
				D7		4.45				
				U8		5.0	5.45			
				D9		5.45				
				U10		6.0	6.45			
	D11	6.45								
	U12	7.0	7.20							
		7.20								
5.8.84	3.4	Dry	7.50		Clayey fine grained gravelly SAND					
6.8.84		Dry			Very stiff brown sandy CLAY with stone inclusions.	U14	8.0	8.45		
			8.50			D15	8.45			
6.8.84					Very dense fine/medium grained SANDSTONE	P16	8.85	8.92	50	
						P17	9.45	9.52	50	
						P18	9.7	9.85	63	
			9.85							
WATER OBSERVATIONS DURING BORING					WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION					
DEPTH OF WATER ENTRY (m)	ESTIMATED SEEPAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)	DATE	WATER LEVEL	DEPTH OF CASING				
None										
observed										
				REMARKS:-						
SAMPLE TEST KEY			D - DISTURBED SAMPLE B - BULK SAMPLE U - UNDISTURBED SAMPLE P - SPT SAMPLE W - WATER SAMPLE							
NOTE: WHERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN (NOT N - VALUE)										
ALL DEPTHS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED										
REMARKS Trial hole excavated to 1.0m below ground level. Borehole backfilled with concrete on completion. SPT sample P18 recorded 63 blows for the initial 150mm penetration.										

Appendix D

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
385418/394990

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
385418/394990

Scale
1:2500

Created
30 Sep 2024 20:05

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area


0 20 40 60m

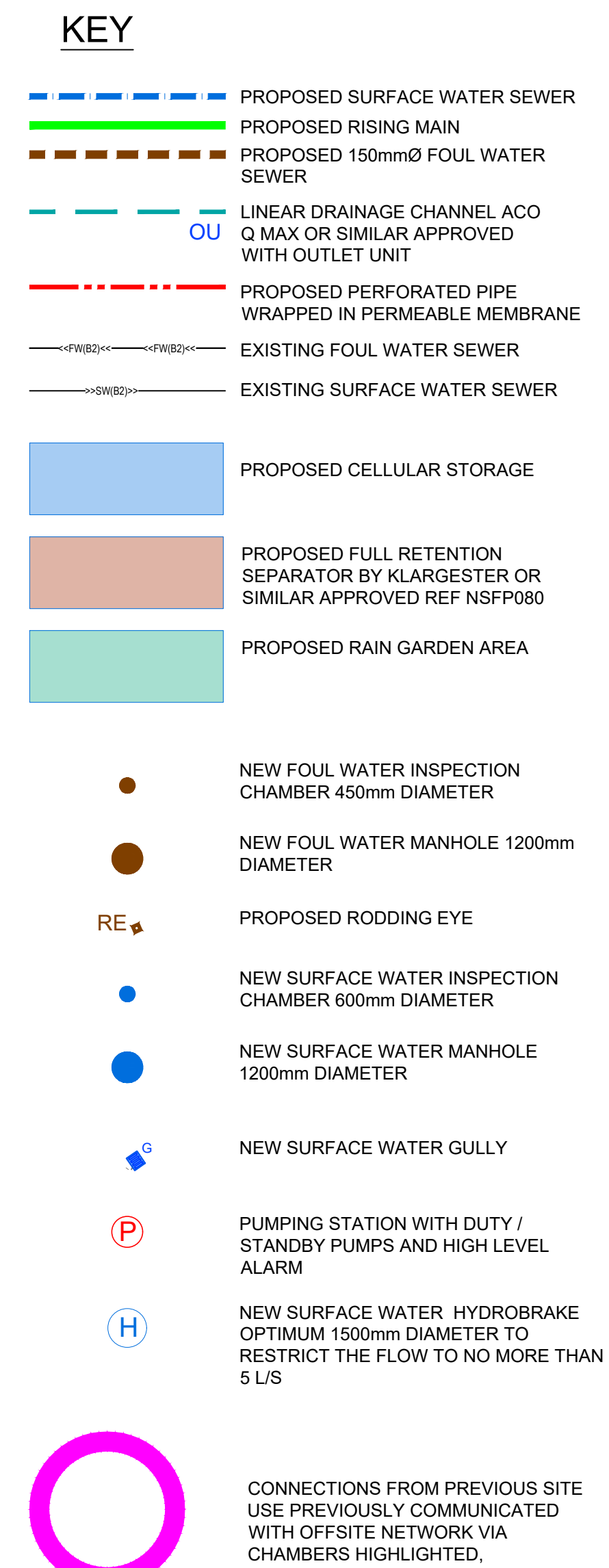
Appendix E

Appendix F

SUMMARY TABLE		DESIGN CONDITIONS			
		1	2	3	4
Land Use Type	Commercial/Industrial roofing: Inert materials				
Pollution Hazard Level	Very low				
Pollution Hazard Indices					
TSS	0.3				
Metals	0.2				
Hydrocarbons	0.05				
SuDS components proposed					
Component 1	Bioretention system (where the system is not designed as an infiltration component)	SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B			
Component 2	None				
Component 3	None				
SuDS Pollution Mitigation Indices					
TSS	0.8				
Metals	0.8				
Hydrocarbons	0.8				
Groundwater protection type	Bioretention component underlain by 300 mm minimum depth of soils with good contamination attenuation potential	All designs must include a minimum of 1 m unsaturated depth of subsoil or aquifer material between the infiltration surface and the maximum likely groundwater level. Infiltration components should always be preceded by upstream component(s) that trap(s) silt, or designed specifically to retain sediment in a separate lined zone, easily accessible for maintenance, such that the sediment will not be re-suspended in subsequent events	The underlying soils must provide good contaminant attenuation potential (eg as recommended in Sniffer 2008 (a) and (b) / Scott Wilson (2010) or other appropriate guidance). Alternative depth and soil combinations must provide equivalent protection to the underlying groundwater		
Groundwater protection					
Pollution Mitigation Indices					
TSS	0.8				
Metals	0.8				
Hydrocarbons	0.8				
Combined Pollution Mitigation Indices		Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.	Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England		
TSS	>0.95				
Metals	>0.95				
Hydrocarbons	>0.95				
Acceptability of Pollution Mitigation					
TSS	Sufficient				
Metals	Sufficient				
Hydrocarbons	Sufficient				

SUMMARY TABLE		DESIGN CONDITIONS			
		1	2	3	4
Land Use Type Pollution Hazard Level Pollution Hazard Indices TSS Metals Hydrocarbons	Non-residential car parking with frequent change (eg hospitals, retail) Medium 0.7 0.6 0.7				
SuDS components proposed		SuDS components can only be assumed to deliver these indices if they follow design guidance with respect to hydraulics and treatment set out in the relevant technical component chapters of the SuDS Manual. See also checklists in Appendix B			
Component 1	Bioretention system (where the system is not designed as an infiltration component)				
Component 2	None				
Component 3	None				
SuDS Pollution Mitigation Indices TSS Metals Hydrocarbons	 0.8 0.8 0.8				
Groundwater protection type Groundwater protection Pollution Mitigation Indices TSS Metals Hydrocarbons	Bioretention component underlain by 300 mm minimum depth of soils with good contamination attenuation potential 0.8 0.8 0.8	All designs must include a minimum of 1 m unsaturated depth of subsoil or aquifer material between the infiltration surface and the maximum likely groundwater level. Infiltration components should always be preceded by upstream component(s) that trap(s) silt, or designed specifically to retain sediment in a separate lined zone, easily accessible for maintenance, such that the sediment will not be re-suspended in subsequent events	The underlying soils must provide good contaminant attenuation potential (eg as recommended in Sniffer 2008 (a) and (b) / Scott Wilson (2010) or other appropriate guidance). Alternative depth and soil combinations must provide equivalent protection to the underlying groundwater		
Combined Pollution Mitigation Indices TSS Metals Hydrocarbons Acceptability of Pollution Mitigation TSS Metals Hydrocarbons	 >0.95 >0.95 >0.95 Sufficient Sufficient Sufficient	Note: In order to meet both Water Quality criteria set out in the SuDS Manual (Chapter 4), Interception should be delivered for all impermeable areas wherever possible. Interception delivery and treatment may be met by the same components, but Interception requires separate evaluation.	Reference to local planning documents should also be made to identify any additional protection required for sites due to habitat conservation (see Chapter 7 The SuDS design process). The implications of developments on or within close proximity to an area with an environmental designation, such as a Site of Special Scientific Interest (SSSI), should be considered via consultation with relevant conservation bodies such as Natural England		

Appendix G



P3	FEB 25	SITE LAYOUT UPDATED	GRE		
P2	OCT 24	RAIN GARDEN REPOSITIONED + SITE LAYOUT UPDATED	GRE		
P1	SEP 24	FIRST ISSUE	GRE		
Rev	Date	Revision Details	Rv	Chkd	Appr

Cora^{iH}t

Client	LIDL GREAT BRITAIN Ltd
--------	------------------------

Project	RUSHOLME
---------	----------

Title	PROPOSED DRAINAGE ARRANGEMENT SHEET 1 of 2
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Drawing No.		Revision	
16-3046-200		P3	
Scale	1:200 @ A1	Date	SEPTEMBER 2024
Drawn	GRE	Chk	App

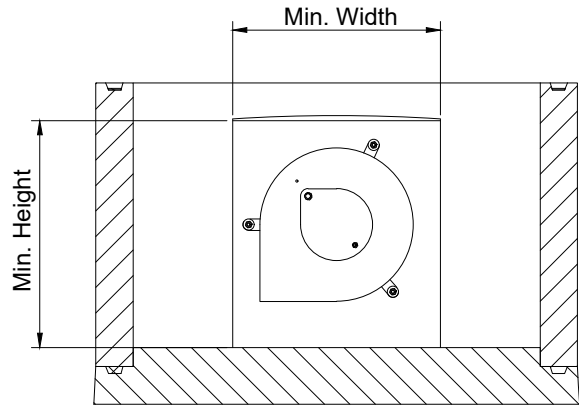
Common name	Scientific name	Habit	Sunlight and Aspect	Origin
Guelder rose	Viburnum opulus	Perennial shrub	Any	Native. Flowers attract insects and berries are eaten by birds.
Dogwood	Cornus sanguinea	Perennial shrub	Any	Native. Leaves are larval food for vase bearer moth and berries eaten by birds. Often planted for attractive winter stems.
Culvers root	Veronicastrum virginicum	Herbaceous perennial	Full sun or partial shade	Non-native. Tall with long terminal blue flower spikes. On the RHS 'plants for pollinators' list.
Aster	Aster spp.	Herbaceous perennial	Full sun or partial shade	Non-native. Often late flowering. Clump forming. Several species on the RHS 'plants for pollinators' list.
Black eyed susan	Rudbeckia birta	Herbaceous annual or biennial	Full sun or partial shade	Non-native. Spectacular yellow and black flowers. On RHS 'plants for pollinators' list.
Stinking hellebore	Helleborus foetidus	Herbaceous perennial	Full sun or partial shade	Native. Winter flowers.
Montbretia	Crocsmia spp.	Deciduous rhizomatous perennial	Partial shade	Naturalised. Red flowers. Thrives in most conditions.
Bugle	Ajuga reptans	Rhizomatous perennial	Partial shade	Native. Low growing and will form a mat.
Columbine	Aquilegia spp.	Herbaceous perennial	Full sun or partial shade	Non-native. Clump forming with tall flower spikes. On RHS 'plants for pollinators' list.
Inula	Inula hookeri	Herbaceous perennial	Partial shade	Tall clump forming with yellow flowers. On RHS 'plants for pollinators' list.
Hemp agrimony	Eupatorium cannabinum	Herbaceous perennial	Full sun or partial shade	Native. Sub-shrubs with pink flowers.
Bellflower	Campanula glomerata	Herbaceous perennial	Full sun or partial shade	Native. Clumps bearing violet-blue bell shaped flowers.
Sneezeweed	Helenium sp.	Herbaceous perennial	Full sun	Non-native. Clump forming with red flowers. On RHS 'plants for pollinators' list.
Lesser periwinkle	Vinca minor	Perennial sub-shrub	Any	Non-native. Ground cover with blue flowers.
Elephants ear	Bergenia sp.	Rhizomatous perennial	Full sun or partial shade	Non-native. Large leaves and pink flowers.
Plantain lilies	Hosta spp.	Herbaceous perennial	Part shade	Non-native. Attractive light coloured flowers.
Yellow flag	Iris pseudocorus	Rhizomatous perennial	Full sun or partial shade	Native. Likely to prefer wetter areas near inlet.
Siberian flag	Iris sibirica	Rhizomatous perennial	Full sun or partial shade	Non-native. Blue flowers. Prefers moist but well drained soil.
Garlic and onions	Allium spp.	Bulbous perennials	Full sun	Non-native. On RHS 'plants for pollinators' list.
Soft rush	Juncus effusus	Evergreen perennial	Full sun or partial shade	Native. Form tussocks – likely to prefer wetter areas.
Pendulous sedge	Carex pendula	Rhizomatous perennial	Full sun or partial shade	Native. Nodding flower spikes. Likely to prefer wetter areas near inlet.
Zebra grass	Miscanthis sinensis	Perennial, deciduous grass	Full sun	Non-native. Tussock forming ornamental grass with silky flowers.
Switch grass	Panicum virgatum	Deciduous perennial grass	Full sun	Non-native. Tussock forming ornamental grass.
Royal fern	Osmunda regalis	Deciduous fern	Any	Native. Large clump-forming plants.
Male fern	Dryopteris felix-mas	Deciduous or evergreen fern	Partial shade or full shade	Native. Large shuttlecock-like form.
Broad buckler fern	Dryopteris dilatata	Deciduous or evergreen fern	Partial shade or full shade	Native. Large shuttlecock-like form.

WATER COMPATIBLE PLANT SPECIES
FOR BIO-RETENTION AREA

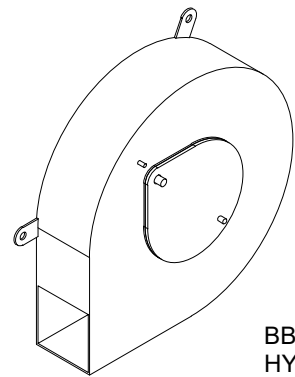
DRAINAGE NOTES

1. ALL NON ADOPTABLE DRAINS UP TO 150 Dia. TO BE 'POLYPIPE' uPVC UNDERGROUND DRAIN' MANUFACTURED IN ACCORDANCE WITH BS EN 1401-1 OR EQUAL APPROVED.
2. ALL NON ADOPTABLE DRAINS WITH A PIPE Dia of 225 or 300 TO BE EITHER A PLAIN WALLED PLASTIC PIPE TO BS 1401-1 (POLYSEWER) OR A STRUCTURED WALL PLASTIC PIPE TO WIS-04-35-01 'POLYSEWER'. OR EQUAL APPROVED
3. ALL ADOPTABLE DRAINS UP TO 300 Dia. TO BE 'POLYSEWER' BY 'POLYPIPE' AND MANUFACTURED IN ACCORDANCE WITH THE WATER INDUSTRY SPECIFICATION WIS-4-35-01.
4. DRAINAGE PIPEWORK 400mm to 600mm DIA TO BE 'RIDGIDRAIN' HDPE BY POLYPIPE OR EQUAL APPROVED.
5. ALL PIPE LENGTHS NOT TO EXCEED 3m.
6. DRAINS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
7. NEW INSPECTION CHAMBERS (IC) TO BE A MINIMUM OF 450MM DIA. EXCEPT FOR MINI ACCESS CHAMBERS WHICH MAY BE SMALLER, REFER TO M.H. SCHEDULE FOR ACTUAL SIZES.
8. ALL EXTERNAL RAINWATER PIPES (RWP) TO BE TERMINATED AT RODDABLE GULLIES. INTERNAL RWP'S TO ARCHITECTS DETAILS BUT SHOULD ALLOW FOR RODDABLE ACCESS.
9. FOR ALL DRAINAGE ABOVE GROUND FLOOR SLAB INCLUDING SETTING OUT FOR PENETRATIONS THROUGH THE GROUND FLOOR SLAB REFER TO ARCHITECTS DRAWING & SPECIFICATIONS
10. ANY DRAINS PASSING THROUGH SUBSTRUCTURE WALLS TO HAVE A MINIMUM 50mm CLEAR SPACE. RC LINTEL SUPPORT ABOVE & CEMENT FIBRE COLLARS EITHER SIDE TO PREVENT VERMIN ENTRY
11. ANY DRAINS CAST IN & PASSING THROUGH CONCRETE GROUND BEAMS TO HAVE A FLEXIBLE JOINT NOT MORE THAN 150mm FROM THE FACE OF THE GROUND BEAM. (FLEXIBLE JOINT TO MANUFACTURERS DETAILS) AND A MAXIMUM 600mm LONG ROCKER PIPER EITHER SIDE
12. ANY ALTERATIONS TO DRAINAGE PROPOSED BY CONTRACTOR TO BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK ON SITE. ANY REVISIONS ARE ALSO SUBJECT TO THE APPROVAL OF THE LOCAL BUILDING INSPECTOR
13. ALL DRAINS RUNNING UNDER BUILDINGS TO HAVE A MINIMUM FALL OF 1:40 TOWARDS THE BUILDING EXTERIOR. PIPE TO BE ENCASED IN 100MM GRANULAR FILL.
14. COVER LEVELS SHOWN ARE APPROXIMATE ONLY AND SHOULD BE ALTERED TO SUIT FINISHED SURFACE LEVELS.
15. THE BEDDING SPECIFICATION FOR ALL ADOPTABLE DRAINS WHERE COVER IS GREATER THAN 1200mm SHALL BE TYPE 'S'...WHERE COVER IS LESS THAN 1200mm TYPE 'Z' SHALL BE USED
16. THE DEVELOPER/CONTRACTOR MUST SELF VET AND CERTIFY THAT THE DESIGN CRITERIA, MATERIAL STANDARDS AND WORKMANSHIP SPECIFICATIONS FOR THE PROPOSED SEWERS ARE IN ACCORDANCE WITH THOSE SET OUT IN SEWERS FOR ADOPTION 7TH EDITION' PROPOSED COVER AND INVERT LEVELS TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO ANY WORKS COMMENCING ONSITE
17. ALL PPIC'S LOCATED WITHIN VEHICLE AREAS TO RECEIVE A MINIMUM 150mm CONCRETE BED AND SURROUND

NOTE - A pre-formed Hydro-Brake® Chamber Base is available from Hydro International with Hydro-Brake Optimum™ pre-fitted

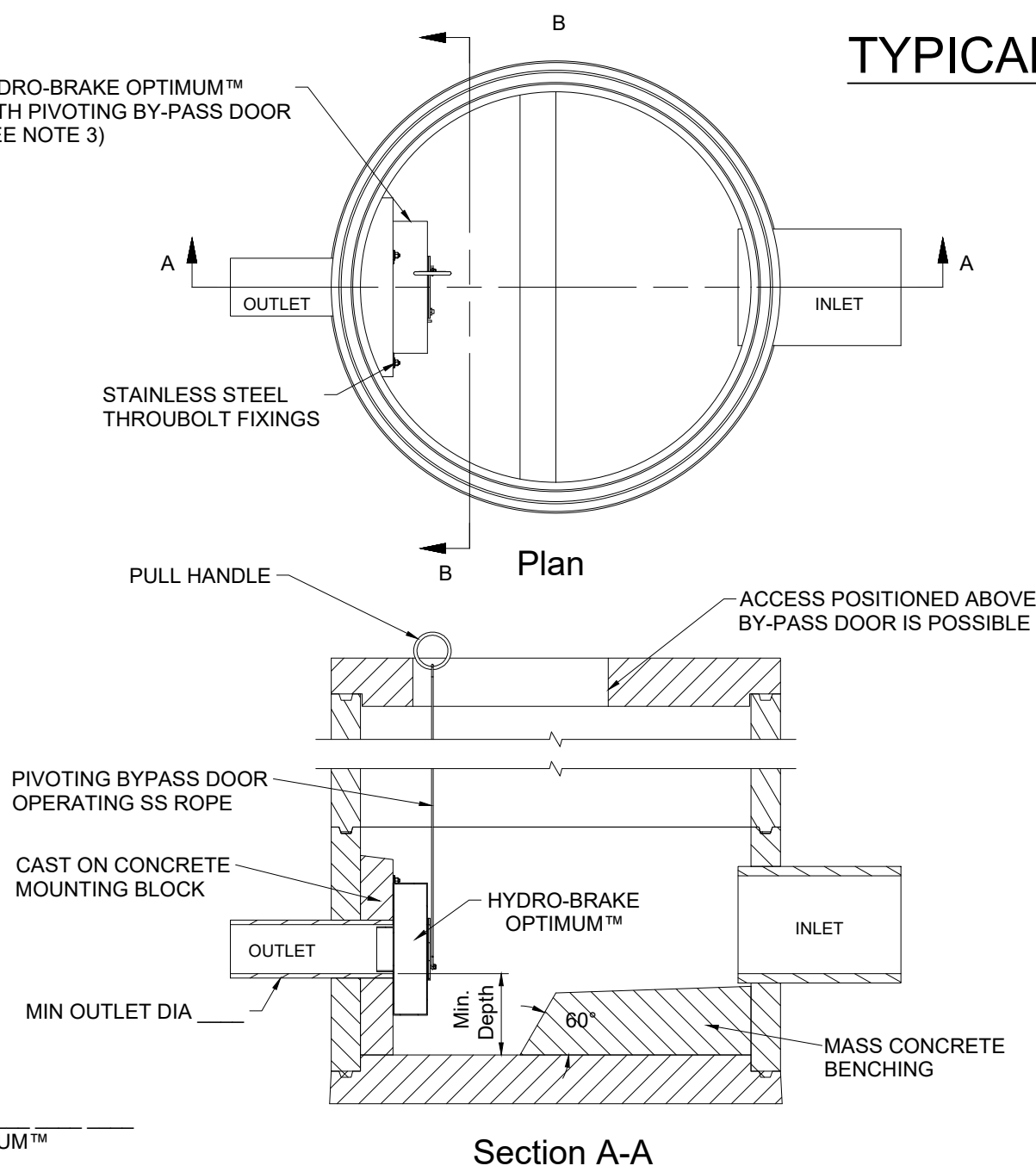


Section B-B
(View on mounting block)

