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Architect/Consultant

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Phase II Contaminated Land Risk Assessment

Storage World Ambrose Street, Manchester

Jan 2023

Site Ref: 6101/VAJ-CLRA v1.00

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Phase II Contaminated Land Risk Assessment

1. Introduction

This report is an account of a Phase II Contaminated Land Risk Assessment carried out by GeoAssist Limited at the request of the Client Storage World Self Storage & Workspace LLP for the proposed development at Storage World Ambrose Street, Manchester.

The work was commissioned following acceptance of the quotation and an instruction to proceed issued by the Client Storage World Self Storage & Workspace LLP on 3rd November 2023.

The purpose of this Phase II investigation is to provide information following the conclusions of the Phase I report Produced by GeoAssist and dated August 2022, in order to ensure that the site:

- Is assessed in accordance with the UK government methodology outlined online in Land Contamination Risk Management (LCRM)
- Satisfies the relevant requirements of the National Planning Policy Framework July 2021.
- Is suitable for the intended proposed land use. In this case, as a Commercial Development

The approximate grid reference for the centre of the site is 387260, 397200 and the total area of the site is approximately 4,500m². The area of the site scheduled for investigation is outlined with a solid red line on the site plan in Appendix A1. The positions of exploratory holes are also indicated on the plan. The proposed development plan is shown in appendix A2.

2. Description of the Site

2.1 Present

The site is located to the northern side of Ambrose Street at the junction of Pottery Lane and is presently occupied by a large warehouse structure with associated exterior hardstanding areas. The building is subdivided into smaller commercial/light industrial and retail lettings. The site is roughly rectangular in shape and the general topography of the site is relatively level. A small brick bunded above ground diesel storage tank is located between the railway and the rear of the building to the north approximately mid-way along the building from east to west. The Tank was noted to be empty and did not look like it had been used for some years. A faint odour of stale diesel was noted as is common in such circumstances. No obvious signs of leaks or containment failure were noted.

A railway line forms the northern boundary to the site. Commercial/industrial property is located along the eastern boundary of the site. The southern boundary to the site abuts Ambrose Street over which more commercial/industrial property is located. To the west the site abuts Pottery Lane across which more commercial /warehousing/light industrial units are located.

Where observed the condition of the concrete floor was not uniform or consistent. At the time of the site walkover no visual or olfactory observations of contaminants were noted.

2.2 Proposed Development

The proposed development comprises a new storage facility occupying a similar footprint to the existing unit with new concrete floor slabs and external hardstanding. The proposed plan for the Site forms appendix A2 to this report.

3. Review Of Previous Reports

There is no indication that previous subsurface intrusive ground investigations have been undertaken on this site. The issues to be covered in the present investigation are to provide information in respect of any potentially unacceptable geo-environmental risks arising from previous land uses both on site and in the immediate area, and the potential for any sources of contamination to impact both present and future receptors, including:

- Human
- Controlled waters via established pathways
- Property
- Adjoining land

4. Intrusive Investigation

4.1 Intrusive Investigation objectives

The objectives of the site investigation are to collect data to confirm whether or not the soils beneath the site in their current state pose a risk by reason of substances within or under the land that;

- Significant harm is being caused or there is significant possibility of such harm being caused; or
- Pollution of controlled waters is being, or is likely to be, caused.

Data to describe the following parameters has been collected at a suitable spatial resolution in accordance with BS10175, 2015:

- Soil Characteristics including type of material
- Chemical profile of the soil.

These data will be used to refine a conceptual site model and confirm the existence of any established contaminant linkage in accordance with the UK government methodology outlined online in Land Contamination Risk Management (LCRM) as well as The Environment Agency Requirements for Land Contamination Reports, 2005.

4.2 Intrusive Investigation Strategy

The ground investigation was carried out in accordance with British Standard 5930: 2015 Code of Practice for Site Investigations and BS BS10175: 2011 Investigation of potentially contaminated sites where relevant.

All fieldwork was supervised by suitably qualified GeoAssist Limited Environmental Engineers.

The analytical testing was carried out in an independent UKAS accredited Laboratory.

4.3 Methods Used For Forming Exploratory Holes

The exploratory holes undertaken across the site as part of this investigation were established using windowless drive sample excavation methods and hand tool excavation. Information obtained from the Phase I Preliminary Contaminated Land Risk Assessment was used to inform a decision on the actual exploratory hole locations whilst taking account of positions that could be reasonably accessed with minimal preparation works using the drilling and excavation plant available. The location of services was also considered during the positioning of the exploratory holes along with the position of any proposed soft landscaping areas. A plan showing the locations of the exploratory holes established as part of the investigation forms Appendix A1 to this report.