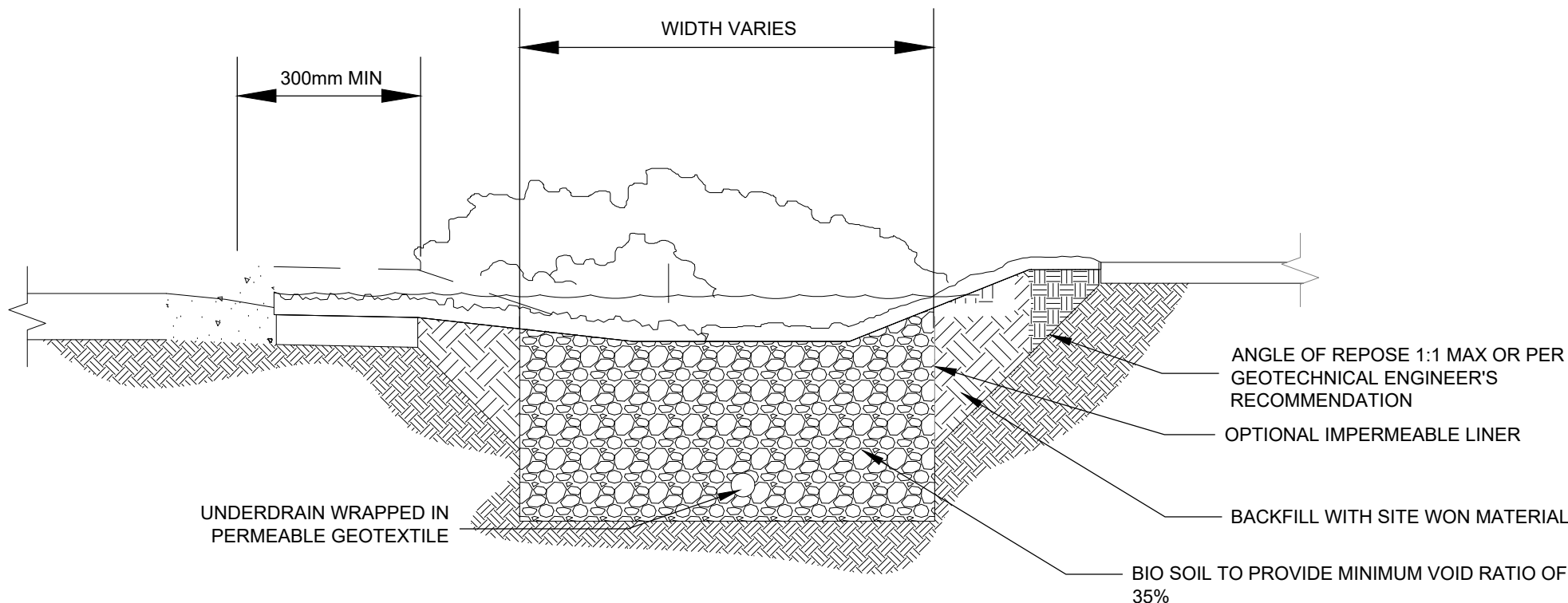


BBA APPROVED S
HYDRO-BRAKE OPTIMUM™

HYDRO-BRAKE OPTIMUM™
WITH PIVOTING BY-PASS DOOR
(SEE NOTE 3)



TYPICAL HYDROBRAKE
OPTIMUM DETAIL

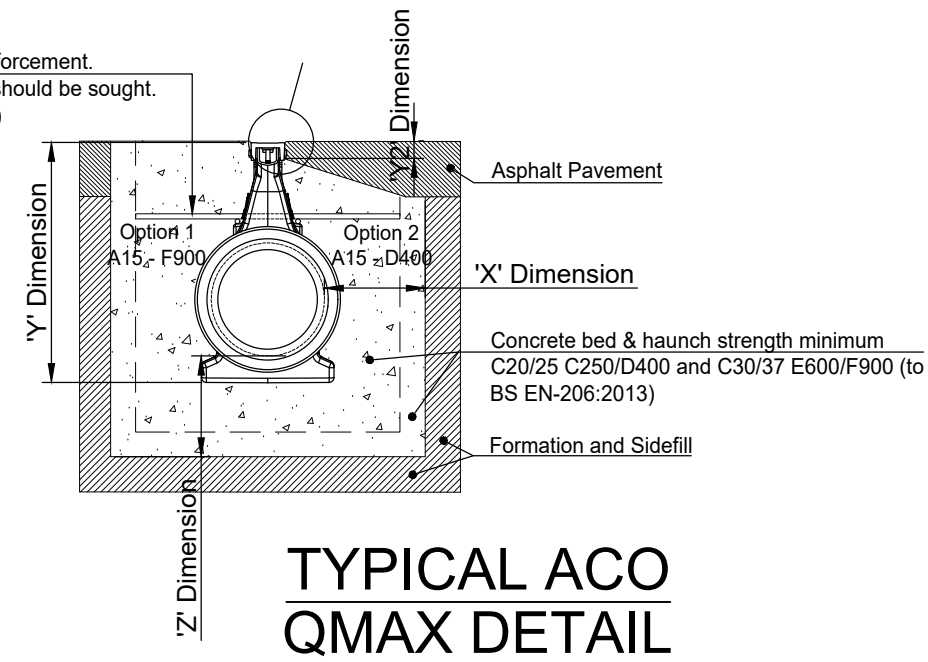


TYPICAL RAINGARDEN DETAIL

Asphalt set 3-6mm minimum above top of edge rail

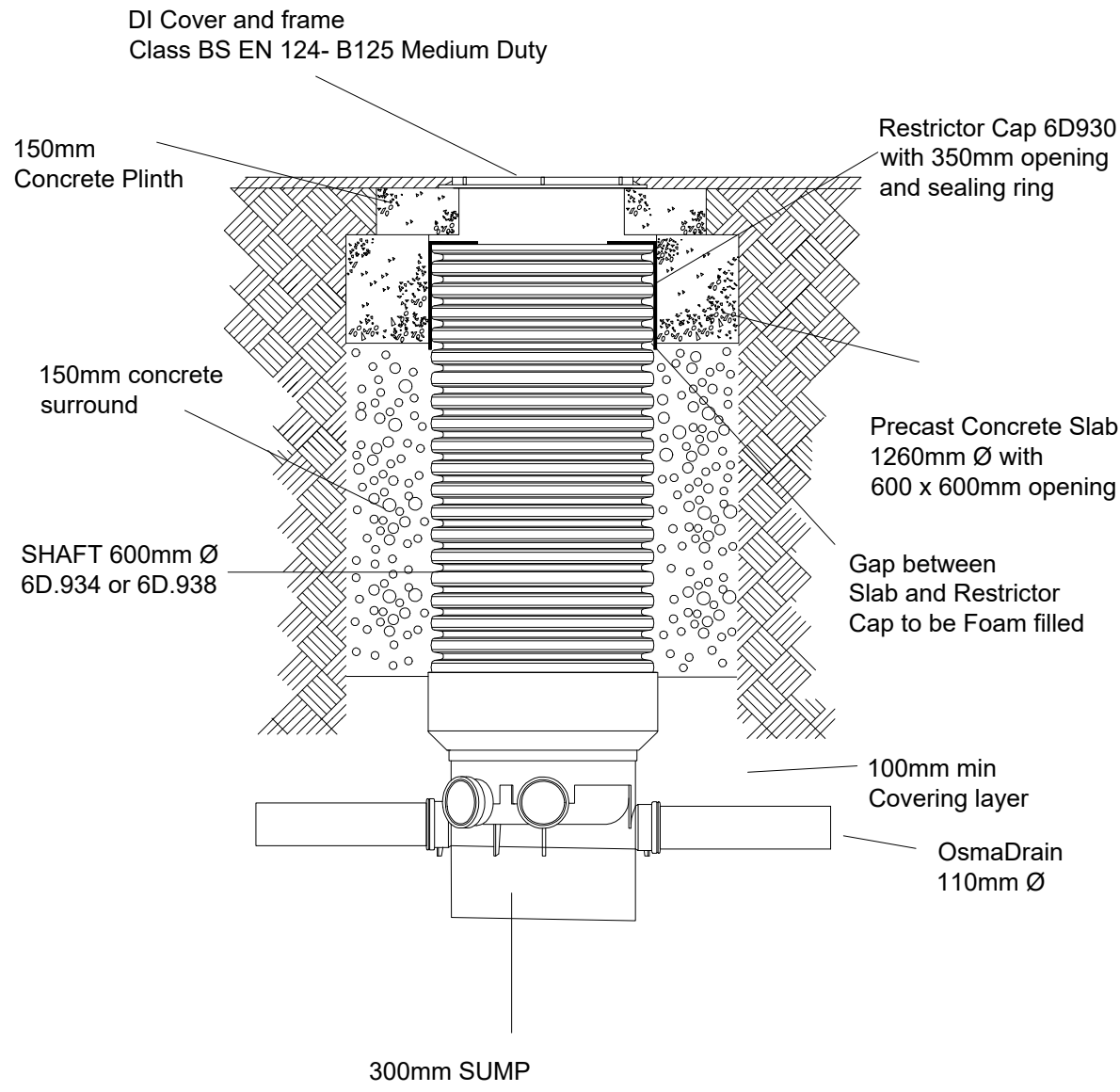
1 : 15 ACO Qmax Q-Guard/Q-Flow
Asphalt Pavement (Option 1 and 2)

F900 Required Reinforcement.
Engineering advice should be sought.
(See drawing 22396)



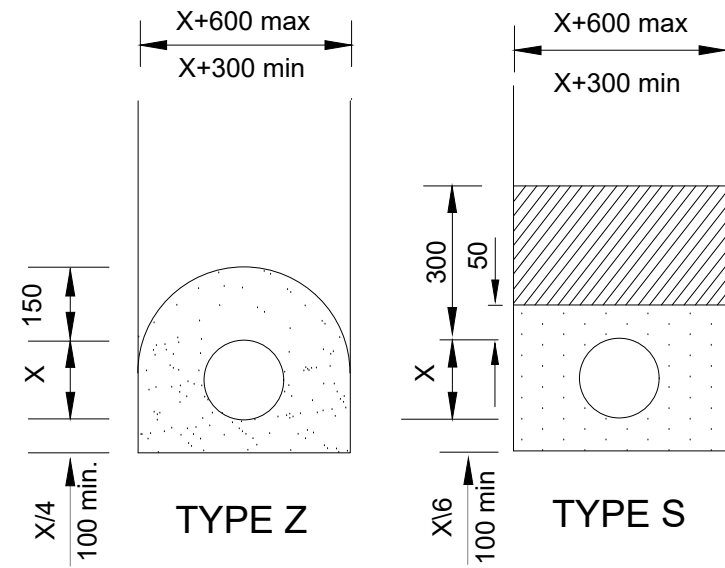
TYPICAL ACO
QMAX DETAIL

Load Class	C250	D400	E600	F900
Minimum	X	X-DIM-1	X-DIM-2	X-DIM-3
Dimensions (mm)	Y	Full Channel Height (Less Y2 where applicable)	Z	Z-DIM-1
Maximum	Y2	Y2-DIM-1	Y2-DIM-2	Y2-DIM-3
Dimensions (mm)	Y3	Y3-DIM-1	Y3-DIM-2	Y3-DIM-3
Reinforcement	R-1	R-2	R-3	R-4
Load Class Concrete	C-1	C-2	C-3	C-4

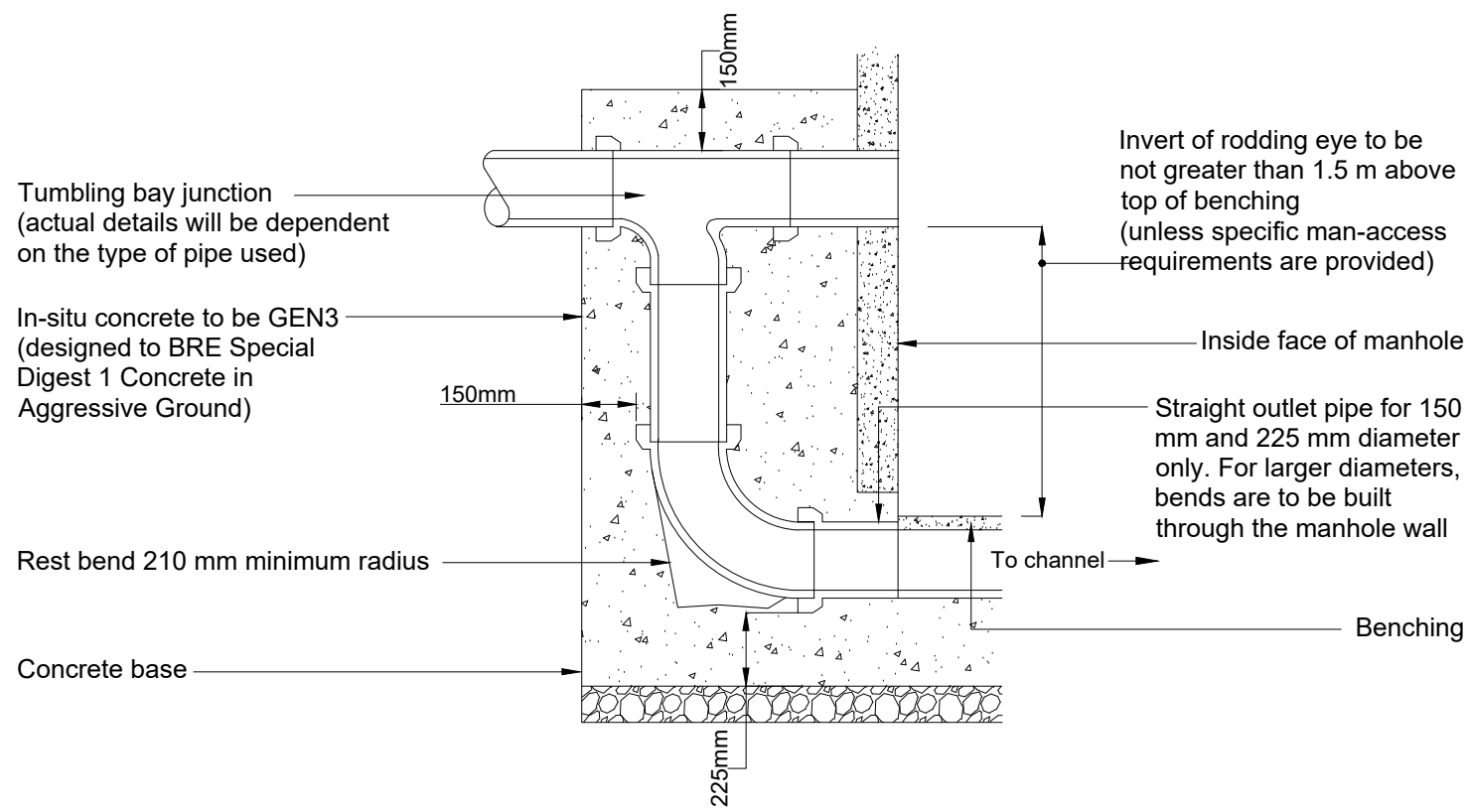


TYPICAL CATCHPIT
CHAMBER DETAIL
non entry

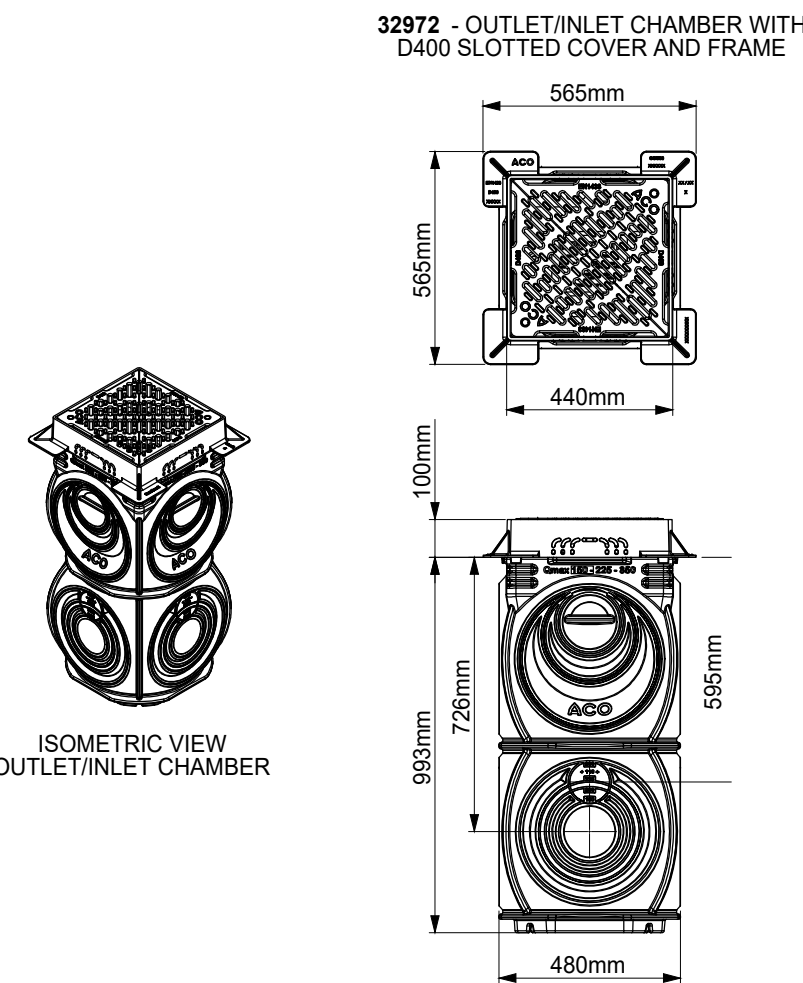
- CONCRETE TO S.H.W
CLAUSE 503.3 (iii)
- GRANULAR MATERIAL TO
S.H.W. CLAUSE 503.3 (i).
- CLASS 8 MATERIAL TO
S.H.W CLAUSE 503.3 (iv)



TYPICAL PIPE BED AND
SURROUND DETAIL



VERTICAL BACKDROP
DETIAL



QMAX 150, 225 AND 350 (D400)
ACCESS, OUTLET/INLET AND
SILT CHAMBER DETAIL

P3 P2 P1	FEB 25 OCT 24 SEP 24	SITE LAYOUT UPDATED RAIN GARDEN REPOSITIONED FIRST ISSUE	GRE GRE		
Rev	Date	Revision Details	By	Chkd	Appd
Client LIDL GREAT BRITAIN Ltd					
Project RUSHOLME					
Title PROPOSED DRAINAGE ARRANGEMENT SHEET 2 of 2					
Drawing No. 16-3046-200				Revision P3	
Scale NTS		Date SEPTEMBER 2024			
Drawn	GRE	Chk		App	

Appendix H



Lidl Great Britain Limited & Buzzard Holdings Limited

Geo-Environmental Investigation Report

261 Wilmslow Road, Manchester

June 2024



Client: Lidl Great Britain Limited & Buzzard Holdings Limited
Project: 261 Wilmslow Road, Manchester
Title: Geo-Environmental Investigation Report
Report Ref: 24-1965-P-R1
Status: Final
Date: June 2024

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Prepared and Approved for Release by:



Steven Dempsey BSc(Hons) MSc CGeol EurGeol FGS
Director



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24-1965-P/02/A	Exploratory Hole Location Plan
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Appendices

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Appendix B	Consultants Coal Mining Report
Appendix C	Preliminary UXO Risk Assessment
Appendix D	Exploratory Hole Records
Appendix E	Chemical Laboratory Analysis Results
Appendix F	Geotechnical Laboratory Analysis Results
Appendix G	OB-Screen Human Health Screening Assessment
Appendix H	Ground Gas Monitoring Results
Appendix I	TRL DCP Results



Summary

Development Proposals	Lidl propose to develop the site with the construction of a new store building in the southern area of the site, with car parking in the western and northern areas of the site and access from Wilmslow Road to the west. The site currently consists of a large, derelict, centrally positioned building which was formerly a bus garage with external hardstanding areas.
Site Setting and History	The site area is approximately 0.65 hectares and is centred around National Grid Reference: 385417, 394988. The site is broadly rectangular in shape and is shown on the appended Site Location Plan 24-1965-P/01/A. A review of the historical maps indicates that the site comprised some residential dwellings with associated gardens up to 1951 when the buildings in the west of the site were shown to be a garage. Further structures were then also present within the east of the site. By 1971 a structure with the appearance of a fuel filling station was shown in the west of the site and the current large bus garage structure was present centrally on site. Wider land use in the surrounding area comprises commercial, residential and recreational land.
Ground Investigation Methodology	Twelve window sample borehole locations (WS01-WS12) were advanced across the site to depths of up to 5.00m below ground level (bgl) using a small, tracked, light percussion window sampling rig on the 22nd and 23rd May 2024. Four TRL DCP's (DCP01-DCP04) were undertaken within the accessible, proposed car parking areas in order to calculate CBR values. Gas and groundwater monitoring wells were installed within WS02, WS08 and WS11 to depths of up to 5.00m bgl.
Encountered Strata	The ground conditions encountered in the exploratory holes across the site comprised variable thicknesses of reinforced concrete surfacing, present to 0.15m bgl to 0.23m bgl with localised bituminous surfacing in WS02 and concrete paving blocks in WS04. Beneath the hardstanding, variable, granular Made Ground was present to 0.25m bgl to 1.15m bgl. A concrete obstruction, believed to be an old concrete foundation was encountered at 0.90m bgl in WS01. The natural strata comprised predominantly firm to very stiff, gravelly CLAY. Localised hydrocarbon odours were noted within WS01, WS02, WS08 and WS11.
Contamination Assessment	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, VOC's or PAH's were recorded above their adopted screening values. Fibres of Chrysotile Asbestos were detected within the Made Ground WS08, WS11 and WS12 at depths of 0.20m bgl to 0.50m bgl. Subsequent quantification confirmed that the concentrations of Asbestos within the matrix was at a trace concentrations of <0.001% to 0.012%. Although not at concentrations which pose a risk to human health, the recorded TPH and PAH concentrations may pose a risk to buried PE drinking water pipes pending confirmation with the local water authority. As a precautionary measure, it is recommended that barrier pipe be used on site for buried drinking water pipes.
Ground Gas Risk Assessment	In line with the recommendations provided in CIRIA 665, a GSV of 0.0015l/hr has been calculated for carbon dioxide. The GSV's classify the site as K0 Characteristic Situation 1 (Very Low Risk) whereby no ground gas protective measures are required for the proposed building on site. No radon protective measures are required for the site.
Waste Assessment	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 Classification of Waste or CL:AIRE Code of Practice. It should be noted that the materials on site should only be classified as a waste material if they are discarded, there is an intent to discard them or if there is a requirement to discard them.



	A level 1 waste characterisation of all the recorded chemical laboratory analysis results across the site would indicate that a Non-Hazardous Waste classification is likely to be appropriate for the Made Ground on site. The three recorded instances of Asbestos have been quantified as being <0.001% to 0.012% which are below the commonly accepted Hazardous Waste threshold of 0.1%. The Made Ground waste classification therefore remains as Non-Hazardous. WAC analysis which has been undertaken on Made Ground sample WS01/1.00m, indicates that the Made Ground at this location must remain Non-Hazardous due to the recorded concentration of Antimony. WAC analysis undertaken on samples WS07/0.40m and WS10/0.50m indicates that these Made Ground materials can be classified as Inert Waste, which is a sub-category of Non-Hazardous. The Asbestos impacted Made Ground in and around WS08. WS11 and WS12 remains a Non-Hazardous Waste classification. The natural strata on site would be classified as default Inert Waste.
Geotechnical Assessment	The footprint of the proposed store is covered, in the most part by the existing, large building on site or external hardstanding areas. It is likely therefore that the demolition of the building and the grubbing out of the existing floor slab, foundations and buried drainage/services will generate significant disturbance to depths of 0.50m bgl to 2.00m bgl. It is therefore recommended that new trench fill foundations for the store be advanced to a depth of at least 2.00m bgl where there is significant disturbance or at a depth of 1.00m bgl where there is minimal disturbance to depths shallower than 1.00m bgl, founding within the firm becoming stiff to very stiff cohesive strata. As a guide for a 0.60m wide foundation taken down to a depth of 1.00m, a net allowable bearing pressure of at least 115kN/m² would be available, with 140kN/m² available at 2.00m bgl where required. For a 2.00m by 2.00m pad foundation at 1.00m bgl, 130kN/m² would be available. Sufficient reinforcement should be included in order to minimise any differential settlement. Given the presence of existing made ground and the anticipated degree of disturbance during demolition, it is likely that a suspended floor slab would be most appropriate. It is also likely that a raft foundation could be designed to an appropriate specification, and we note that these have been a preferred option by Lidl on similar sites. In accordance with EC7, these values must be checked against the actual proposed factored foundation design loads. At this stage, the foundation loadings are not known. The results indicate that the Made Ground and natural strata beneath the site falls within Design Sulphate Class DS-1 and ACEC (Aggressive Chemical Environment for Concrete) Class AC-1s. There are a number of trees present, along the south-western boundary close to the proposed south-west corner of the Lidl store. There are also some trees present off-site further to the south-east. The species of the trees should be ascertained by way of a tree survey. Based on the data from this survey, an assessment of the eventual foundation depths should be undertaken, to ensure that the specified depths do not need to be increased further given the presence of cohesive natural strata. In any case, it is recommended that heave protection be included within the foundation design along the south-western boundary foundations as a minimum.
Recommendations	We recommend the following steps be taken to enable the proposed development to progress: • Undertake a tree survey and review eventual foundation depths. • Develop a remedial/materials management strategy to mitigate the localised, potential risks to human health from asbestos and to drinking water pipes from TPH and PAH. • Vigilance and further assessment when removing buried fuel storage and distribution infrastructure. • 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 and Assessment for their proposed new Lidl store at 261 Wilmslow Road, Manchester. As part of our instruction, reliance on this report is also offered to Buzzard Holdings Limited who are the current site owners.

The site currently consists of a large, derelict, centrally positioned building which was formerly a bus garage with external hardstanding areas. Lidl propose to develop the site with the construction of a new store building in the southern area of the site, with car parking in the western and northern areas of the site and access from Wilmslow Road to the west.

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

- HTC Architects Proposed Setting Out Site Plan Ref. 2594/F413 dated April 2024.
- Technics Topographical and Utility Survey Plan Ref. SP24659-0524-01 dated 22nd May 2024.
- Brownfield Solutions Phase 1 Geo-Environmental Assessment Report Ref. KB/C5749/13067 dated May 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 assessment was carried out to an agreed brief as set out in Obsidian's proposal (ref. SD/24-1965-P/L01, dated 10th May 2024). The instructed scope of works includes the following:

- Site Walkover.
- Procure and review a Consultants Coal Ming Report.
- Procure and review a Preliminary UXO Risk Assessment.
- Two days of window sampling using a tracked window sampling rig.
- Installation of three gas/groundwater monitoring wells within selected window sample holes and four return gas monitoring visits.
- Four TRL probes to calculate CBR values.
- Chemical laboratory analysis of selected soil 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 area is approximately 0.65 hectares and is centred around National Grid Reference: 385417, 394988. The site is broadly rectangular in shape and is shown on the appended Site Location Plan 24-1965-P/01/A.

2.2 Site Description

The site is accessed via two gated entrances located on the western site boundary with Wilmslow Road. The site is dominated centrally by a former bus garage building which is broadly split into three distinct areas. The western part comprises former offices and welfare areas which show significant evidence of vandalism. The central area is accessed via roller shutters on the north and south elevation and may have been used for light vehicle maintenance. An above ground fuel/waste oil storage tank is located in this area. The eastern area is a vaulted former bus parking area which is open on the eastern elevation.

External areas are predominantly surfaced with concrete with localised patches of bituminous surfacing. The western area of the site was also, formerly the location of a fuel station and the former tank island is still present with six inspection/access covers present. Technics surveyors have opened up the covers and confirmed that tanks appear to be foam filled. Surveys have also indicated the buried fuel lines are also still present in this area. Interceptors appear to be present within the eastern and western extremities of the site.

The site is bounded by residential land to the east and south, commercial/derelict land to the north and Wilmslow Road to the west.

Photographs from the walkover and site works are included in Appendix A.

3 Review of Previous Desk Study Report and Data Obtained by Obsidian

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

- Brownfield Solutions Phase 1 Geo-Environmental Assessment Report Ref. KB/C5749/13067 dated May 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 comprised some residential dwellings with associated gardens up to 1951 when the buildings in the west of the site were shown to be a garage. Further structures were then also present within the east of the site.



By 1971 a structure with the appearance of a fuel filling station was shown in the west of the site and the current large bus garage structure was present centrally on site. Wider land use in the surrounding area comprises commercial, residential and recreational land.

3.2 Geology, Hydrogeology and Hydrology

3.2.1 Geology

The mapped superficial and bedrock geological succession is summarised in Table 3.1 below:

Table 3.1: Geological Succession

Geology	Stratigraphic Name	Description
Superficial	Glacial Till	Typically comprising clays, sands and gravels.
Bedrock.	Chester Formation	Typically comprising Sandstone.

Variable Made Ground is also anticipated.

3.2.2 Hydrogeology

The superficial deposits are classified as a Secondary Aquifer (Undifferentiated). The classification is assigned where it is not possible to attribute either category A or B to the aquifer.

The bedrock is classified as a Principal Aquifer. This is Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale.

The nearest groundwater abstraction is approximately 1574m to the northwest of the site. The site is located within a Source Protection Zone 3.

3.2.3 Hydrology

The nearest surface water body is Platt Brook, approximately 195m to the south of the site. There are no surface water abstractions within 2000m of the site.

3.3 Radon

Information from the environmental database report indicates the property is in an area where <1% of properties are above the Action Level for radon, and therefore radon protective measures are not required.

3.4 Environmental Considerations from Desk Study

The salient issues relating to the site and surrounding area are summarised below:

Potential, predominantly low to medium level risks have been identified at the site relating to identified human health receptors posed by the historic and current use of the site. This includes localised metals, PAH, TPH, VOC⁻s, PCB⁻s, Ground Gas and Asbestos. A low risk is posed to buried concrete infrastructure from water soluble sulphate and low to medium risk to drinking water pipes from hydrocarbons.

The risk to groundwater is low due to there being anticipated cohesive superficial deposits.

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.



3.5 Geotechnical Considerations from Desk Study

Given the site proposals, and in view of the published geology and the expected ground conditions, it is likely that conventional strip or deeper trench fill foundations will be appropriate for the proposed buildings. The depth of Made Ground and the strength of underlying natural soils should be assessed to determine this. If a significant thickness of Made Ground or strata with poor bearing capacities are present, a deeper foundation solution, such as piles may be a more suitable option.

There is the potential for elevated water-soluble sulphate concentrations to be present in any Made Ground and strata underlying the site. The concrete classification required for any foundation solution should therefore be assessed accordingly.

3.6 Preliminary Source-Pathway-Receptor Relationships

Obsidian have reviewed the conceptual site model (CSM) presented within the Brownfield Solutions report and the preliminary Source-Pathway-Receptor relationships identified for the site bearing in mind the anticipated redevelopment proposals are summarised as follows:

Table 3.2: Preliminary Source-Pathway-Receptor Relationships

Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
Made Ground On-site	Metals, PAH, TPH, VOCs	Inhalation, Ingestion, Dermal contact	Future site workers, Customers, Construction workers	Low to Medium
		Migration of Mobile Contaminants	Superficial secondary undifferentiated aquifer and bedrock principal aquifer	Low
	Asbestos containing materials	Inhalation	Future site workers, Customers, Construction workers	Low to Medium
	PAH, TPH	Direct Contact	Water Supply Pipes	Low
Made Ground and Activities Off-site	Metals, PAH, TPH, PCBs	Migration of Mobile Contaminants	Future site workers, Customers, Construction workers	Low
Made Ground and Natural Strata On-site	Water-soluble Sulphate	Aggressive attack	Buried concrete	Low
	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Customers, Construction workers	Low
Made Ground and Natural Strata Off-site	Methane, Carbon Dioxide, Carbon Monoxide, Hydrogen Sulphide	Migration of Ground Gas/Vapours	Future site workers, Customers, Construction workers	Low

3.7 Consultants Coal Mining Report

Brownfield Solutions believed there to be a potential risk on site from underground coal mining. As a result, they recommended that a coal mining risk assessment be undertaken.

A Consultant's Coal Mining Report was obtained from the Coal Authority by Obsidian, referenced: 51003429793001, and reviewed by Obsidian in order to assess the risks which may be posed to the proposed Lidl development by the presence of shallow, worked coal seams. The report is included as Appendix B.

The coal report has highlighted there are no records of past, underground coal mining at the site and there are no probable shallow, unrecorded workings.



There are no outcrops, faults, fissures or breaklines recorded on site, and there are no opencast mines or Coal Authority managed tips within 500m of the site.

There are no recorded licenses for future underground mining at the site. There are also no recorded mine gas issues at the site.

Based on the obtained information, we do not consider there to be a need or requirement to further assess the risk from worked coal seams at the site.

3.8 Unexploded Ordnance (UXO)

Brownfield Solutions believed there to be a potential risk on site from UXO. As a result, they recommended that a preliminary UXO risk assessment be undertaken.

A preliminary UXO risk assessment report (Ref: PA15739a-00) was procured as part of this assessment. The report is included as Appendix C.

During WWII, the site was situated within the County Borough of Manchester. According to official Home Office bombing statistics, this borough was subject to an overall low density of bombing, with an average of 27.1 items of ordnance recorded per 1,000 acres. Manchester bomb plot mapping records no bombing within the site boundary. The closest recorded incident was an incendiary strike plotted at the residential property to the south of the site.

WWII-era aerial imagery of the site, held in-house on this occasion, shows no obvious signs of damage within or bordering the site area, such as partially destroyed structures, white tile roofing or bomb craters. OS mapping corroborates with this, showing no significant structural change between pre- and post-war OS map editions. Given the apparent lack of bomb damage on site, as well as the presence of a number of structures within the site, it is anticipated that the site would have been subject to regular access throughout the war. Evidence of UXO is less likely to go unnoticed and unrecorded within areas of frequent access.

Given the findings of the preliminary report, the risk from UXO is not considered to be higher than the background risk of finding UXO in this part of the country. Whilst it would be possible to conduct a Detailed UXO Risk Assessment for the site, it is not anticipated that any further findings would significantly alter the risk of encountering unexploded ordnance within the site. It is therefore recommended that no further action is taken.

4 Investigation Methodology

4.1 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.

4.2 Clearance of Underground Services

In advance of the site works, twelve proposed exploratory hole locations were determined by Obsidian based on the findings of the desk study, site walkover and proposed layout, taking account of potential and identified building and below ground constraints. A service clearance survey was then undertaken by Technics with locations positioned in areas known to be free of buried services. In addition, all exploratory hole locations were scanned on site by Obsidian using a cable avoidance tool (CAT) and signal generator (Genny).



4.3 Exploratory Holes

Twelve window sample borehole locations (WS01-WS12) were advanced across the site to depths of up to 5.00m below ground level (bgl) using a small, tracked, light percussion window sampling rig on the 22nd and 23rd May 2024.

Four TRL DCP⁻s (DCP01-DCP04) were undertaken within the accessible, proposed car parking areas in order to calculate CBR values.

Gas and groundwater monitoring wells were installed within WS02, WS08, and WS11 to depths of up to 5.00m bgl. The wells were constructed using 50mm HDPE plain pipe in a bentonite seal from existing ground level to depths of between 0.50m bgl and 1.00m bgl and 50mm HDPE slotted pipe in a gravel surround to the base of the exploratory holes at 3.00m bgl to 5.00m bgl.

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 (24-1965-P/02/A).

4.4 Logging and Sampling

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

Standard Penetration Tests (SPT⁻s) were taken at regular intervals within the window sample boreholes to provide K_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.

4.5 Chemical Laboratory Analysis

Selected soil samples were subjected to appropriate chemical testing at the MCERTS and UKAS accredited laboratory 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	12
Total Cyanide	12
Phenol	12
PAH	12
Asbestos Screen	12
Asbestos Quantification	3
TPH CWG Inc BTEX	8
VOC ⁻ s	4
Soil Organic Matter	6
WAC Suite	3

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



4.6 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 Table 4.2 below:

Table 4.2: Scheduled Geotechnical Laboratory Analysis

Analysis Type	Number of Samples
Plasticity Index Tests	6
Natural Moisture Content	6
pH	23
Water Soluble Sulphate	23

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

5 Results of Investigation

5.1 Recorded Strata

The ground conditions encountered in the exploratory holes across the site comprised variable thicknesses of reinforced concrete surfacing, present to 0.15m bgl to 0.23m bgl with localised bituminous surfacing in WS02 and concrete paving blocks in WS04. Beneath the hardstanding, variable, granular Made Ground was present to 0.25m bgl to 1.15m bgl. A concrete obstruction, believed to be an old concrete foundation was encountered at 0.90m bgl in WS01.

The natural strata comprised predominantly firm to very stiff, gravelly CLAY.

Localised hydrocarbon odours were noted within WS01, WS02, WS08 and WS11.

5.1.1 Made Ground

Reinforced concrete surfacing was encountered within all but two of the exploratory holes and was recorded to depths of 0.15m bgl to 0.23m bgl. Within WS02, two layers of bituminous surfacing were recorded to depths of 0.04m bgl and then 0.09m bgl. Within WS04, concrete paving blocks were present to 0.07m bgl.

Predominantly granular Made Ground was then encountered to depths of 0.25m bgl to 1.15m bgl comprising grey, brown and locally black sandy gravel with variable cobble content. The gravel comprised admixed materials such as limestone, brick, concrete and sandstone. Cobbles were of brick and concrete. Ash was present locally within WS12.

Hydrocarbon odours were noted within the Made Ground in WS01, WS08 and WS11 with staining also visible on the underside of the concrete surfacing in WS11.

A concrete obstruction, considered to be an old foundation was encountered at 0.90m bgl within WS01.

5.1.2 Natural Strata

Within WS02, WS06 and WS09 an initial firm, brown and orange brown, locally gravelly CLAY was encountered to 0.70m bgl to 1.20m bgl. Recorded locally as soft in WS06 and WS09.

The remainder of the natural strata recorded on site comprised stiff to very stiff reddish brown and locally grey, gravelly CLAY with gravel comprising fine sandstone and coal.



Hydrocarbon odours were noted within the natural CLAY within WS02 and WS11 to maximum depths of 0.80m bgl and 1.30m bgl, respectively.

5.2 Standard Penetration Tests (SPT's)

SPT's were undertaken within the window sample and cable percussive boreholes at regular intervals. The recorded, uncorrected SPT KN Values for the window samples are summarised in Table 5.1 below.

Table 5.1: Uncorrected SPT KN Values

Depth (m) Below Ground Level	Exploratory Hole											
	WS01	WS02	WS03	WS04	WS05	WS06	WS07	WS08	WS09	WS10	WS11	WS12
1.00	-	14	9	14	24	11	15	15	14	36	9	18
2.00	-	30	>50	26	-	26	24	39	19	41	33	33
3.00	-	23	-	30	-	35	35	>50	38	38	>50	>50
4.00	-	26	-	>50	-	>50	>50	-	>50	>50	-	-
5.00	-	29	-	-	-	-	-	-	-	-	-	-

-	No Data
	Made Ground
	Natural Strata

5.3 Groundwater

Localised, perched groundwater was encountered within WS08 at 1.00m during drilling. All other exploratory holes were dry. It is considered that the water is a result of locally channelled surface drainage that may be leaking or in a poor state of repair. The site works were also undertaken during a period of sustained, heavy rainfall.

During the subsequent monitoring period, monitoring wells WS08 and WS11 were found to be filled with water to depths of 0.18m bgl to 0.20m bgl on separate occasions after rainfall. It is considered that the wells, set within the natural Clay have formed an effective sump. Once bailed out, the water levels did not rise during the individual monitoring visits. Within WS02 recorded standing water was at 1.08m bgl to 1.33m bgl. This is also considered to be perched within the sump created by the well within the clay.

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 Siteable 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 value of the recorded SOM, screening values relating to 1.0% have been adopted for the screening assessment.

The results of the screening assessment are presented in Appendix G.



5.4.1 Metals

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

5.4.2 Total Cyanide and Phenol

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

5.4.3 PAH^s

Twelve samples were analysed for a suite of speciated PAH^s. None of the PAH compounds were recorded at concentrations above their adopted screening values.

5.4.4 Asbestos

Twelve samples were screened for the presence of fibrous asbestos materials. Chrysotile was positively detected within three samples of the Made Ground matrix, and they were 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	Asbestos Screening Result	Asbestos Quantification Result
WS08/0.50m	Loose Chrysotile Fibres	<0.001%
WS11/0.20m	Loose Chrysotile Fibrous Debris	0.012%
WS12/0.20m	Loose Chrysotile Fibres	<0.001%

All other samples analysed showed no positive detection for asbestos.

5.4.5 TPHCWG, BTEX & MTBE

Twelve 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 a suite of VOC^s. None of the compounds were recorded above their lower laboratory detection limit.

5.5 Geotechnical Laboratory Analysis Results

A total of twenty-three samples were tested for pH and water-soluble sulphate. A further six cohesive samples were tested for natural moisture content and plasticity index.

5.5.1 pH and Water-Soluble Sulphate

Of the twenty-three samples tested for pH and water-soluble sulphates, twelve were from the Made Ground and eleven were from the natural strata. The results are summarised in Table 5.3.

Table 5.3: pH and Water-Soluble Sulphate Results Summary

Analysis	Made Ground		Natural Strata	
	Min Value	Max Value	Min Value	Max Value
pH	7.9	12.1	7.0	10.5
Water-Soluble Sulphate	3.49 mg/l	339 mg/l	7.37 mg/l	108 mg/l

The results of the pH, water-soluble sulphate and indicate that the risk posed to future buried concrete structures from the Made Ground and natural strata is negligible.

5.5.2 Plasticity Index Testing

The results of the plasticity index testing are summarised in Table 5.4:



Table 5.4: Plasticity Index Test Results Summary

Location	Depth (m) bgl	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Percentage Passing 425um (%)	Modified Plasticity Index
WS04	1.50	20.6	42	18	24	92	22.08
WS05	1.00	22.4	48	19	29	90	26.10
WS08	1.50	18.8	42	18	24	91	21.84
WS10	1.00	21.6	43	19	24	89	21.36
WS11	1.50	20.4	43	19	24	91	21.84
WS12	1.50	18.7	40	18	22	89	19.58

The natural clays on site are of intermediate plasticity, with a volume-change potential of low to medium.

5.6 Ground Gas Monitoring Results

Gas monitoring results have been compared to guidance presented in CIRIA Report C665, Assessing Risks Posed by Hazardous Ground Gases to Buildings, 2007.

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 four window sample monitoring wells on four occasions.

The ground gas monitoring results are presented in Appendix H and are summarised in Table 5.5.

Table 5.5: Ground Gas/Groundwater Monitoring Results Summary

Well	Methane Concentrations (% v/v)	Carbon Dioxide concentrations (% v/v)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	Flow Rates (l/hr)
WS02	ND	ND √ 0.2	ND	ND	<0.1
WS08	ND	ND √ 1.5	ND	ND	<0.1
WS11	ND	ND √ 0.1	ND	ND	<0.1

During the gas monitoring programme, atmospheric pressures ranged between 1005mb and 1016mb across both rising and falling pressure trends.