4.4 Exploratory Hole Programme

In total eight exploratory holes referenced BH1 to BH6 and TP1 to TP2 were undertaken by GeoAssist. BHs were advanced using windowless sampling and dynamic probing techniques and Exploratory holes TP1 & TP2 were excavated using hand tools in order to assess the foundations of the existing retaining wall.

The location of the exploratory holes is shown on the site plan in Appendix A1.

The details of the strata in the exploratory holes were recorded by a suitably qualified Professional Engineer.

All intrusive work was carried out generally in accordance with British standard 5930: 1999/2015 Code of Practice

for Site Investigations and British Standard 10175: 2011 where relevant and applicable.

The fieldwork was undertaken from the 14th November to 16th November 2022 in mixed conditions.

4.5 Field Sampling and Testing

A non-targeted borehole layout was selected as the most appropriate strategy for this site with some supplemental targeted sampling in exploratory holes nearest to the bunded diesel tank. Representative samples were taken of all the strata encountered in the exploratory holes. Once exposed samples to be subjected to chemical analysis were immediately placed into a suitable container and stored in a cool dark sample box prior to submission to the laboratory in order to prevent alteration of the composition of the samples. In all cases 500ml wide necked amber glass jars were used with a Teflon faced foamed polyethylene cap liner that offers excellent chemical resistance with the compressibility and sealing properties of polyethylene foam. These containers were filled with sample, sealed and delivered to the laboratory for testing. Samples for volatile compounds were placed into appropriate containers with a screw cap and pierceable septum as supplied by the testing laboratory specifically appropriate to the determinand. These containers were filled with sample, sealed and delivered to the laboratory for testing. Observations of groundwater conditions were recorded throughout the fieldwork operations. All other samples were stored in airtight containers and returned to the laboratory for examination and geotechnical testing where necessary.

A photo ionisation detector (PID) was used to indicate the likelihood of the presence of volatile organic compounds during the fieldwork and in the laboratory. The results are indicated on the Borehole logs only where readings in excess of 10ppm were monitored. Readings in excess of 50ppm indicate that samples are required to be tested for Volatile Organic Compounds. No samples were found to exceed 10ppm.

5. Laboratory Investigation

5.1 Contamination Testing

In total nine soil samples were collected and subjected to elements of the suite of chemical testing as outlined below. All tests were conducted by i2 Analytical under UKAS Testing No 4041. The results of all the chemical analysis tests are given in Appendix C1.

Table 5.1 Analytical Determinands

Soils	
Arsenic	Acenaphthene
Boron (water-soluble)	Acenaphthylene
Cadmium	Anthracene
Chromium	Benzo(a)Anthracene
Chromium VI	Benzo(a)Pyrene
Copper	Benzo(b/k)Fluoranthene
Cyanide(Total)	Benzo(ghi)Perylene
Cyanide(free)	Chrysene
Lead	Dibenzo(ah)Anthracene
Mercury	Fluoranthene
Nickel	Fluorene
pH	Indeno(123-cd)Pyrene
Phenols(Mono)	Naphthalene
Selenium	Phenanthrene
SO4(Total)	Pyrene
Sulphide	
Sulphur(Free)	Asbestos screen & ID
Thiocyanate	TPH (aliphatic and aromatic split)
Zinc	

6. Subsurface Stratigraphy

The subsoil profile obtained from the exploratory holes consists of made ground to depths between 0.40m and 2.70m over gravelly sandy silty Clay with sand inclusions. The upper made ground consists of concrete/hard standing over sandy gravels with brick fragments. A lower silty clay with cinders and ash was encountered in BH2, BH3 and BH6.

Table 6.0 Subsoil Profile Summary

Strata	Depth of Strata (m) below ground level	
	Top	Base
Made Ground – MG1 Concrete/Hard standing over variable mixed granular	Ground Level	0.30 to 1.40
Made Ground – MG2 Silty Clay with ash and cinders in parts	0.20 to 1.90 BH2, BH3 and BH6	2.00 to 2.70 BH2, BH3 and BH6
Glacial Till – GT Gravelly sandy silty Clay	0.40 to 2.70	>6.00

Further details of the subsurface stratigraphy can be found in the exploratory hole log sheets which form Appendix B1 to this report.

7. Groundwater

Groundwater was encountered at depths of 1.90m and 1.00m in BH1 and BH6 respectively during the course of the fieldwork. The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken.

Groundwater levels associated with the groundwater monitoring in BH1 and BH6 standpipes installed on this site indicate that over the monitoring period 09/12/2022 to 16/01/2023, ground water has been recorded as being present at highest depths of 1.90m and 0.80m respectively with a corresponding highest level around 51.0 mAOD. Water ingress was noted at a higher level of 52.3mAOD in the Trial Pits.

Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.

8. Ground Gas

Ground gas monitoring is in process and a separate report will be produced upon completion of the gas monitoring exercise. The subsurface stratigraphy has proved that the site is underlain by up to 2.00m of made ground not noted to contain putrescible materials capable of generating significant quantities of ground gas.

The requirements for Radon gas measures are discussed in the Preliminary Contaminated Land Risk Assessment report.

9. Part IIA Legislation

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a new regime for the control of specific threats to health or the environment from existing land contamination. In accordance with the Act and the statutory guidance document on The Contaminated Land (England) Regulations 2000, the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only “contaminated land” where it appears to the regulatory authority, by reason of substances within or under the land that:

- § Significant harm is being caused or there is significant possibility of such harm being caused; or
- § Pollution of controlled waters is being, or is likely to be, caused.

The guidance defines “risk” as the combination of

- § The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- § The magnitude (including the seriousness) of the consequences.

For a risk of pollution or environmental harm to occur as a result of ground contamination, all of the following elements must be present:

- § A source, i.e. a substance that is capable of causing pollution or harm;
- § A receptor (or target). i.e. something which could be adversely affected by the contaminant; and
- § A pathway, i.e. a route by which the contaminant can reach the receptor.

If one of these elements is missing, there can be no significant risk. If all are present then the magnitude of the risk is a function of the magnitude and mobility of the source, the sensitivity of the receptor and the nature of the migration pathway.

9.1 Assessment Methodology

In order to assess the environmental risk posed by potential contaminants within the near surface soils considering the final levels of the scheme, GeoAssist Limited undertook an initial screen of the laboratory results using GeoAssist Limited Generic Assessment Criteria (GACs) and where applicable Category 4 Screening Levels or Suitable 4 Use Levels as given as part of Appendix C2.

The GeoAssist Limited GACs and Category 4 Screening levels (C4SLs and S4UL herein) are generated in consideration of the proposed end use of the site, in this case as Commercial land. Contaminant concentrations below the GACs and or C4SLs levels are considered not to warrant further risk assessment. Concentrations of potential contaminants above the GACs and C4SLs levels require further consideration of the potential pollutant linkages. It should be noted that exceedance of the GACs and or C4SLs levels does not necessarily mean that the site requires remediation, although this is dependent on the nature, type and depth of the contaminant and further justification may be required.

9.2 Soils

For assessment of the soil analysis results with regard to potential human health risks, GeoAssist Limited GACs are

selected from the following sources which represent minimal risk to site users:

CLEA Soil Guideline Values (SGVs). These values have been developed by the Department of the Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) using the Contaminated Land Exposure Assessment (CLEA) Model, and are considered to be protective of human health (considered to be a potential receptor on site). To date, SGVs have been published for only a limited suite of contaminants, with SGVs derived for each contaminant for three different land use scenarios namely:

- § residential
- § allotments
- § commercial and industrial.

The proposed assessment of this site is as Commercial land as this is considered to be the most appropriate land use scenario for the current and proposed situation on site.

Chartered Institute of Environmental Health Generic Assessment Criteria (LQM CIEH GAC) have been used where available and where CLEA SGVs have not yet been published.

Where CLEA or LQIM CIEH GAC values are not available, Atkins at Risk GAC values have been selected as appropriate all of which represent a minimal risk to receptors.

C4SLs have been used in conjunction with the above GAC and these represent a Low Level of Toxicological Concern (LLTC herein). LLTC represent an intake of low concern that remains suitably protective of health, and definitely does not approach an intake level that could be defined as Significant Possibility of Significant Harm.

The CLEA guidelines state that for each contaminant, apart from lead, the upper 95th percentile of the mean measured concentration should be calculated where appropriate and this value should be compared to the applicable screening value (defined here as the GeoAssist Limited GACs). For Lead impacts the geometric mean should be calculated and compared to the GAC or C4SL.

The CLEA model states that, 'the contamination is assumed to be at or within 1 m of the surface (CLR10 page 10 now withdrawn).' It is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways are significantly reduced, leaving inhalation of volatile compounds as the dominant pathway. Typically, volatile compounds only significantly affect the indoor inhalation pathway.

9.3 Subsoil Deposits

The contaminants that were identified above the GeoAssist Limited GACs, SGVs or C4SLs for a Commercial end use from the GeoAssist Limited investigations are summarised below:

Table 9.3 Summary identified impacts.