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, VOC_s or PAH_s were recorded above their adopted screening values.



Fibres of Chrysotile Asbestos were detected within the Made Ground WS08, WS11 and WS12 at depths of 0.20m bgl to 0.50m bgl. Subsequent quantification confirmed that the concentrations of Asbestos within the matrix was at trace concentrations of <0.001% to 0.012%.

WS08, WS11 and WS12 are located within the eastern area of the site, with WS08 and WS11 beneath external hardstanding and WS12 beneath the existing building. At its recorded location depth and concentration, the detected Asbestos is likely to be beneath the proposed building footprint and would be unlikely to pose a significant risk to proposed end users if left in-situ and undisturbed. However, during construction, enabling works in these areas such as the break out of hardstanding, drainage and removal of foundations may require the movement or removal of the Made Ground. If this is the case, then this material should not be redistributed across other areas of the site. If this is the case, then the material should be removed from site as waste. The appropriate waste classification is further discussed within Section 6.5.

Given its identified presence beneath internal and external hardstanding areas the potential source of the material may be from the demolition of previous structures on site or indeed, may be a result of material importation to construct development levels historically. Although none of the other exploratory holes identified the presence of Asbestos, Made Ground materials similar to that which contains the positive Asbestos have been identified. Therefore, the potential for Asbestos to be within areas between the investigation locations cannot be ruled out, although the risk is considered low at this stage.

A buried tank farm has been identified within the western area of the site and the surveyors have indicated that these are foam filled following observations made when the inspection covers were lifted as part of their survey. It is also understood from the survey that the buried fuel distribution pipes from the former filling station are also still present. As part of the proposed development works it is likely that these tanks and fuel delivery pipes will be excavated and removed. There is the strong likelihood that hydrocarbons will be present within the soils adjacent and below these pieces of buried infrastructure, potentially at higher concentrations than those recorded thus far. It is therefore recommended that these areas be investigated further when being excavated and removed.

The site drainage and interceptor system may also be concentrating hydrocarbons in acute locations, and this should also be inspected when excavated and removed. Investigation of the buried infrastructure from surface, using drilling rigs carries a high risk of damage and potential release of contamination so wider, careful excavation during their removal is the safest approach to further assess these potential buried contamination sources. One advantage of the recorded cohesive geology is that it will have attenuated the contamination potentially within a localised area around the interceptors, fuel pipes and tanks.

There is a fuel/waste oil tank located above ground and centrally within the existing building. WS12 was positioned close to the tank and did not identify elevated hydrocarbon concentrations, however, there is the potential that soils directly beneath the tank may be locally impacted, which can only be assessed once the tank has been removed and the floor slab broken out.

Although not at concentrations which pose a risk to human health, the recorded TPH and PAH concentrations may pose a risk to buried PE drinking water pipes pending confirmation with the local water authority. As a precautionary measure, it is recommended that barrier pipe be used on site for buried drinking water pipes.

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



The above assessment is the result of investigations undertaken within currently accessible areas of the site. A significant proportion of the development footprint is covered by the existing building and the presence of buried services has prevented the positioning of exploratory holes in some areas. Given the restrictions imposed by the current site layout, it is possible that other areas of contamination may be present adjacent to or beneath the identified services and building constraints. Further investigation may be required to further assess and quantify these areas once vacant possession has been obtained.

6.2 Ground Gas Risk Assessment

The preliminary risk assessment from the Desk Study identified the ground gas risk to be low for the site.

No methane has been detected and a maximum carbon dioxide concentration of 1.5% v/v has been recorded during the monitoring visits. No flow has been detected above the instrument lower detection limit of 0.1 l/hr.

The maximum carbon dioxide concentration and a gas flow rate of 0.1l/hr have been selected to calculate an initial Gas Screening Values (GSV⁻s) 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 C665, a GSV of 0.0015l/hr has been calculated for methane and a GSV of 0.039l/hr has been calculated for carbon dioxide. The GSV⁻s classify the site as KC⁻ Characteristic Situation 1⁻ (Very Low Risk) whereby no ground gas protective measures are required for the proposed building on site.

No Radon protection measures are 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 has confirmed that the majority of the potential pollutant linkages identified during the desk study phase have been broken. The remaining potential pollutant linkages presented in table 6.1 require mitigation.

Table 6.1: Updated Source-Pathway-Receptor Relationships

Source Material/Activity	Potential Contaminant	Pathways	Receptor	Risk
Made Ground On-site	Asbestos containing materials	Inhalation	Future site workers, Customers, Construction workers	Low
	PAH, TPH	Direct Contact	Water Supply Pipes	Low

The above source-pathway-receptor relationships should be reviewed and updated once access has been granted to the currently inaccessible areas of the site.

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. It should be noted that the materials on site should only be classified as a waste material if they are discarded, there is an intent to discard them or if there is a requirement to discard them.

A level 1 waste characterisation of all the recorded chemical laboratory analysis results across the site would indicate that a Non-Hazardous Waste classification is likely to be appropriate for the Made Ground on site.

The three recorded instances of Asbestos have been quantified as being <0.001% to 0.012% which are below the commonly accepted Hazardous Waste threshold of 0.1%. The Made Ground waste classification therefore remains as Non-Hazardous.

WAC analysis which has been undertaken on Made Ground sample WS01/1.00m, indicates that the Made Ground at this location must remain Non-Hazardous due to the recorded concentration of Antimony. WAC analysis undertaken on samples WS07/0.40m and WS10/0.50m indicates that these Made Ground materials can be classified as Inert Waste, which is a sub-category of Non-Hazardous. The Asbestos impacted Made Ground in and around WS08, WS11 and WS12 remains a Non-Hazardous Waste classification.

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

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.

A potential low risk has been identified for drinking water pipes and it is 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.

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 in Proximity of the Proposed Building Footprint

Depth (m) Below Ground Level	Exploratory Hole						
	WS04	WS05	WS08	WS09	WS10	WS11	WS12
1.00	14	24	15	14	36	9	18
2.00	26	-	39	19	41	33	33
3.00	30	-	>50	38	38	>50	>50
4.00	>50	-	-	>50	>50	-	-
5.00	-	-	-	-	-	-	-

-	No Data
	Made Ground
	Natural Strata

7.2 Foundations and Floor Slab

The footprint of the proposed store is covered, in the most part by the existing, large building on site or external hardstanding areas. It is likely, therefore, that the demolition of the building and the grubbing out of the existing floor slab, foundations and buried drainage/services will generate significant disturbance to depths of 0.50m bgl to 2.00m bgl. It is therefore recommended that new trench fill foundations for the store be advanced to a depth of at least 2.00m bgl where there is significant disturbance or at a depth of 1.00m bgl where there is minimal disturbance to depths shallower than 1.00m bgl, founding within the firm becoming stiff to very stiff cohesive strata.

As a guide for a 0.60m wide foundation taken down to a depth of 1.00m, a net allowable bearing pressure of at least 115kN/m² would be available, with 140kN/m² available at 2.00m bgl where required. For a 2.00m by 2.00m pad foundation at 1.00m bgl, 130kN/m² would be available. Sufficient reinforcement should be included in order to minimise any differential settlement.

Given the presence of existing Made Ground and the anticipated degree of disturbance during demolition, it is likely that a suspended floor slab would be most appropriate. It is also likely that a raft foundation could be designed to an appropriate specification, and we note that these have been a preferred option by Lidl on similar sites.

In accordance with EC7, these values must be checked against the actual proposed factored foundation design loads. At this stage, the foundation loadings are not known.



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 KTenching Practice⁻.

Given the limited, perched groundwater observations on site, it is considered unlikely that considerable groundwater ingress will occur within the anticipated range of excavation. However, it is considered that sump and pump techniques would likely be sufficient for dewatering purposes if required.

7.4 Concrete Specification

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

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

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 Building Near Trees

There are a number of trees present, along the south-western boundary close to the proposed south-west corner of the Lidl store. There are also some trees present off-site further to the south-east. The species of the trees should be ascertained by way of a tree survey. Based on the data from this survey, an assessment of the eventual foundation depths should be undertaken, to ensure that the specified depths do not need to be increased further given the presence of cohesive natural strata. In any case, it is recommended that heave protection be included within the foundation design along the south-western boundary foundations as a minimum.

7.6 Pavement Design

TRL DCP⁻swere undertaken at 4 locations within the proposed parking areas. The TRL DCP results are included within Appendix G. DCP01 was undertaken within Made Ground which was then later found to be above a buried concrete foundation. The presence of the underlying foundation may have skewed the results. These have not been used to calculate indicative CBR values.

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	Calculated CBR %	Strata
DCP02	230mm ∨ 365mm	13	Made Ground
DCP02	365mm ∨ 680mm	5	Made Ground/Gravelly Clay
DCP02	680mm ∨ 865mm	18	Gravelly Clay
DCP03	180mm ∨ 355mm	15	Made Ground
DCP03	355mm ∨ 645mm	7	Made Ground/Gravelly Clay
DCP03	645mm ∨ 865mm	14	Gravelly Clay



TRL DCP Location	Depth Range	Calculated CBR %	Strata
DCP04	150mm ∨ 570mm	4	Made Ground/Gravelly Clay
DCP04	570mm ∨ 710mm	13	Gravelly Clay
DCP04	710mm ∨ 870mm	25	Gravelly Clay

The recorded CBR values for the Made Ground and partial Made Ground layers have yielded indicative CBR values of 4% to 15%. It should be noted that any cobbles present within the Made Ground may have skewed the CBR values resulting in a locally higher value. The indicative CBR values calculated for layers solely within natural strata range from 13% to 25%.

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.

The TRL DCP results are included within Appendix I.

8 Recommendations

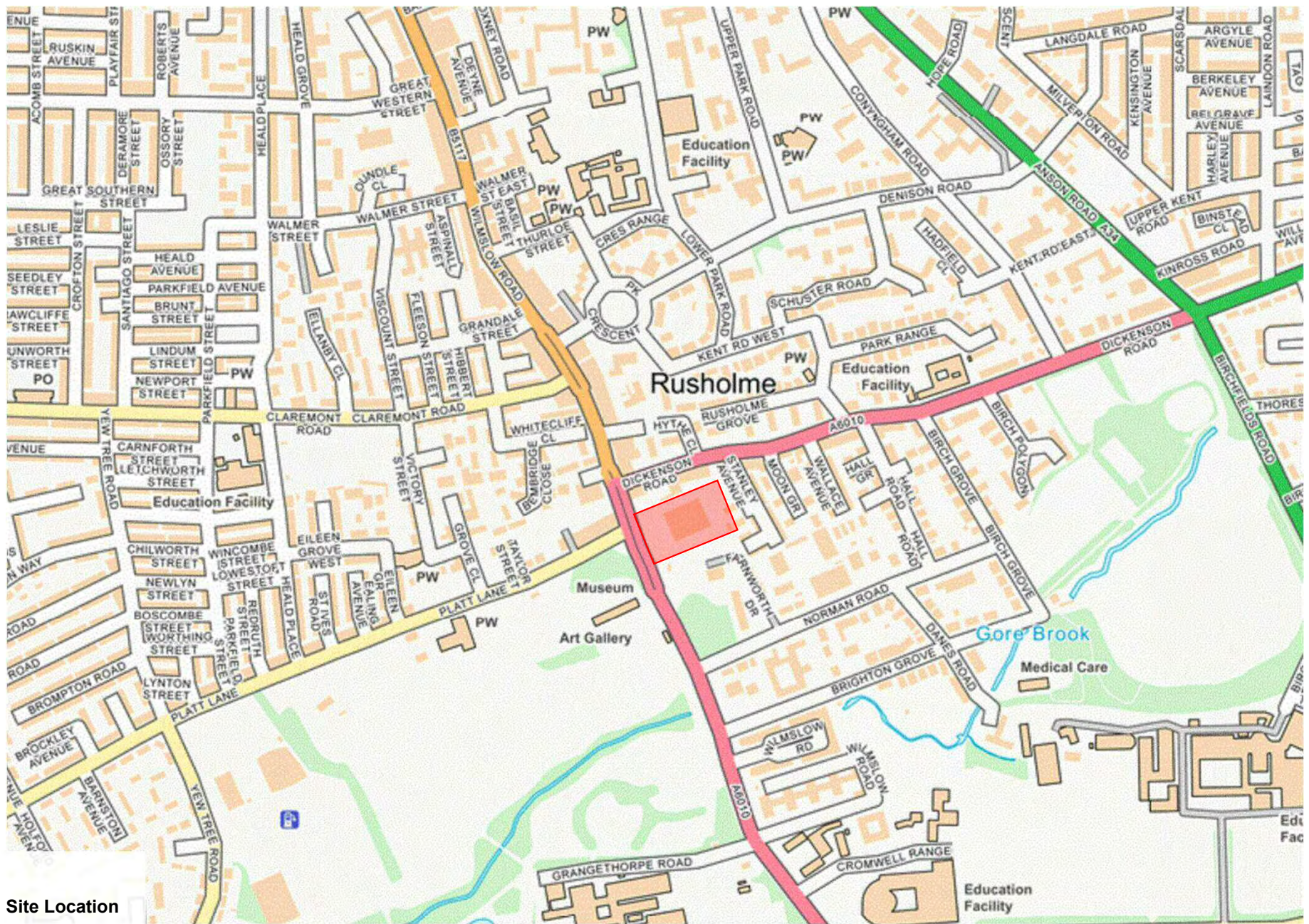
We recommend the following steps be taken to enable the proposed development to progress:

- Undertake a tree survey and review eventual foundation depths.
- Develop a remedial/materials management strategy to mitigate the localised, potential risks to human health from asbestos and to drinking water pipes from TPH and PAH.
- Vigilance and further assessment when removing buried fuel storage and distribution infrastructure.
- Submission of this report and assessment to the Local Authority Environmental Health/Contaminated Land Officer and water supply authority.



Drawings





Key

 Site Location

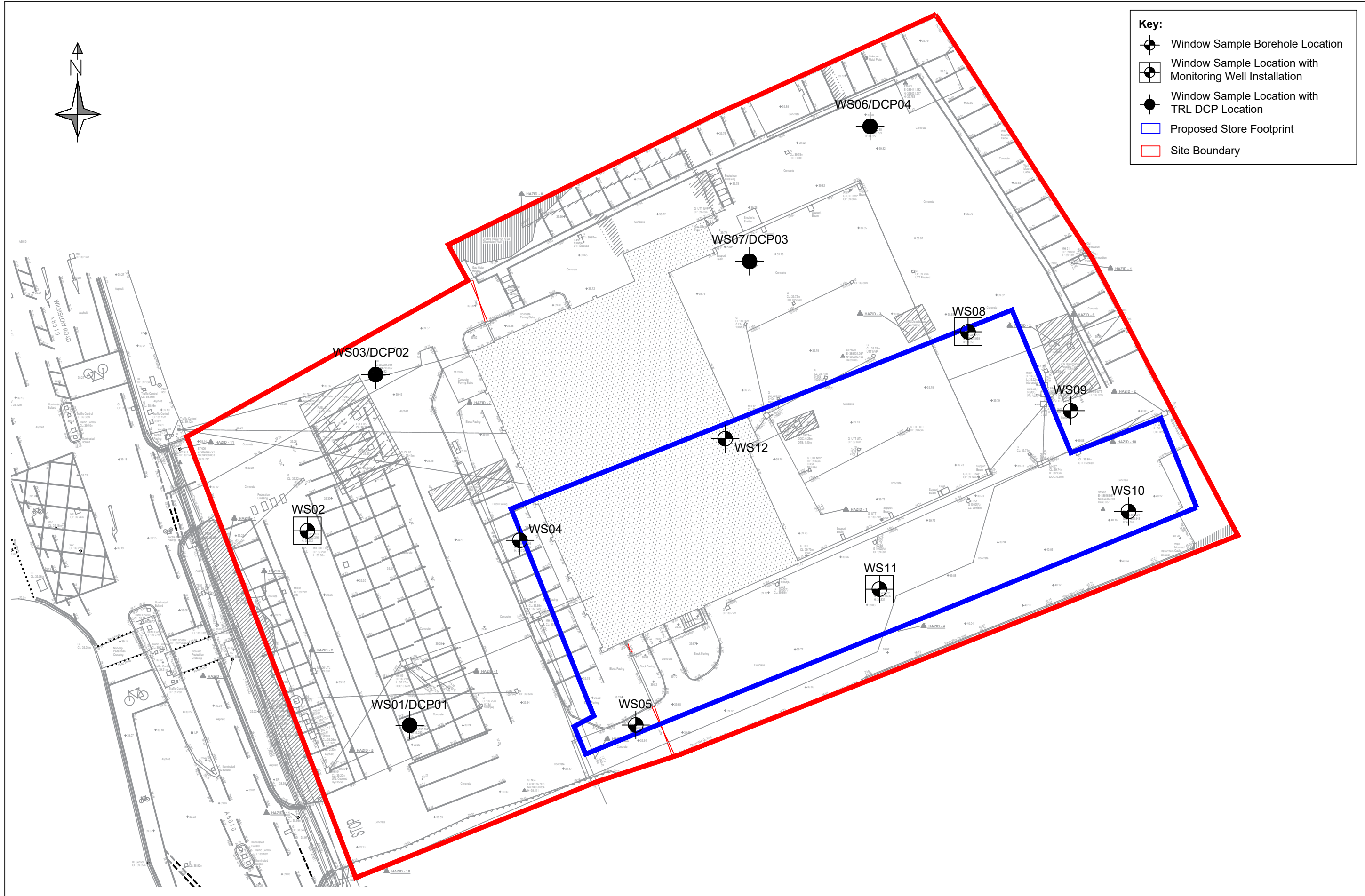


Lidl Great Britain Ltd
& Buzzard Holdings Ltd

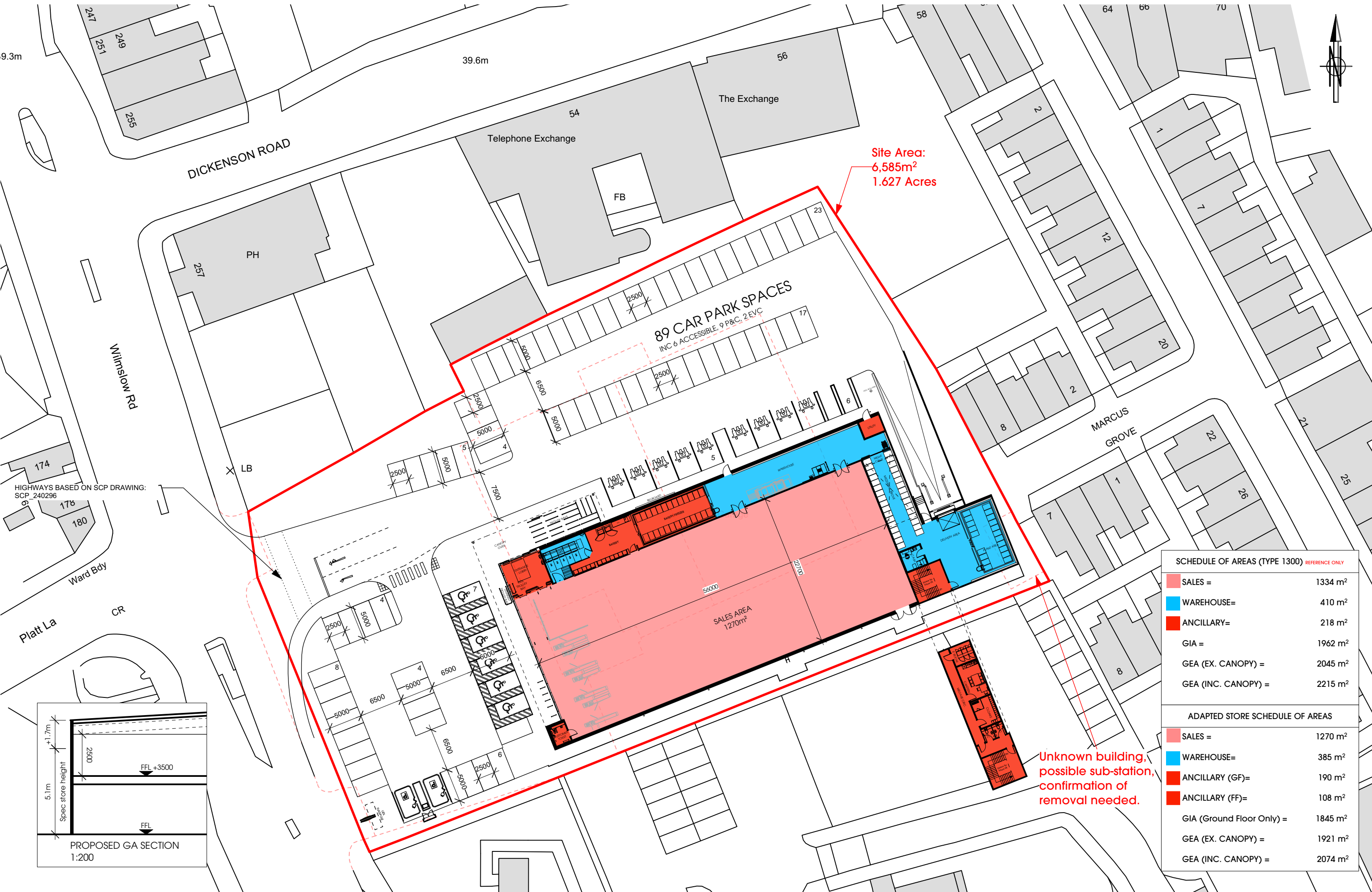
Project:
261 Wilmslow Road, Manchester

Title:
Site Location Plan

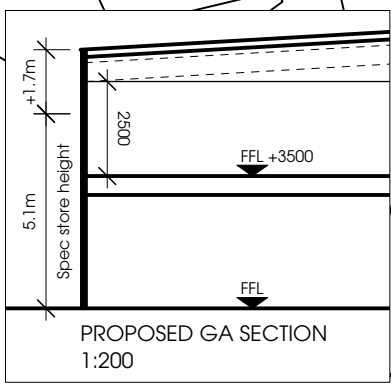
Project No:	24-1965-P
Drawing No:	01
Revision:	A
Scale:	NTS



 OBSIDIAN GEO-CONSULTING	Lidl Great Britain Ltd & Buzzard Holdings Ltd	PROJECT:	PROJECT NO:	24-1965-P	DRAWING NO:	02
		Proposed Lidl Store, 261 Wilmslow Road, Manchester	REVISION:	A	SCALE:	NTS
		TITLE:	DRAWN BY:	BM	DATE:	26/06/2024
		Exploratory Hole Location Plan	APPROVED BY:	SMD	DATE:	26/06/2024



HIGHWAYS BASED ON SCP DRAWING:
SCP_240296



SCHEDULE OF AREAS (TYPE 1300) REFERENCE ONLY		
SALES =		1334 m²
WAREHOUSE=		410 m²
ANCILLARY=		218 m²
GIA =		1962 m²
GEA (EX. CANOPY) =		2045 m²
GEA (INC. CANOPY) =		2215 m²
ADAPTED STORE SCHEDULE OF AREAS		
SALES =		1270 m²
WAREHOUSE=		385 m²
ANCILLARY (GF)=		190 m²
ANCILLARY (FF)=		108 m²
GIA (Ground Floor Only) =		1845 m²
GEA (EX. CANOPY) =		1921 m²
GEA (INC. CANOPY) =		2074 m²

Unknown building,
possible sub-station,
confirmation of
removal needed.

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DO NOT SCALE!
ALL DIMENSIONS SHOULD BE CHECKED ON SITE BEFORE WORK COMMENCES

client

 Lidl GB Ltd

project

Wilmslow Rd, Rusholme

date

April 2024

status

Feasibility

scale

1:500 @ A3

drawing title

Proposed Setting Out Site
Plan- Option 10 2x5m parking

drawn

KA

checked

MH

job no.

2594

dwg no.

F413

rev.

date

April 2024

status

Feasibility

scale

1:500 @ A3

drawn

KA

checked

MH

job no.

2594

dwg no.

F413

rev.

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Rev	Date	Description	Drawn

Appendix A

Photographs





Photograph 1 – A view of the western elevation of the former bus garage building.



Photograph 2 – A view of the buied tank farm in the western area of the site.



Photograph 3 – A view along the north side of the site.



Photograph 4 – A view of the north elevation of the former bus garage building.



Photograph 5 – A view of the covered bus parking area in the east of the former bus garage building.



Photograph 6 – A view of the eastern external hardstanding area.



Photograph 7 – A view of the drums and IBC stored on the eastern site boundary.



Photograph 8 – A view of the waste materials within the outbuilding in the eastern corner of the site.



Photograph 9 – A view of the interceptors in the eastern external hardstanding area.



Photograph 10 – A view along the southern area of the site.



Photograph 11 – A view of the southern elevation of the building with access to the vehicle maintenance area.



Photograph 12 – A view internally of the vehicle maintenance area.



Photograph 13 – A view of the above ground fuel/waste oil tank within the internal vehicle maintenance area.



Photograph 14 – A view inside the vandalised and derelict welfare and administration area in the western part of the building.



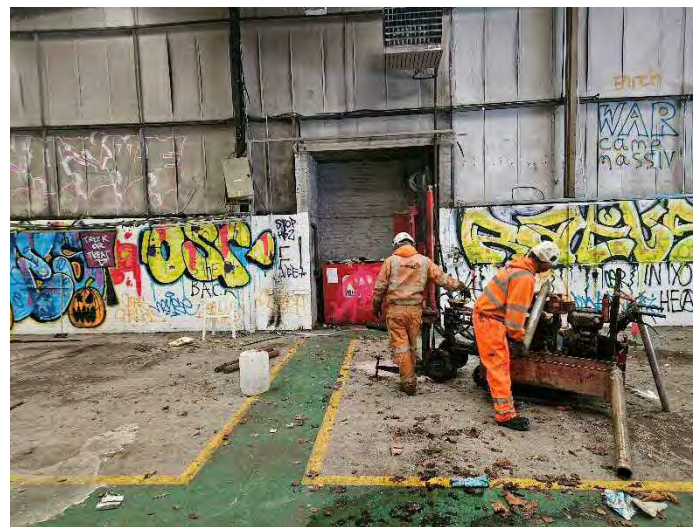
Photograph 15 – A view of the rig on position WS04.



Photograph 16 – A view of the rig on position WS06.



Photograph 17 – A view of the rig on position WS07.



Photograph 18 – A view of the rig on position WS12.



Photograph 19 – A typical example of the cored concrete hardstanding.



Photograph 20 – A typical example of the recovered sample liners.

Appendix B

Consultants Coal Mining Report





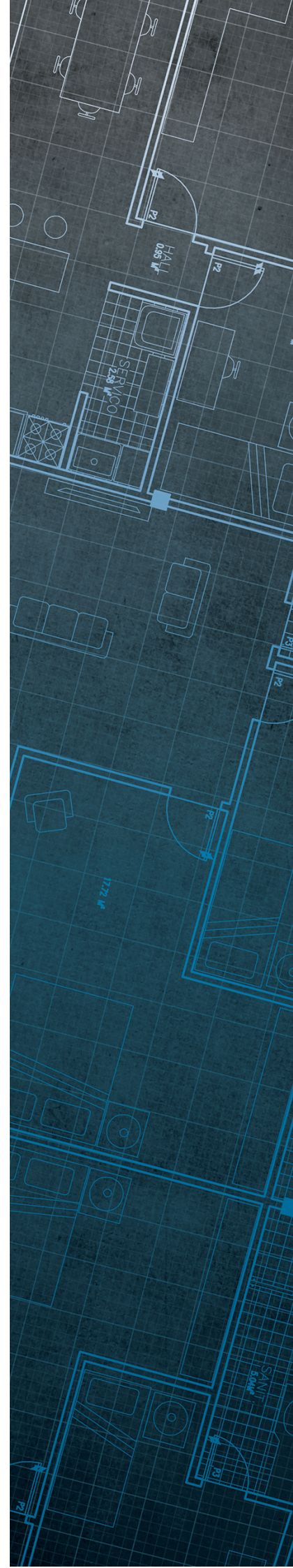
The Coal
Authority

Consultants Coal Mining Report

261 Wilmslow Road
Manchester
M14 5HA

Date of enquiry: 7 June 2024
Date enquiry received: 7 June 2024
Issue date: 7 June 2024

Our reference: 51003429793001
Your reference: 24-1965-P



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

Steven Dempsey

Enquiry address

261 Wilmslow Road
Manchester
M14 5HA

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

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Mansfield
Nottinghamshire
NG18 4RG

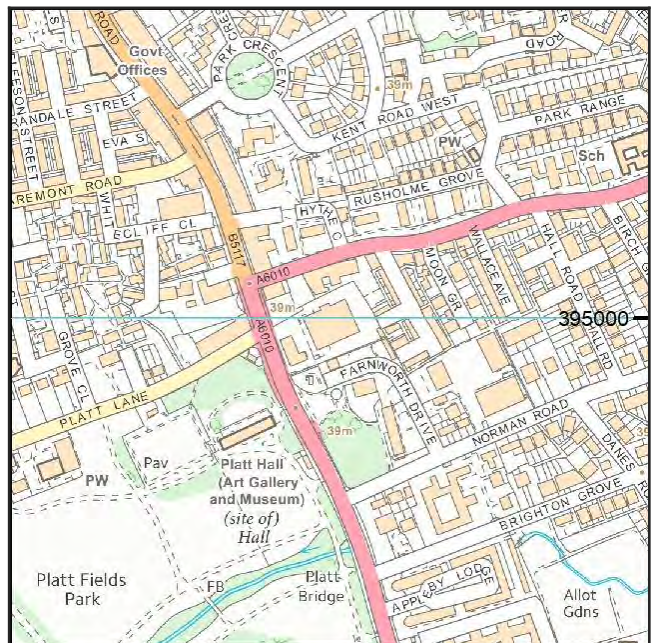
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

None available.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

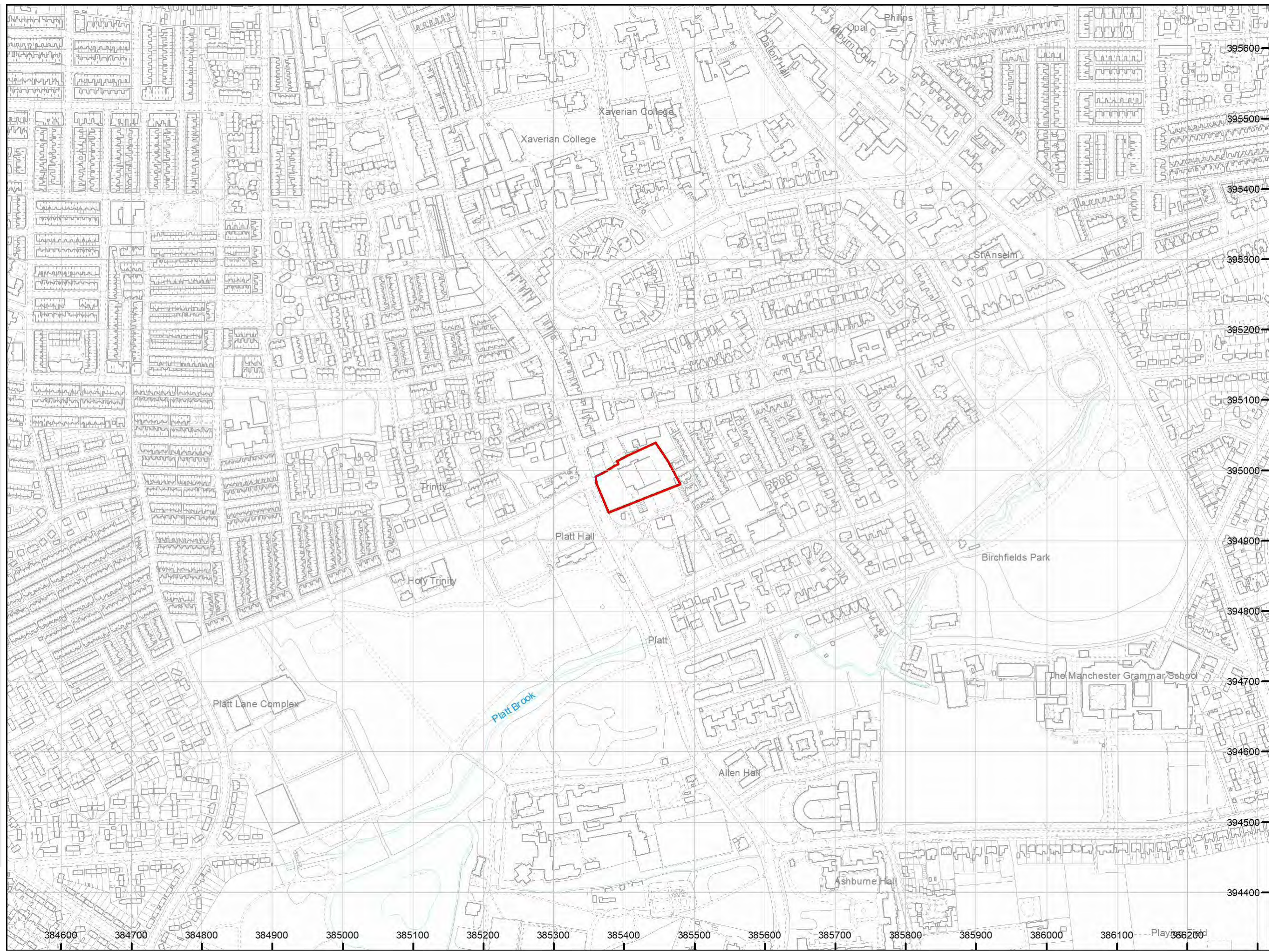
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown 

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+44 (0)1623 637 000 (International)
www.groundstability.com



Appendix C

Preliminary UXO Risk Assessment



Preliminary Unexploded Ordnance (UXO) Risk Assessment

Project Name	261 Wilmslow Road, Manchester
Client	Obsidian Geo-Consulting Ltd
Site Address	261 Wilmslow Road, Manchester, M14 5HA
Report Reference	PA15739a-00
Date	22/05/2024
Author	CC
Quality Assurance	AB

1st Line Defence

3 Maple Park, Essex Road, Hoddesdon. EN11 0EX

Tel +44 (0) 1992 245 020 Email info@1stlinedefence.co.uk

Web www.1stlinedefence.co.uk Company Reg No. 07717863



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Assessment Objective

This preliminary unexploded ordnance (UXO) risk assessment is a qualitative screening exercise to assess the likely potential of encountering UXO at the 261 Wilmslow Road, Manchester site. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.

Site Boundary



Risk Assessment Considerations	
Site location and description/current use	The site is located in Rusholme, southern Manchester. Recent aerial imagery suggests that the site currently comprises Rusholme Depot in the centre of the site, with open, hardstanding ground surrounding it. The site is bordered to the north by a number of commercial premises, to the east by residential properties located along Stanley Avenue and Marcus Grove, to the south by areas of open hardstanding and grass situated off Farnworth Drive, and to the west by Wilmslow Road. The site is approximately centred on the OS grid reference: SJ 8540894999.
Are there any indicators of current/historical military activity on/close to the site?	In-house records do not indicate that the site footprint had any former military use. No features such as WWII defensive positions, encampments or firing ranges are recorded to have been located at or in the immediate vicinity of the site. In addition, no information of ordnance being stored, produced, or disposed of within the proposed site boundary could be found. The closest recorded Heavy Anti-Aircraft (HAA) battery was situated approximately 375m south-east of the site, in the vicinity of Fallowfield. The range of a fired projectile can be up to 15km. The risk from Anti-Aircraft projectiles is homogenous to the risk from German aerial delivered ordnance (see below).
What was the pre- and post-WWII history of the site?	Pre-war OS mapping, dated 1934, shows the site to comprise two residential properties and associated garden areas in the south and west of the site, located along Wilmslow Road. A large structure, believed to have been commercial or industrial, can be seen in the north-eastern corner of the site. The site is bordered to the north by <i>Leslie's Pavilion</i> and further structures of a presumed commercial or industrial nature, to the east by a <i>Telephone Exchange</i> and residential properties situated along Stanley Avenue and Marcus Grove, to the south by open ground and a residential property, and to the west by Wilmslow Road. Post-war OS mapping, dated 1955, shows very little significant structural change within the site boundary. The large structure in the north-east of the site appears to have been slightly developed, however all other structures within the site appear unchanged. The site continues to be bordered to the north by structures of an unknown operation, to the east by residential properties, to the south by a residential property and open ground, and to the west by Wilmslow Road.
Was the area subject to bombing during WWII?	During WWII, the site was situated within the County Borough of Manchester. According to official Home Office bombing statistics, this borough was subject to an overall low density of bombing, with an average of 27.1 items of ordnance recorded per 1,000 acres. This consisted of 712 high explosive bombs, 18 parachute mines, seven oil bombs and one V-1 pilotless aircraft, totalling 738 incidents across 27,255 acres. Manchester bomb plot mapping records no bombing within the site boundary. The closest recorded incident was an incendiary strike at the residential property to the south of the site.
Is there any evidence of bomb damage on/close to the site?	WWII-era aerial imagery of the site, held in-house on this occasion, shows no obvious signs of damage within or bordering the site area, such as partially destroyed structures, white tiled roofing or bomb craters. OS mapping corroborates with this, showing no significant structural change between pre- and post-war OS map editions.

To what degree would the site have been subject to access?	During the war, the site was occupied by two residential properties and other structures. As such, it is anticipated that the site would have been subject to regular access throughout the war. Evidence of UXO is less likely to go unnoticed and unrecorded within areas of frequent access.
To what degree has the site been developed post-WWII?	Since WWII, all structures within the site have been removed, and the entirety of the site has been paved over with hardstanding. First Manchester Rusholme Depot has been developed within the centre of the site.
What is the nature and extent of the intrusive works proposed?	The nature and extent of works proposed was not available at the time of writing.

Summary and Conclusions

During WWII, the site was situated within the County Borough of Manchester. According to official Home Office bombing statistics, this borough was subject to an overall low density of bombing, with an average of 27.1 items of ordnance recorded per 1,000 acres. Manchester bomb plot mapping records no bombing within the site boundary. The closest recorded incident was an incendiary strike plotted at the residential property to the south of the site.

WWII-era aerial imagery of the site, held in-house on this occasion, shows no obvious signs of damage within or bordering the site area, such as partially destroyed structures, white tile roofing or bomb craters. OS mapping corroborates with this, showing no significant structural change between pre- and post-war OS map editions. Given the apparent lack of bomb damage on site, as well as the presence of a number of structures within the site, it is anticipated that the site would have been subject to regular access throughout the war. Evidence of UXO is less likely to go unnoticed and unrecorded within areas of frequent access.

Recommendations

Given the findings of this preliminary report, the risk from UXO is not considered to be higher than the 'background risk' of finding UXO in this part of the country. Whilst it would be possible to conduct a Detailed UXO Risk Assessment for this site, it is not anticipated that any further findings would significantly alter the risk of encountering unexploded ordnance within the site. It is therefore recommended that **no further action** is taken.

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

It should be noted that although the risk from unexploded ordnance on this site has been assessed as low/minimal, this does not mean there is 'no' risk of encountering UXO. This preliminary report has been undertaken with due diligence, and all reasonable care has been taken to access and analyse relevant historical information. By necessity, when dealing with historical evidence, and when making assessments of UXO risk, various assumptions have to be made which we have discussed and justified within this report. Our reports take a common-sense and practical approach to the assessment of UXO risk, and we strive to be reasonable and pragmatic in our conclusions. As referenced, it would be possible to undertake further research into this site, but based on the evidence to hand, this is not deemed strictly necessary, and no reasonably justifiable requirement for proactive on-site mitigation has been identified.

It should however be stressed that if any suspect items are encountered during the proposed works, 1st Line Defence should be contacted for advice/assistance, and to re-assess the risk as necessary. Furthermore, we would recommend that ground personnel are always made aware of the potential for encountering UXO, what to look out for and what to do in the unlikely event that a suspect item is encountered, and that a UXO Risk Management Plan is put together for the proposed works. We would be happy to provide a template and guidance for this – contact us on 01992 245020. Should the scope of works change or additional works be proposed, 1st Line Defence should be contacted to re-evaluate the risk.

This report has been prepared by 1st Line Defence Limited with all reasonable care and skill. The report contains historical data and information from third party sources. 1st Line Defence Limited has sought to verify the accuracy and comprehensiveness of this information where possible but cannot be held accountable for any inherent errors. Furthermore, whilst every reasonable effort has been made to locate and access all relevant historical information, 1st Line Defence cannot be held responsible for any changes to risk level or mitigation recommendations resulting from documentation or other information which may come to light at a later date.

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Appendix D

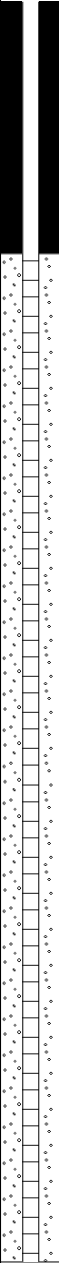
Exploratory Hole Records



		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 22/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS01		Hole Type WS		Level		Logged By SD		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 with 12mm steel reinforcement at 0.16m bgl. Membrane at base.			
		0.50	ES					MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone. Feint hydrocarbon odour. Concrete obstruction at base.			
		0.90	SPT	50 (25 for 70mm/50 for 60mm)	0.90			End of Borehole at 0.900m		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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 0.90m bgl due to SPT refusal on concrete obstruction. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

Percussion Drilling Log

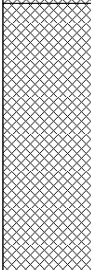
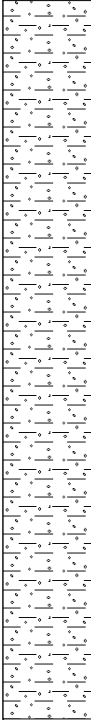
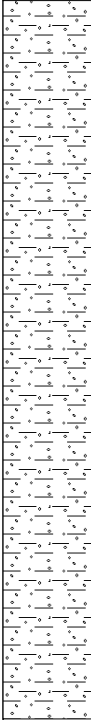
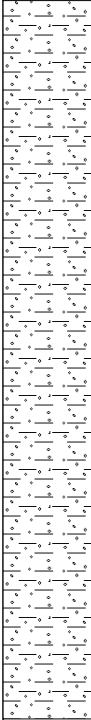
Project Name: 261 Wilmslow Road, Manchester		Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd		Date: 22/05/2024	
Location:		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1965-P		Crew Name: Boreworx Ltd		Drilling Equipment: Tracked Window Sampling Rig	
Borehole Number WS02	Hole Type WS	Level	Logged By SD	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					
		0.04 0.09	ES	N=14 (1,2/2,3,4,5)	0.04 0.09			MADE GROUND: Bituminous surfacing.	1
		0.20			0.20			MADE GROUND: Bituminous surfacing.	
		0.40			0.40			MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone.	
		0.60	ES		0.60			Firm, light brown, orange brown and grey CLAY with faint Hydrocarbon odour to 0.80m bgl.	
		1.00			1.00			Stiff to very stiff, brown, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.	
		1.00	D SPT	N=30 (5,5/5,6,9,10)	1.20			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	2
		1.50	D		1.50			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	
		2.00	D SPT	N=23 (4,5/5,5,6,7)	2.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	3
		2.00			2.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	
		3.00	D SPT	N=26 (5,5/5,6,8,7)	3.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	4
		3.00			3.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	
		4.00	D SPT	N=29 (5,6/6,7,7,9)	4.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	5
		4.00			4.00			Very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine, angular sandstone.	
		5.00	SPT	N=29 (5,6/6,7,7,9)	5.00			End of Borehole at 5.000m	6

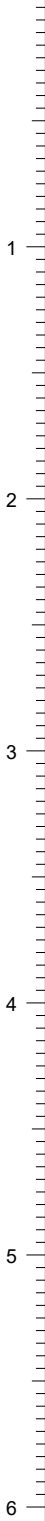
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks 1. Window sample position cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 5.00m bgl. 5. Monitoring well installed as detailed above.										
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		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 22/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS03		Hole Type WS		Level		Logged By SD		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							
					0.23			MADE GROUND: Concrete with 8mm steel reinforcement at 0.08m bgl and 0.15m bgl. Membrane at base.			
		0.50	ES		0.50			MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone.			
		1.00	D	N=9 (1,2/2,2,2,3)				Very stiff, reddish brown, slightly gravelly CLAY. Gravel is rare, fine, angular sandstone and coal.		1	
		1.00	SPT								
		1.50	D								
		1.90	D	N=50 (5,5/50 for 295mm)	2.00			End of Borehole at 2.000m		2	
		2.00	SPT								
										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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 22/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS04		Hole Type WS		Level		Logged By SD		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							
		0.07			0.07			MADE GROUND: Concrete blocks.		1	
		MADE GROUND: Grey and brown, very sandy gravel with high cobble content. Gravel is fine to coarse, angular limestone, brick and concrete. Cobbles are angular brick and concrete.									
		0.50	ES					Stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.		2	
		1.00	ES								
		1.00	SPT	N=14 (2,2/3,3,4,4)	1.15						
		1.20	D								
		1.50	D					Stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.		3	
		2.00	D								
		2.00	SPT	N=26 (3,5/5,7,7,7)							
		3.00	D								
3.00	SPT	N=30 (4,4/6,8,8,8)				Stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.		4			
3.90	D										
4.00	SPT	N=50 (9,10/50 for 265mm)	4.00		End of Borehole at 4.000m		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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 22/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS05		Hole Type WS		Level		Logged By SD		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							
					0.23			MADE GROUND: Concrete.			
		0.50	ES		0.70			MADE GROUND: Grey and brown, very sandy gravel comprising fine to coarse, angular limestone, brick and concrete.			
		0.70	ES					Stiff, brown, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.		1	
		1.00	D	N=24 (4,4/5,5,7,7)							
		1.00	SPT								
		1.50	D		2.00						
		1.90	D							2	
								End of Borehole at 2.000m		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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 2.00m bgl due to collapsing made ground. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 23/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS06		Hole Type WS		Level		Logged By SD		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							
					0.15			MADE GROUND: Concrete with 8mm steel reinforcement at 0.06m bgl.			
		0.30	ES		0.25			MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone.			
		0.50	D		0.50			Soft, reddish brown CLAY.			
					0.75			Firm to stiff, brown, orange brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
		1.00	D					Stiff to very stiff, reddish brown, slightly gravelly CLAY. Gravel is rare, fine, angular sandstone and coal.			
		1.00	SPT	N=11 (1,2/2,3,3,3)							
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
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Percussion Drilling Log

Project Name: 261 Wilmslow Road, Manchester		Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd		Date: 23/05/2024	
Location:		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1965-P		Crew Name: Boreworx Ltd		Drilling Equipment: Tracked Window Sampling Rig	
Borehole Number WS07	Hole Type WS	Level	Logged By SD	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 with 8mm steel reinforcement at 0.09m bgl.	
		0.40	ES					MADE GROUND: Dark brown, black and grey, sandy gravel with ash. Gravel is fine to coarse, angular sandstone, limestone, brick and concrete.	
		0.60	D		0.60				
		1.00	D					Firm, brown, orange brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.	
		1.00	SPT	N=15 (3,3/4,4,3,4)	1.00			Stiff to very stiff, reddish brown, slightly gravelly CLAY. Gravel is fine to medium, angular sandstone and rare coal.	1
		2.00	D						
		2.00	SPT	N=24 (3,4/5,6,6,7)					2
		3.00	D						
		3.00	SPT	N=35 (4,5/12,7,8,8)					3
		4.00	SPT	N=50 (7,11/50 for 230mm)	4.00			End of Borehole at 4.000m	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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.



Date: 23/05/2024

Contractor: Obsidian Geo-Consulting Ltd

Drilling Equipment: Tracked Window Sampling Rig

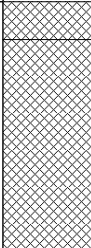
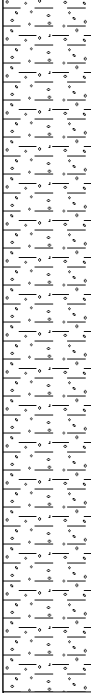
Page Number
Sheet 1 of 1

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

1. Window sample position cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. Groundwater encountered at 1.00m bgl. 4. Borehole terminated at 3.00m bgl due to SPT refusal. 5. Monitoring well installed as detailed above.

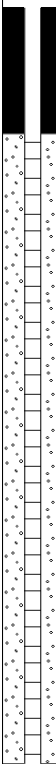


		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 23/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS09		Hole Type WS		Level		Logged By SD		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							
         		0.30	ES		0.19			MADE GROUND: Concrete with 8mm steel reinforcement at 0.16m bgl.		1	
		0.50	D		0.40			MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone.			
					0.70			Soft, brown, orange brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
		1.00	D		1.00			Firm, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
		1.00	SPT	N=14 (2,2/3,3,4,4)				Stiff to very stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
											
											
											
											
											
		2.00	D							2	
		2.00	SPT	N=19 (3,4/4,5,5,5)							
		3.00	D							3	
		3.00	SPT	N=38 (5,6/8,9,10,11)							
		3.90	D							4	
		4.00	SPT	N=50 (10,11/12,12,15,11)	4.00						
								End of Borehole at 4.000m		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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											
											

		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 23/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS10		Hole Type WS		Level		Logged By SD		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							
					0.15			MADE GROUND: Concrete with 8mm steel reinforcement at 0.08m bgl.		1	
								MADE GROUND: Grey and brown, very clayey, sandy gravel with low cobble content. Gravel is fine to coarse, angular limestone, brick and concrete. Cobbles are angular brick.			
		0.50	ES								
		1.00	D		1.00			Stiff to very stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
		1.00	SPT	N=36 (5,6/7,9,10,10)							
		1.50	D								
		2.00	D								
		2.00	SPT	N=41 (7,8/9,10,11,11)						2	
		3.00	D								
		3.00	SPT	N=38 (6,7/7,7,12,12)						3	
	3.90	D									
	4.00	SPT	N=50 (10,10/50 for 265mm)	4.00				End of Borehole at 4.000m		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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

Percussion Drilling Log

Project Name: 261 Wilmslow Road, Manchester		Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd		Date: 22/05/2024	
Location:		Contractor: Obsidian Geo-Consulting Ltd			
Project No. : 24-1965-P		Crew Name: Boreworx Ltd		Drilling Equipment: Tracked Window Sampling Rig	
Borehole Number WS11	Hole Type WS	Level	Logged By SD	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		0.17 0.28			MADE GROUND: Concrete with 8mm steel reinforcement at 0.12m bgl and Hydrocarbon odour and staining on underside of concrete.	
		0.50	ES					MADE GROUND: Grey, very sandy gravel comprising fine to coarse, angular limestone. Hydrocarbon odour.	
		1.00 1.00	ES SPT	N=9 (1,1/2,1,2,4)	1.00			Firm, brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal. Feint Hydrocarbon odour.	
		1.50	D					Stiff to very stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal. Feint Hydrocarbon odour to 1.30m bgl	1
		2.00 2.00	D SPT	N=33 (5,6/7,8,8,10)					2
		2.90 3.00	D SPT	N=50 (8,10/50 for 275mm)	3.00				3
								End of Borehole at 3.000m	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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 3.00m bgl due to SPT refusal. 5. Monitoring well installed as detailed above.

		Percussion Drilling Log									
Project Name: 261 Wilmslow Road, Manchester				Client: Lidl Great Britain Ltd and Buzzard Holdings Ltd				Date: 23/05/2024			
Location:				Contractor: Obsidian Geo-Consulting Ltd							
Project No. : 24-1965-P				Crew Name: Boreworx Ltd				Drilling Equipment: Tracked Window Sampling Rig			
Borehole Number WS12		Hole Type WS		Level		Logged By SD		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		0.17			MADE GROUND: Concrete with 10mm steel reinforcement at 0.13m bgl. Membrane at base.		1	
		0.50	D		0.30			MADE GROUND: Brown and black, sandy gravel with ash. Gravel is fine to coarse, angular limestone and brick.			
		1.00	D					Stiff to very stiff, reddish brown and grey, slightly gravelly CLAY. Gravel is fine, angular sandstone and rare coal.			
		1.00	SPT	N=18 (3,3/4,4,5,5)							
		1.50	D								
		2.00	D								
		2.00	SPT	N=33 (5,6/7,8,9,9)							
		2.90	D								
		3.00	SPT	N=50 (7,7/50 for 295mm)	3.00						
								End of Borehole at 3.000m			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 cleared by Technics Ltd and scanned with CAT and Genny prior to drilling. 2. Surfacing penetrated with concrete coring attachment. 3. No groundwater encountered. 4. Borehole terminated at 3.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings and reinstated at surface upon completion.											

Appendix E

Chemical Laboratory Analysis Results



Obsidian Geo-Consulting Ltd
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West Midlands
B35 6LJ
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e: 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 : 24-021684-2

Replaces Analytical Report Number: 24-021684, issue no. 1

Additional analysis undertaken.

Asbestos Quantification added to sample no. 210423, 210426 & 210429 as per client's request

Project / Site name:	261 Wilmslow Road, Manchester	Samples received on:	24/05/2024
Your job number:	24-1965-P	Samples instructed on/ Analysis started on:	24/05/2024
Your order number:	1528	Analysis completed by:	01/06/2024
Report Issue Number:	2	Report issued on:	14/06/2024
Samples Analysed:	26 soil samples		

Signed:

Izabela Wójcik

Izabela Wójcik
Senior Reporting Specialist
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: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number	210415	210416	210417	210418	210419
Sample Reference	WS01	WS02	WS02	WS03	WS04
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	0.60	0.50	0.50
Date Sampled	22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	41.8	76.3	< 0.1	< 0.1	74.5
Moisture Content	%	0.01	NONE	7.2	3.9	19	19	7
Total mass of sample received	kg	0.1	NONE	0.8	0.9	0.8	0.9	0.9

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	-	IZJ	IZJ
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 (L099)	pH Units	N/A	MCERTS	9.5	9.3	-	8.4	12.1
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	680	43	-	75	7.4
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	339	21.4	-	37.7	3.68
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	1.8	1.4	-	< 1.0	1.2
Organic Matter (automated)	%	0.1	MCERTS	-	0.4	-	-	-

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	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.25	0.14	-	< 0.05	0.24
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.29	0.18	-	< 0.05	0.32
Pyrene	mg/kg	0.05	MCERTS	0.32	0.12	-	< 0.05	0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.14	0.09	-	< 0.05	0.16
Chrysene	mg/kg	0.05	MCERTS	0.29	0.09	-	< 0.05	0.17
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.27	< 0.05	-	< 0.05	0.21
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.19	< 0.05	-	< 0.05	0.1
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.52	< 0.05	-	< 0.05	0.16

Total PAH

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210415	210416	210417	210418	210419
Sample Reference				WS01	WS02	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.60	0.50	0.50
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	2.25	< 0.80	-	< 0.80	1.65

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.5	2.2	-	9	6.9
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	< 0.2	-	0.5	1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.4	2.3	-	< 0.2	0.3
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	9.9	11	-	36	40
Copper (aqua regia extractable)	mg/kg	1	MCERTS	23	10	-	23	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	28	20	-	14	45
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	6.9	7.5	-	31	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	100	53	-	54	73

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	< 0.020	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	< 0.020	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	< 0.050	-	< 0.050	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	14	-	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	100	-	< 2.0	-	-
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	310	-	< 8.0	-	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	160	-	< 8.0	-	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	590	-	< 10	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	< 0.050	-	< 0.050	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	4.8	-	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	55	-	< 2.0	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	220	-	< 10	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	130	-	< 10	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	410	-	< 10	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Chloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Chloroform	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210415	210416	210417	210418	210419
Sample Reference				WS01	WS02	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.60	0.50	0.50
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Carbontetrachloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Bromoform	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	-

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

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number	210420	210421	210422	210423	210424
Sample Reference	WS05	WS06	WS07	WS08	WS09
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.30	0.40	0.50	0.30
Date Sampled	22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	93.4	< 0.1	< 0.1	< 0.1	65.2
Moisture Content	%	0.01	NONE	5.2	17	16	11	11
Total mass of sample received	kg	0.1	NONE	0.8	0.5	0.4	0.8	0.9

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	IZJ	IZJ	IZJ	IZJ	PDO
Actinolite detected	Type	N/A	ISO 17025	-	-	-	Not-detected	-
Amosite detected	Type	N/A	ISO 17025	-	-	-	Not-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	-	-	-	< 0.001	-
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	-	-	Loose Fibres	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	11	7.9	8.1	8.5	8.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	3.3	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	430	120	620	150	97
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	216	60.1	310	75.4	48.5
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	4.9	8.4	1.6	12	8.4
Organic Matter (automated)	%	0.1	MCERTS	0.4	-	2.1	-	0.6

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.08	0.16	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.12	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.07	0.93	0.07
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.8	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.1	0.12	0.57	4.4	0.33
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.14	1.5	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.12	0.21	1.1	9.4	0.62
Pyrene	mg/kg	0.05	MCERTS	0.11	0.19	1	8.2	0.6
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.09	0.6	3.5	0.27
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.12	0.61	3.7	0.3
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.69	3.7	0.31
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	0.24	1.5	0.13
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.53	3.3	0.27
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.05	0.29	1.7	0.15
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.11	0.42	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.07	0.32	1.8	0.18

Total PAH

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210420	210421	210422	210423	210424
Sample Reference				WS05	WS06	WS07	WS08	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	0.40	0.50	0.30
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	0.86	6.37	45.1	3.23

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.9	6.1	26	13	6.5
Boron (water soluble)	mg/kg	0.2	MCERTS	1.5	1.4	0.8	0.4	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent) Low Level	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11	18	20	22	8.4
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.4	19	58	32	22
Lead (aqua regia extractable)	mg/kg	1	MCERTS	11	31	190	35	45
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7	12	23	38	9.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	4.3	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	31	40	130	66	47

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	-	< 0.020	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	< 0.020	-	-	< 0.020	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	< 0.050 ##	-	-	< 0.050	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0	-	-	5.7	-
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	-	-	14	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0	-	-	70	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	< 10	-	-	89	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	-	< 0.010	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	< 0.010	-	-	< 0.010	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	< 0.050	-	-	< 0.050	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0	-	-	< 1.0	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0	-	-	6.8	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	-	-	41	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10	-	-	180	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	< 10	-	-	220	-

VOCS

Chloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	< 5.0	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210420	210421	210422	210423	210424
Sample Reference				WS05	WS06	WS07	WS08	WS09
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.30	0.40	0.50	0.30
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Carbontetrachloride	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromoform	µg/kg	5	NONE	-	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromobenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-

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

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number	210425	210426	210427	210428	210429
Sample Reference	WS10	WS11	WS11	WS11	WS12
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.20	0.50	1.00	0.20
Date Sampled	22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	78.6	71.9	< 0.1	< 0.1	35.5
Moisture Content	%	0.01	NONE	6.9	6.6	17	16	13
Total mass of sample received	kg	0.1	NONE	0.8	0.9	0.8	0.7	0.8

Asbestos

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

Asbestos % by hand picking/weighing	%	0.001	ISO 17025	-	0.012	-	-	< 0.001
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Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	Loose Fibrous Debris	-	-	Loose Fibres
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.7	8.4	-	-	9.3
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	7	59	-	-	240
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	3.49	29.3	-	-	120
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-	-	-	-	-
Sulphide	mg/kg	1	MCERTS	< 1.0	14	-	-	5.3
Organic Matter (automated)	%	0.1	MCERTS	-	0.6	-	-	2.4

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	< 0.05	-	-	0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	0.23
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	0.14
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.31	-	-	1.6
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	0.37
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.15	-	-	3
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.17	-	-	3.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.08	-	-	1.6
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.09	-	-	1.7
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	-	1.9
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	-	0.76
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	0.86
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	0.22
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	1.1

Total PAH

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210425	210426	210427	210428	210429
Sample Reference				WS10	WS11	WS11	WS11	WS12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.50	1.00	0.20
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	0.81	-	-	18.6

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2.7	3.4	-	-	14
Boron (water soluble)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	-	-	< 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	2.8	5.4	-	-	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.5	8.7	-	-	45
Lead (aqua regia extractable)	mg/kg	1	MCERTS	11	15	-	-	110
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	3.1	4.2	-	-	27
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	22	22	-	-	130

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.02	NONE	-	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	-	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	-	< 0.050 ##	< 0.050	< 0.050 ##	< 0.050 ##
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	2.2	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	51	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	130	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	70	< 8.0	< 8.0	25
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	250	< 10	< 10	25

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-	< 0.050	< 0.050	< 0.050	< 0.050
TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	31	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	67	< 10	< 10	12
TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	25	< 10	< 10	59
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR	mg/kg	10	NONE	-	120	< 10	< 10	71

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chloroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	< 5.0	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210425	210426	210427	210428	210429
Sample Reference				WS10	WS11	WS11	WS11	WS12
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.20	0.50	1.00	0.20
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Carbontetrachloride	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromoform	µg/kg	5	NONE	-	-	< 5.0	-	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

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

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210430	210431	210432	210433	210434
Sample Reference				WS02	WS03	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	1.00	1.20	1.50	1.00
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	16	15	17	13
Total mass of sample received	kg	0.1	NONE	0.5	0.4	0.5	0.4	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 (L099)	pH Units	N/A	MCERTS	8.5	8.2	8.1	9.1	8.1
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	24	32	33	220	43
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	12.1	16	16.5	108	21.4
Sulphide	mg/kg	1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

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	-	-	-	-	-
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	-	-	-	-	-

Total PAH

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210430	210431	210432	210433	210434
Sample Reference				WS02	WS03	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	1.00	1.20	1.50	1.00
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-

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	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	-	-	-	-	-
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 >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-	-	-	-	-
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	-	-	-	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210430	210431	210432	210433	210434
Sample Reference				WS02	WS03	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	1.00	1.20	1.50	1.00
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

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

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number	210435	210436	210437	210438	210439
Sample Reference	WS07	WS08	WS09	WS10	WS11
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.00	1.00	2.00	1.50	2.00
Date Sampled	22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	12	14	13	14
Total mass of sample received	kg	0.1	NONE	0.4	0.5	0.4	0.5	0.4

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 (L099)	pH Units	N/A	MCERTS	7.8	8.4	8.7	8.3	8.5
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	82	27	20	15	34
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	41	13.7	10.2	7.37	17
Sulphide	mg/kg	1	MCERTS	-	-	-	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-	-	-	-

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	-	-	-	-	-
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	-	-	-	-	-

Total PAH

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number				210435	210436	210437	210438	210439
Sample Reference				WS07	WS08	WS09	WS10	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.00	2.00	1.50	2.00
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-	-	-

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	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	-	-	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	-	-	-	-	-
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 >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-	-	-	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-	-	-	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-	-	-	-	-
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	-	-	-	-	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	-

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210435	210436	210437	210438	210439
Sample Reference				WS07	WS08	WS09	WS10	WS11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.00	1.00	2.00	1.50	2.00
Date Sampled				22/05/2024	22/05/2024	22/05/2024	22/05/2024	22/05/2024
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Carbontetrachloride	µg/kg	5	NONE	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Styrene	µg/kg	5	ISO 17025	-	-	-	-	-
Bromoform	µg/kg	5	NONE	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	NONE	-	-	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Butylbenzene	µg/kg	5	NONE	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	-	-

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

Analytical Report Number: 24-021684
Project / Site name: 261 Wilmslow Road, Manchester
Your Order No: 1528

Lab Sample Number	210440			
Sample Reference	WS12			
Sample Number	None Supplied			
Depth (m)	1.00			
Date Sampled	22/05/2024			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	14
Total mass of sample received	kg	0.1	NONE	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 (L099)	pH Units	N/A	MCERTS	8.3
Total Cyanide	mg/kg	1	MCERTS	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	58
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	29.2
Sulphide	mg/kg	1	MCERTS	-
Organic Matter (automated)	%	0.1	MCERTS	-

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	-
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	-

Total PAH

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number	210440			
Sample Reference	WS12			
Sample Number	None Supplied			
Depth (m)	1.00			
Date Sampled	22/05/2024			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-

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	0.02	NONE	-
TPHCWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.02	NONE	-
TPHCWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.05	NONE	-
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 >C16 - C21 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.01	NONE	-
TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.01	NONE	-
TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.05	NONE	-
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	-

VOCs

Chloromethane	µg/kg	5	ISO 17025	-
Chloroethane	µg/kg	5	NONE	-
Bromomethane	µg/kg	5	ISO 17025	-
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	NONE	-
1,1-Dichloroethene	µg/kg	5	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-
2,2-Dichloropropane	µg/kg	5	NONE	-
Chloroform	µg/kg	5	ISO 17025	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-
Benzene	µg/kg	5	MCERTS	-

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

Lab Sample Number				210440
Sample Reference				WS12
Sample Number				None Supplied
Depth (m)				1.00
Date Sampled				22/05/2024
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Carbontetrachloride	µg/kg	5	NONE	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloroethene	µg/kg	5	ISO 17025	-
Dibromomethane	µg/kg	5	ISO 17025	-
Bromodichloromethane	µg/kg	5	ISO 17025	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Toluene	µg/kg	5	MCERTS	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-
Dibromochloromethane	µg/kg	5	ISO 17025	-
Tetrachloroethene	µg/kg	5	NONE	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-
Chlorobenzene	µg/kg	5	ISO 17025	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
Styrene	µg/kg	5	ISO 17025	-
Bromoform	µg/kg	5	NONE	-
o-Xylene	µg/kg	5	MCERTS	-
Isopropylbenzene	µg/kg	5	ISO 17025	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-
Bromobenzene	µg/kg	5	NONE	-
n-Propylbenzene	µg/kg	5	ISO 17025	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-
Butylbenzene	µg/kg	5	NONE	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-
Hexachlorobutadiene	µg/kg	5	NONE	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-

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

Analytical Report Number: 24-021684
 Project / Site name: 261 Wilmslow Road, Manchester
 Your Order No: 1528

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
210423	WS08	0.50	123	Loose Fibres	Chrysotile	< 0.001	< 0.001
210426	WS11	0.20	123	Loose Fibrous Debris	Chrysotile	0.012	0.012
210429	WS12	0.20	111	Loose Fibres	Chrysotile	< 0.001	< 0.001

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

Analytical Report Number : 24-021684

Project / Site name: 261 Wilmslow Road, Manchester

* 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 *
210415	WS01	None Supplied	0.5	Brown loam and sand with stones
210416	WS02	None Supplied	0.2	Brown loam and sand with stones
210417	WS02	None Supplied	0.6	Brown clay and sand
210418	WS03	None Supplied	0.5	Brown clay
210419	WS04	None Supplied	0.5	Brown loam and gravel with stones
210420	WS05	None Supplied	0.5	Brown sand with stones
210421	WS06	None Supplied	0.3	Brown clay
210422	WS07	None Supplied	0.4	Brown loam and clay with gravel
210423	WS08	None Supplied	0.5	Brown loam and clay with gravel
210424	WS09	None Supplied	0.3	Brown loam and sand with stones
210425	WS10	None Supplied	0.5	Brown loam and sand with stones
210426	WS11	None Supplied	0.2	Brown loam and sand with stones
210427	WS11	None Supplied	0.5	Brown clay
210428	WS11	None Supplied	1	Brown clay
210429	WS12	None Supplied	0.2	Brown loam and sand with stones
210430	WS02	None Supplied	1.5	Brown clay
210431	WS03	None Supplied	1	Brown clay
210432	WS04	None Supplied	1.2	Brown clay
210433	WS05	None Supplied	1.5	Brown clay
210434	WS06	None Supplied	1	Brown clay
210435	WS07	None Supplied	1	Brown clay with gravel
210436	WS08	None Supplied	1	Brown clay with gravel
210437	WS09	None Supplied	2	Brown clay with gravel
210438	WS10	None Supplied	1.5	Brown clay with gravel
210439	WS11	None Supplied	2	Brown clay with gravel
210440	WS12	None Supplied	1	Brown clay with gravel

Analytical Report Number : 24-021684
Project / Site name: 261 Wilmslow Road, Manchester

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
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	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
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
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	D/W	MCERTS
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	W	NONE
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	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	W	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099	D	MCERTS

Analytical Report Number : 24-021684
Project / Site name: 261 Wilmslow Road, Manchester

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

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

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

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

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

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 - understore 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

- Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

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Analytical Report Number : 24-021685

Project / Site name:	261 Wilmslow Road, Manchester	Samples received on:	24/05/2024
Your job number:	24-1965-P	Samples instructed on/ Analysis started on:	24/05/2024
Your order number:	01521	Analysis completed by:	31/05/2024
Report Issue Number:	1	Report issued on:	03/06/2024
Samples Analysed:	3 soil samples - 3 2stage samples		



Signed: _____

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

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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



i2 Analytical

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Waste Acceptance Criteria Analytical Results							
Report No:	24-021685						
				Client: OBSIDIAN			
Location	261 Wilmslow Road, Manchester						
Lab Reference (Sample Number)	210441			Landfill Waste Acceptance Criteria			
Sampling Date	22/05/2024			Inert Waste Landfill	Stable Non- reactive HAZARDOUS waste in non- hazardous Landfill	Hazardous Waste Landfill	
Sample ID	WS04						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	0.7			3%	5%	6%	
Loss on Ignition (%) **	2.5			--	--	10%	
BTEX (µg/kg)**	< 5.0			6000	--	--	
Sum of PCBs (mg/kg)**	< 0.007			1	--	--	
Mineral Oil (mg/kg) BH_LD_CU_AL	< 10			500	--	--	
Total PAH (WAC-17) (mg/kg)	5.77			100	--	--	
pH (units)**	9.4			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	40			--	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 *	0.013	0.010		0.11	0.5	2	25
Barium *	0.020	0.0087		0.11	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0027	0.0026		0.026	0.5	10	70
Copper *	0.019	0.012		0.13	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.0055	< 0.0014		< 0.014	0.5	10	30
Nickel *	< 0.00090	< 0.00090		< 0.0090	0.4	10	40
Lead *	< 0.0017	< 0.0017		< 0.017	0.5	10	50
Antimony *	0.11	0.031		0.44	0.06	0.7	5
Selenium *	< 0.0050	< 0.0050		< 0.050	0.1	0.5	7
Zinc *	0.0048	0.0024		0.028	4	50	200
Chloride *	6.5	< 4.0		23	800	15000	25000
Fluoride*	0.49	0.19		2.4	10	150	500
Sulphate *	39	9.5		150	1000	20000	50000
TDS*	150	76		890	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	6.73	7.7		75.3	500	800	1000
Leach Test Information							
Stone Content (%)	69.0						
Sample Mass (kg)	0.8						
Dry Matter (%)	84						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.318						
Filtered Eluate VE1 (litres)	0.30						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							



i2 Analytical

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Watford, WD18 8YS

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Waste Acceptance Criteria Analytical Results							
Report No:	24-021685						
				Client: OBSIDIAN			
Location	261 Wilmslow Road, Manchester						
Lab Reference (Sample Number)	210442			Landfill Waste Acceptance Criteria			
Sampling Date	23/05/2024			Limits			
Sample ID	WS07			Inert Waste Landfill	Stable Non- reactive HAZARDOUS waste in non- hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.40						
Solid Waste Analysis							
TOC (%)**	0.9			3%	5%	6%	
Loss on Ignition (%) **	4.1			--	--	10%	
BTEX (µg/kg)**	< 5.0			6000	--	--	
Sum of PCBs (mg/kg)**	< 0.007			1	--	--	
Mineral Oil (mg/kg) EH_ID_CU_AL	40			500	--	--	
Total PAH (WAC-17) (mg/kg)	6.84			100	--	--	
pH (units)**	7.9			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	9.4			--	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 *	0.0056	0.011		0.11	0.5	2	25
Barium *	0.021	0.0083		0.094	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0019	0.0057		0.054	0.5	10	70
Copper *	0.026	0.013		0.14	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.027	0.0067		0.086	0.5	10	30
Nickel *	0.0023	0.0013		0.014	0.4	10	40
Lead *	< 0.0017	< 0.0017		< 0.017	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 *	0.013	0.0046		0.054	4	50	200
Chloride *	54	9.4		130	800	15000	25000
Fluoride*	0.38	0.23		2.4	10	150	500
Sulphate *	170	28		410	1000	20000	50000
TDS*	390	97		1200	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	12.8	19		187	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.4						
Dry Matter (%)	84						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.307						
Filtered Eluate VE1 (litres)	0.16						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							



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Waste Acceptance Criteria Analytical Results							
Report No:	24-021685						
				Client: OBSIDIAN			
Location	261 Wilmslow Road, Manchester						
Lab Reference (Sample Number)	210443			Landfill Waste Acceptance Criteria			
Sampling Date	23/05/2024			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Sample ID	WS10						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.3			3%	5%	6%	
Loss on Ignition (%) **	0.6			--	--	10%	
BTEX (µg/kg)**	< 5.0			6000	--	--	
Sum of PCBs (mg/kg)**	< 0.007			1	--	--	
Mineral Oil (mg/kg) EH,10,CU,AL	< 10			500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85			100	--	--	
pH (units)**	8.3			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	5.5			--	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 *	0.048	0.015		0.19	20	100	300
Cadmium *	< 0.00010	< 0.00010		< 0.0010	0.04	1	5
Chromium *	0.0013	0.00064		0.0073	0.5	10	70
Copper *	0.011	0.0046		0.055	2	50	100
Mercury *	< 0.00070	< 0.0007		< 0.0070	0.01	0.2	2
Molybdenum *	0.0062	< 0.0014		0.018	0.5	10	30
Nickel *	0.0011	< 0.00090		< 0.0090	0.4	10	40
Lead *	< 0.0017	< 0.0017		< 0.017	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 *	0.0068	0.0016		0.023	4	50	200
Chloride *	< 4.0	< 4.0		21	800	15000	25000
Fluoride*	0.27	0.11		1.3	10	150	500
Sulphate *	6.6	1.3		20	1000	20000	50000
TDS*	82	31		380	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.16	< 0.13		< 0.50	1	-	-
DOC	5.64	13		117	500	800	1000
Leach Test Information							
Stone Content (%)	78.6						
Sample Mass (kg)	0.8						
Dry Matter (%)	93						
Moisture (%)	6.9						
Stage 1							
Volume Eluate L2 (litres)	0.329						
Filtered Eluate VE1 (litres)	0.24						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							

Analytical Report Number : 24-021685

Project / Site name: 261 Wilmslow Road, Manchester

* 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 *
210441	WS04	None Supplied	1	Brown loam with brick and stones
210442	WS07	None Supplied	0.4	Brown loam and clay with gravel
210443	WS10	None Supplied	0.5	Brown loam and sand with stones

Analytical Report Number : 24-021685
Project / Site name: 261 Wilmslow Road, Manchester

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
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
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
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 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 an 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	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 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	D/W	NONE

Analytical Report Number : 24-021685
Project / Site name: 261 Wilmslow Road, Manchester

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
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	W	ISO 17025
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

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

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

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

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

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

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 - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Appendix F

Geotechnical Laboratory Analysis Results



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Unit C4 Castle Vale Enterprise Park
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20 June 2024

Report No : GEO/40571/01

Page 1 of 1

For the attention of Mr S Dempsey

Our ref **GEO / 40571**
Your Ref **24-1965-P**

Date samples received 28/05/2024
Date written instructions received 28/05/2024
Date testing commenced 29/05/2024
Date of sample disposal 18/07/2024

Project **261 WILMSLOW ROAD, MANCHESTER**

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



BS EN ISO 17892-12 : 2018+A2:2022

SUMMARY OF LIQUID AND PLASTIC LIMIT TESTS

[illegible]

Test Type:	2 - 4 point 80g / 30° fall cone method.
------------	---

Sample condition: 1 - As Received
2 - Air Dried
3 - Washed & Air Dried

Checked and Approved by:

J. A. Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

261 WILMSLOW ROAD, MANCHESTER
24-1965-P



LIQUID AND PLASTIC LIMITS

Location WS04
Depth (m) 1.50
Sample Type D

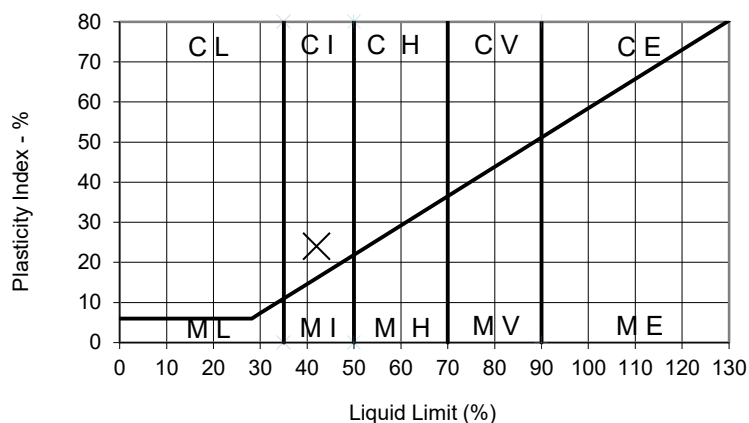
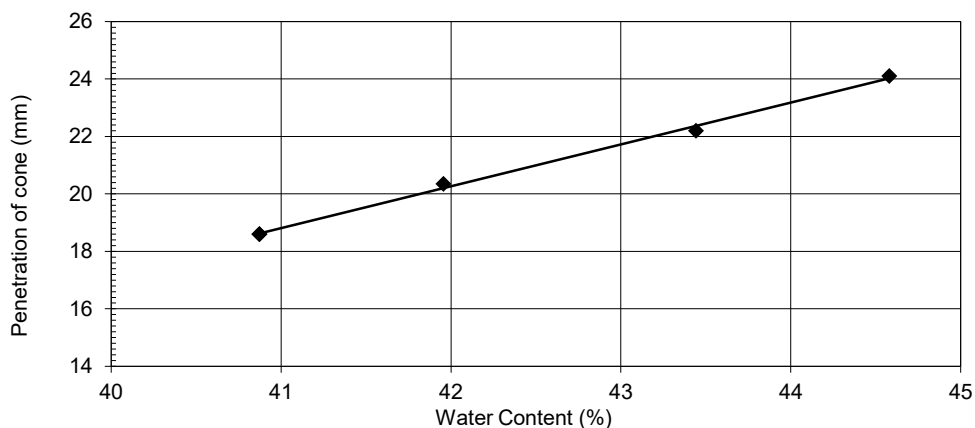
Description:

Greyish brown mottled brown and grey slightly sandy CLAY with some fine gravel.

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

Water Content : (BS EN ISO 17892-1:2014+A1:2022) 20.6 %
Measured percentage passing 425µm sieve : 92 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 42 %
Plastic Limit : 18 %
Plasticity Index : 24 %

Equivalent Water Content of material passing 425µm sieve : 22.3 %
Liquidity Index : 0.18



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



LIQUID AND PLASTIC LIMITS

Location WS05
Depth (m) 1.00
Sample Type D

Description:

Greyish brown mottled grey and brown slightly 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) 22.4 %

Measured percentage passing 425µm sieve : 90 %

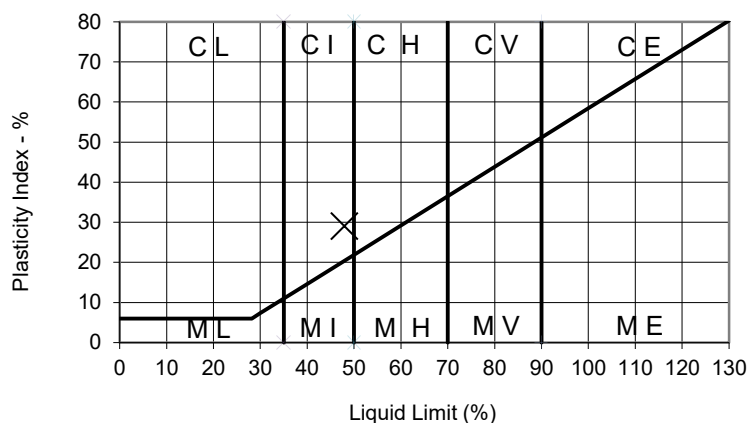
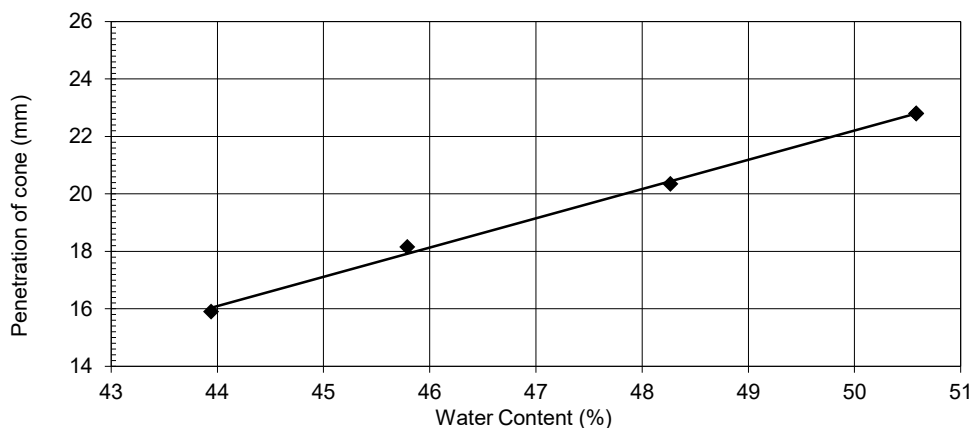
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with increasing water content : 48 %

Plastic Limit : 19 %

Plasticity Index : 29 %

Equivalent Water Content of material passing 425µm sieve : 24.9 %

Liquidity Index : 0.20



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



LIQUID AND PLASTIC LIMITS

Location WS08
Depth (m) 1.50
Sample Type D

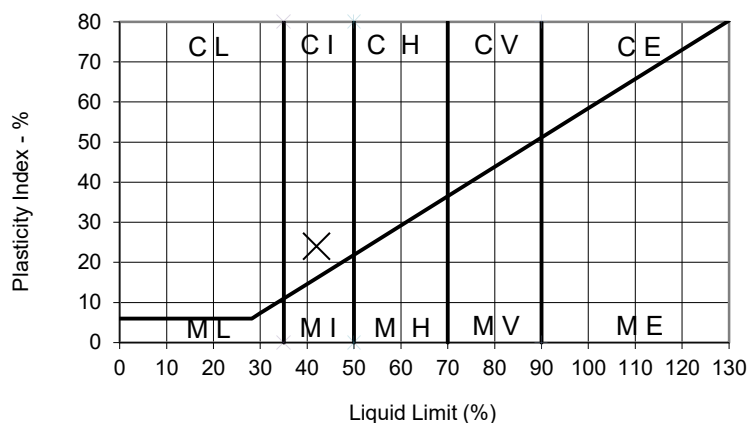
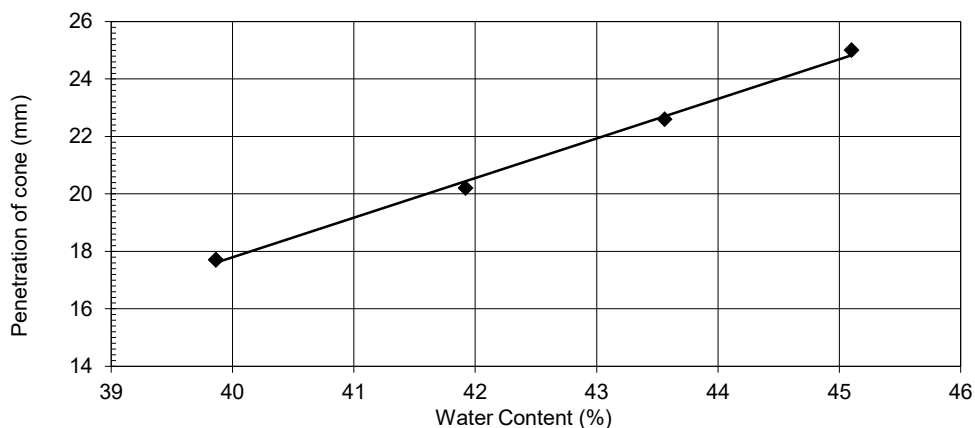
Description:

Greyish brown mottled grey Slightly 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) 18.8 %
Measured percentage passing 425µm sieve : 91 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 42 %
Plastic Limit : 18 %
Plasticity Index : 24 %

Equivalent Water Content of material passing 425µm sieve : 20.7 %
Liquidity Index : 0.11



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



LIQUID AND PLASTIC LIMITS

Location WS10
Depth (m) 1.00
Sample Type D

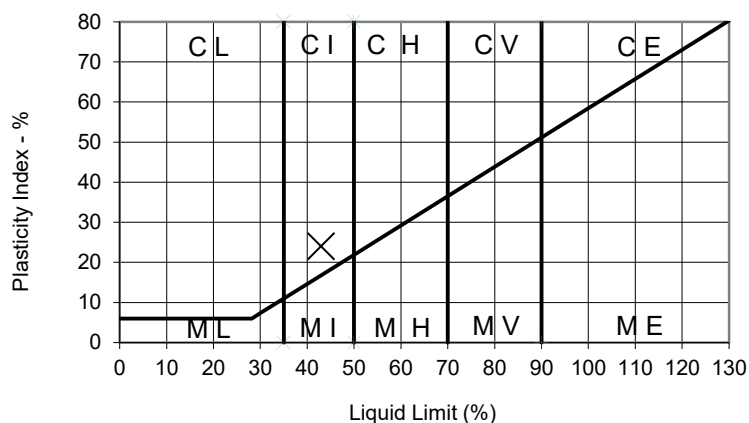
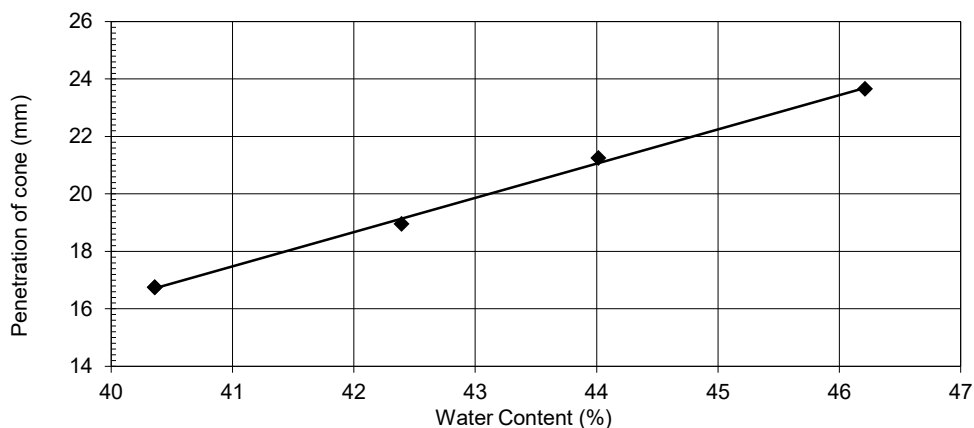
Description:

Multi-coloured slightly 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) 21.6 %
Measured percentage passing 425µm sieve : 89 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content : 43 %
Plastic Limit : 19 %
Plasticity Index : 24 %

Equivalent Water Content of material passing 425µm sieve : 24.2 %
Liquidity Index : 0.22



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



LIQUID AND PLASTIC LIMITS

Location WS11
Depth (m) 1.50
Sample Type D

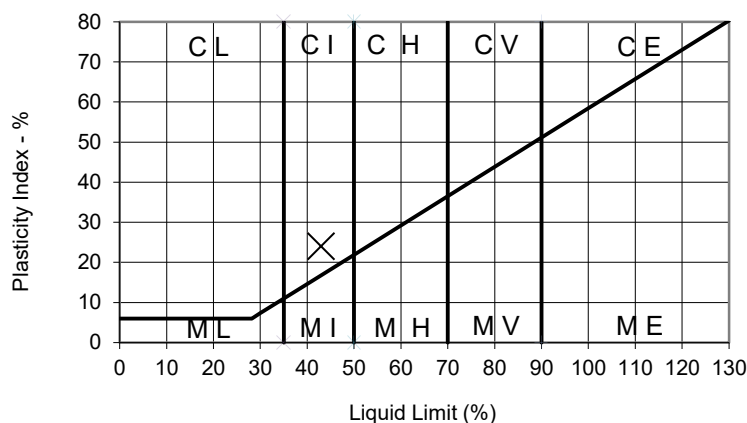
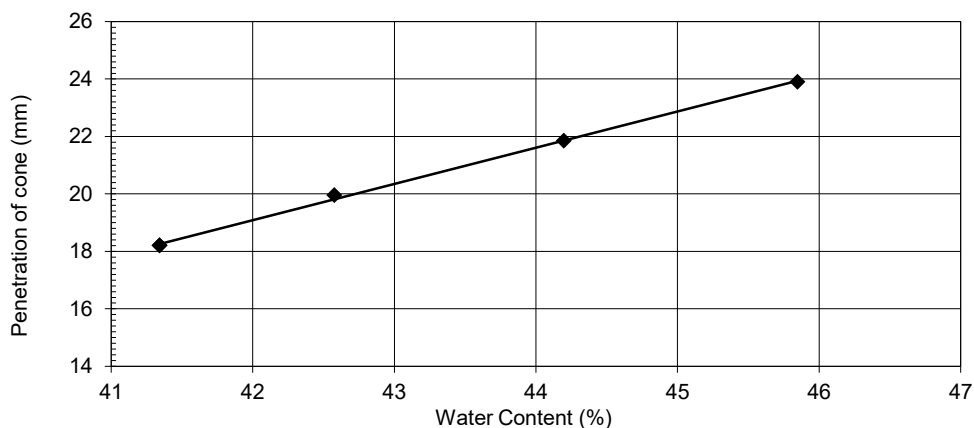
Description:

Brown mottled greyish brown and grey slightly 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)	20.4 %
Measured percentage passing 425µm sieve :	91 %
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with decreasing water content :	43 %
Plastic Limit :	19 %
Plasticity Index :	24 %

Equivalent Water Content of material passing 425µm sieve :	22.5 %
Liquidity Index :	0.15



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



LIQUID AND PLASTIC LIMITS

Location WS12
Depth (m) 1.50
Sample Type D

Description:

Greyish brown mottled brown and grey slightly 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) 18.7 %

Measured percentage passing 425µm sieve : 89 %

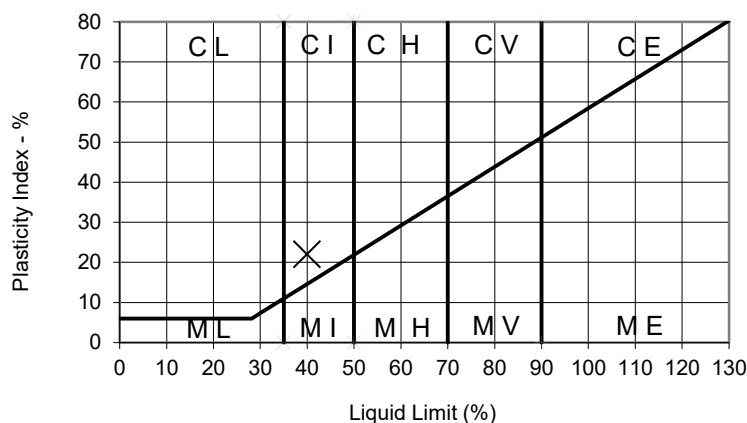
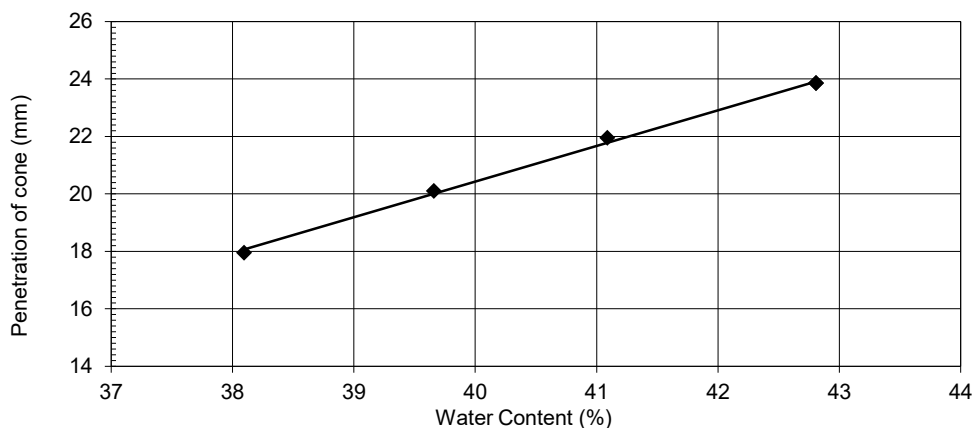
Liquid Limit - Fall Cone 4 point Method (cone angle 30°) with increasing water content : 40 %

Plastic Limit : 18 %

Plasticity Index : 22 %

Equivalent Water Content of material passing 425µm sieve : 21.0 %

Liquidity Index : 0.14



Tested by AD
Checked and Approved by

J A Reynolds

J A Reynolds - Director
20/06/2024

Project Number:

GEO / 40571

Project Name:

**261 WILMSLOW ROAD, MANCHESTER
24-1965-P**



Appendix G

OB-Screen Human Health Screening Assessment



OBScreen Human Health Screening Assessment

Project Name:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
Assessment Date:	June 2024
End Use Scenario:	Commercial

Project Name:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
End Use Scenario:	Commercial

Metals & Asbestos		Exploratory Hole Ref		WS01	WS02	WS03	WS04	WS05	WS06	WS07	WS08	WS09	WS10	WS11	WS12
		Additional Ref													
		Sample Depth (m)		0.5	0.2	0.5	0.5	0.5	0.3	0.4	0.5	0.3	0.5	0.2	0.2
Determinand	Screening Value	Source	Units												
Arsenic (As)	640	C4SL	mg/kg	2.5	2.2	9	6.9	2.9	6.1	26	13	6.5	2.7	3.4	14
W/S Boron	240,000	S4UL	mg/kg	0.5	< 0.2	0.5	1	1.5	1.4	0.8	0.4	0.3	< 0.2	< 0.2	0.6
Cadmium (Cd)	410	C4SL	mg/kg	1.4	2.3	< 0.2	0.3	0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.3	< 0.2
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	< 1.2	< 1.2
Copper (Cu)	68,000	S4UL	mg/kg	23	10	23	23	9.4	19	58	32	22	8.5	8.7	45
Lead (Pb)	2,300	C4SL	mg/kg	28	20	14	45	11	31	190	35	45	11	15	110
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	< 0.3	0.4
Nickel (Ni)	980	S4UL	mg/kg	6.9	7.5	31	12	7	12	23	38	9.7	3.1	4.2	27
Selenium (Se)	12,000	S4UL	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.3	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (Zn)	730,000	S4UL	mg/kg	100	53	54	73	31	40	130	66	47	22	22	130
Cyanide	34	OBScreen	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.3	<1.0	<1.0	<1.0	<1.0	<1.0
Asbestos Screen	Detection	OBScreen	-	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Chrysotile	Negative	Negative	Chrysotile	Chrysotile
Asbestos Quantification	Detection	OBScreen	%	-	-	-	-	-	-	-	<0.001	-	-	0.012	<0.001

Concentrations Highlighted in Red Exceed their Adopted Screening Value

Project Name:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
End Use Scenario:	Commercial

PAH		Exploratory Hole Ref	WS01	WS02	WS03	WS04	WS05	WS06	WS07	WS08	WS09	WS10	WS11	WS12
Based on 1.0% SOM		Additional Ref												
		Sample Depth (m)	0.5	0.2	0.5	0.5	0.5	0.3	0.4	0.5	0.3	0.5	0.2	0.2
Determinand	Screening Value	Source	Units											
Naphthalene	190	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	0.16	< 0.05	< 0.05	< 0.05
Acenaphthylene	83,000	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	< 0.05	< 0.05
Acenaphthene	84,000	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.07	0.93	0.07	< 0.05	< 0.05
Fluorene	63,000	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.8	< 0.05	< 0.05	< 0.05
Phenanthrene	22,000	S4UL	mg/kg	0.25	0.14	< 0.05	0.24	0.1	0.12	0.57	4.4	0.33	< 0.05	0.31
Anthracene	520,000	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14	1.5	< 0.05	< 0.05	< 0.05
Fluoranthene	23,000	S4UL	mg/kg	0.29	0.18	< 0.05	0.32	0.12	0.21	1.1	9.4	0.62	< 0.05	0.15
Pyrene	54,000	S4UL	mg/kg	0.32	0.12	< 0.05	0.3	0.11	0.19	1	8.2	0.6	< 0.05	0.17
Benzo(a)anthracene	170	S4UL	mg/kg	0.14	0.09	< 0.05	0.16	< 0.05	0.09	0.6	3.5	0.27	< 0.05	0.08
Chrysene	350	S4UL	mg/kg	0.29	0.09	< 0.05	0.17	< 0.05	0.12	0.61	3.7	0.3	< 0.05	0.09
Benzo(b)fluoranthene	44	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.69	3.7	0.31	< 0.05	< 0.05
Benzo(k)fluoranthene	1,200	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.24	1.5	0.13	< 0.05	< 0.05
Benzo(a)pyrene	35	S4UL	mg/kg	0.27	< 0.05	< 0.05	0.21	< 0.05	< 0.05	0.53	3.3	0.27	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	500	S4UL	mg/kg	0.19	< 0.05	< 0.05	0.1	< 0.05	0.05	0.29	1.7	0.15	< 0.05	< 0.05
Dibenz(a,h)anthracene	3.5	S4UL	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11	0.42	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	3,900	S4UL	mg/kg	0.52	< 0.05	< 0.05	0.16	< 0.05	0.07	0.32	1.8	0.18	< 0.05	< 0.05
Total Phenols (monohydric)	440	S4UL	mg/kg	<1.0	<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:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
End Use Scenario:	Commercial

TPH, BTEX & MTBE Based on 1.0% SOM		Exploratory Hole Ref		WS01	WS02	WS05	WS08	WS11	WS11	WS11	WS12	
		Additional Ref										
		Sample Depth (m)		0.50	0.60	0.50	0.50	0.20	0.50	1.00	0.20	
Determinand	Screening Value	Source	Units									
TPH												
Aliphatic >C5 - C6	3,200	S4UL	mg/kg	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Aliphatic >C6 - C8	7,800	S4UL	mg/kg	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	
Aliphatic >C8 - C10	2,000	S4UL	mg/kg	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	
Aliphatic >C10 - C12	9,700	S4UL	mg/kg	14	< 1.0	< 1.0	< 1.0	2.2	< 1.0	< 1.0	< 1.0	
Aliphatic >C12 - C16	59,000	S4UL	mg/kg	100	< 2.0	< 2.0	5.7	51	< 2.0	< 2.0	< 2.0	
Aliphatic >C16 - C21	1,600,000	S4UL	mg/kg	310	< 8.0	< 8.0	14	130	< 8.0	< 8.0	< 8.0	
Aliphatic >C21 - C34	1,600,000	S4UL	mg/kg	160	< 8.0	< 8.0	70	70	< 8.0	< 8.0	25	
Aromatic >C5 - C7	27	C4SL Benzene	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Aromatic >C7 - C8	56,000	S4UL	mg/kg	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
Aromatic >C8 - C10	3,500	S4UL	mg/kg	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	
Aromatic >C10 - C12	16,000	S4UL	mg/kg	4.8	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Aromatic >C12 - C16	36,000	S4UL	mg/kg	55	< 2.0	< 2.0	6.8	31	< 2.0	< 2.0	< 2.0	
Aromatic >C16 - C21	28,000	S4UL	mg/kg	220	< 10	< 10	41	67	< 10	< 10	12	
Aromatic >C21 - C35	28,000	S4UL	mg/kg	130	< 10	< 10	180	25	< 10	< 10	59	
BTEX & MTBE												
Benzene	27,000	C4SL	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Toluene	56,000,000	S4UL	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Ethylbenzene	5,700,000	S4UL	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
m & p-xylene	5,900,000	S4UL	ug/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
o-xylene	6,600,000	S4UL	ug/kg	<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	<5.0	<5.0	

Concentrations Highlighted in Red Exceed their Adopted Screening Value

LQM S4UL Publication Ref: S4UL3698

Obsidian Geo-Consulting Limited©

Appendix H

Ground Gas Monitoring Results



Ground Gas and Groundwater Monitoring Results



Project Name:	261 Wimslow Road, Manchester
Project Number:	24-1965
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd

Date:	30/05/2024
Visit:	1 of 4

Barometric Pressure (mb)	
Start:	1005
Finish:	1005
Trend:	Rising

Ambient Concentration (% vol)	
CH ₄ :	ND
CO ₂ :	ND
O ₂ :	20.6

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Sunny
Surface Conditions:	Damp
Operator:	SH

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Ground Gas and Groundwater Monitoring Results



Project Name:	261 Wimslow Road, Manchester
Project Number:	24-1965
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd

Date:	05/06/2024
Visit:	2 of 4

<u>Barometric Pressure (mb)</u>	
Start:	1007
Finish:	1007
Trend:	Rising

Ambient Concentration (% vol)	
CH ₄ :	ND
CO ₂ :	ND
O ₂ :	20.6

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Sunny
Surface Conditions:	Dry
Operator:	SH

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Ground Gas and Groundwater Monitoring Results



Project Name:	261 Wimslow Road, Manchester
Project Number:	24-1965
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd

Date:	13/06/2024
Visit:	3 of 4

<u>Barometric Pressure (mb)</u>	
Start:	1005
Finish:	1008
Trend:	Falling

Ambient Concentration (% vol)	
CH ₄ :	ND
CO ₂ :	0.3
O ₂ :	20.2

Monitoring Equipment:	GFM436 Gas Analyser
Weather Conditions:	Sunny
Surface Conditions:	Dry
Operator:	SH

Key	
ND =	Not detected
NGW =	No groundwater encountered

[illegible]

Ground Gas and Groundwater Monitoring Results



Project Name:	261 Wimslow Road, Manchester
Project Number:	24-1965
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd

Date:	20/06/2024
Visit:	4 of 4

Barometric Pressure (mb)	
Start:	1016
Finish:	1013
Trend:	

Ambient Concentration (% vol)	
CH ₄ :	ND
CO ₂ :	ND
O ₂ :	20.9

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

Key	
ND =	Not Detected
NGW =	No Groundwater Encountered

[illegible]

Appendix I

TRL DCP Results



TRL DCP Field Test Record Sheet



Project Name:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd
TRL DCP Ref:	DCP01
Depth at Start of Test (mm bgl):	220
Date:	22/05/2024
Comments:	Test undertaken from base of concrete surfacing

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	265	220	0
1	300	255	35
2	315	270	15
3	320	275	5
4	330	285	10
5	335	290	5
6	340	295	5
7	350	305	10
8	355	310	5
9	360	315	5
10	370	325	10
11	370	325	0
12	375	330	5
13	380	335	5
14	390	345	10
15	395	350	5
16	405	360	10
17	410	365	5
18	420	375	10
19	425	380	5
20	430	385	5
21	435	390	5
22	440	395	5
23	450	405	10
24	460	415	10
25	470	425	10
26	485	440	15
27	495	450	10
28	500	455	5
29	510	465	10
30	520	475	10
31	530	485	10
32	540	495	10
33	550	505	10
34	565	520	15
35	580	535	15
36	595	550	15
37	610	565	15
38	630	585	20
39	660	615	30
40	690	645	30
41	720	675	30
42	745	700	25
43	770	725	25
44	820	775	50
45	850	805	30
46	860	815	10
47	870	825	10
48	875	830	5
49	875	830	0
50	880	835	5

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	880	835	0
52	880	835	0
53	880	835	0
54	-	-	-
55	-	-	-
56	-	-	-
57	-	-	-
58	-	-	-
59	-	-	-
60	-	-	-
61	-	-	-
62	-	-	-
63	-	-	-
64	-	-	-
65	-	-	-
66	-	-	-
67	-	-	-
68	-	-	-
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 begl)	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:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd
TRL DCP Ref:	DCP02
Depth at Start of Test (mm bgl):	230
Date:	22/05/2024
Comments:	Test undertaken from base of concrete surfacing

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	290	230	0
1	320	260	30
2	335	275	15
3	350	290	15
4	370	310	20
5	390	330	20
6	410	350	20
7	425	365	15
8	455	395	30
9	510	450	55
10	600	540	90
11	650	590	50
12	685	625	35
13	710	650	25
14	740	680	30
15	760	700	20
16	780	720	20
17	795	735	15
18	800	740	5
19	825	765	25
20	840	780	15
21	855	795	15
22	870	810	15
23	880	820	10
24	895	835	15
25	910	850	15
26	920	860	10
27	925	865	5
28	-	-	-
29	-	-	-
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-
36	-	-	-
37	-	-	-
38	-	-	-
39	-	-	-
40	-	-	-
41	-	-	-
42	-	-	-
43	-	-	-
44	-	-	-
45	-	-	-
46	-	-	-
47	-	-	-
48	-	-	-
49	-	-	-
50	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	-	-	-
52	-	-	-
53	-	-	-
54	-	-	-
55	-	-	-
56	-	-	-
57	-	-	-
58	-	-	-
59	-	-	-
60	-	-	-
61	-	-	-
62	-	-	-
63	-	-	-
64	-	-	-
65	-	-	-
66	-	-	-
67	-	-	-
68	-	-	-
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 begl)	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:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd
TRL DCP Ref:	DCP03
Depth at Start of Test (mm bgl):	180
Date:	23/05/2024
Comments:	Test undertaken from base of concrete surfacing

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	245	180	0
1	280	215	35
2	310	245	30
3	325	260	15
4	340	275	15
5	355	290	15
6	370	305	15
7	380	315	10
8	400	335	20
9	410	345	10
10	420	355	10
11	450	385	30
12	510	445	60
13	545	480	35
14	585	520	40
15	625	560	40
16	650	585	25
17	680	615	30
18	710	645	30
19	725	660	15
20	750	685	25
21	770	705	20
22	790	725	20
23	810	745	20
24	830	765	20
25	845	780	15
26	860	795	15
27	880	815	20
28	900	835	20
29	915	850	15
30	930	865	15
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-
36	-	-	-
37	-	-	-
38	-	-	-
39	-	-	-
40	-	-	-
41	-	-	-
42	-	-	-
43	-	-	-
44	-	-	-
45	-	-	-
46	-	-	-
47	-	-	-
48	-	-	-
49	-	-	-
50	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	-	-	-
52	-	-	-
53	-	-	-
54	-	-	-
55	-	-	-
56	-	-	-
57	-	-	-
58	-	-	-
59	-	-	-
60	-	-	-
61	-	-	-
62	-	-	-
63	-	-	-
64	-	-	-
65	-	-	-
66	-	-	-
67	-	-	-
68	-	-	-
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 begl)	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:	261 Wilmslow Road, Manchester
Project Number:	24-1965-P
Client:	Lidl Great Britain Ltd & Buzzard Holdings Ltd
TRL DCP Ref:	DCP04
Depth at Start of Test (mm bgl):	150
Date:	23/05/2024
Comments:	Test undertaken from base of concrete surfacing

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
0	210	150	0
1	260	200	50
2	390	330	130
3	460	400	70
4	520	460	60
5	565	505	45
6	590	530	25
7	630	570	40
8	650	590	20
9	670	610	20
10	690	630	20
11	710	650	20
12	730	670	20
13	750	690	20
14	770	710	20
15	780	720	10
16	790	730	10
17	810	750	20
18	820	760	10
19	830	770	10
20	840	780	10
21	855	795	15
22	860	800	5
23	870	810	10
24	885	825	15
25	890	830	5
26	900	840	10
27	910	850	10
28	920	860	10
29	930	870	10
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-
36	-	-	-
37	-	-	-
38	-	-	-
39	-	-	-
40	-	-	-
41	-	-	-
42	-	-	-
43	-	-	-
44	-	-	-
45	-	-	-
46	-	-	-
47	-	-	-
48	-	-	-
49	-	-	-
50	-	-	-

Blow	Reading on Scale (mm)	Depth (mm bgl)	Penetration (mm)
51	-	-	-
52	-	-	-
53	-	-	-
54	-	-	-
55	-	-	-
56	-	-	-
57	-	-	-
58	-	-	-
59	-	-	-
60	-	-	-
61	-	-	-
62	-	-	-
63	-	-	-
64	-	-	-
65	-	-	-
66	-	-	-
67	-	-	-
68	-	-	-
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 begl)	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	-	-	-



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