Determinand	GAC (mg/kg) Comm.	No of tests	No of samples exceeding SGV/GAC/ C4SL	Max Value (mg/kg)	Treat as a Hotspot	US95 Value or Geometric Mean (for Lead)	Further action required
Non-Identified							

The assessment of chemical analysis summarised in table 9.3 has not identified any potential risks to end users of the site from elevated levels of anthropogenic contamination within the soils on the site.

Asbestos fibres and Asbestos Containing Material was noted to be present within all of the 5 samples tested. All of the samples contained chrysotile Asbestos. However, this does not preclude the possibility that further occurrences of Asbestos or ACM could occur within the made ground on site. There is no immediate risk from this issue provided the current use remains the same and the concrete cap remains in place. Earth works contractors are those most at risk and it is the duty of the principal contractor to apply appropriate measures under the Health & Safety at Work Act 1974 and the Control of Asbestos Regulations 2012. The developer and the contractor should be aware that any excavations will need a specific and detailed method statement to deal with ACM as it is encountered and they should satisfy themselves that, where applicable, the CAR 2012 regulations have been adhered to. The asbestos content of soils might not necessarily be treated as hazardous waste. However, this should be confirmed by the principal contractor prior to off site disposal. The soil samples submitted to the laboratory are likely to be representative of those found on site. However, this does not preclude the possibility that further occurrences or pockets of Asbestos or ACM could occur within the made ground on site and the contractor should put in place a CAR 2012 method statement to deal with any out of specification materials should they be encountered.

Table 9.31 Summary identified asbestos impacts.

Sample ID	Sample Depth (m)	Sample Weight (g)	Asbestos Containing Material Types Detected (ACM)	PLM Results	na	na
BH1 C1	0.30	Na	Hard/Cement Type Material	Chrysotile		
BH2 C2	0.40	Na	Hard/Cement Type Material & Loose fibrous debris	Chrysotile		
BH3 C1	0.50	Na	Loose Fibrous Debris	Chrysotile		
BH5 C1	0.50	Na	Loose Fibres	Chrysotile		
TP1 C1	0.30	Na	Hard/Cement Type Material	Chrysotile		

The results of all the chemical laboratory analytical tests form appendix C1 to this report and the analysis of the results forms appendix C2 to this report.

9.4 Discussion

The assessment of the chemical laboratory analytical tests has identified that the soils on this site pose a moderate risk to end users from Contaminants of Concern when assessed in accordance with the current UK methodology. Consequently, the risk to end user receptors from ground contamination is classified as moderate given a residential end use scenario.

Construction Workers

The risk to construction workers and site users during the construction phase is assessed to be low to moderate provided that good working practice is maintained. Standard PPE & RPE precautions should be adopted at the site strip stage including the use of disposable coveralls, particulate masks and damping down to suppress airborne dust where conditions dictate. Additional measures may be required for Asbestos risks and these should be assessed by the principal contractor.

Site Users

Given the proposed development of 100% hardstanding coverage of the site. The risk to site users of the completed development is deemed to be low in all reasonably foreseeable circumstances.

10. Conceptual Model

The updated conceptual model based on the information and test results presented in this report including contamination sources, pathways and receptors is presented below.

Table 10.0 Amended Conceptual Site Model based on information as presented within this report.

Potential Source /Hazard	Nature of Hazard (Risk Level to site given a residential end use)	Contaminants Associated with Source	Potential Pathway	Potential Receptor
<i>Previous & Present ON SITE Land uses:</i>				
1. Greenfield Land/ Residential Property	Ground contamination Low Risk	See DoE Profiles	~~Dermal Contact~~ ~~Ingestion~~ ~~Inhalation~~	Site Users Construction workers Controlled Waters
	Gas from in-filled ground SEE GAS RISK ASSESSMENT REPORT	None	Vertical and Lateral Migration	Site Users Future Buildings & Services
2. Made Ground	Ground contamination Low to moderate Risk Given a commercial end use		~~Dermal Contact~~ ~~Ingestion~~ ~~Inhalation~~	Site Users (low risk) Construction workers (low to moderate risk)
	Gas from in-filled ground SEE GAS RISK ASSESSMENT REPORT	Carbon Dioxide Methane	Vertical and Lateral Migration	Site Users Future Buildings & Services
3. Boiler Works	Ground contamination Low to moderate Risk Given a commercial end use	Asbestos Chrysotile Identified	~~Dermal Contact~~ ~~Ingestion~~ ~~Inhalation~~	Site Users (low risk) Construction workers (low to moderate risk)
	Gas from in-filled ground SEE GAS RISK ASSESSMENT REPORT	None	Vertical and Lateral Migration	Site Users Future Buildings & Services
4. Iron Works with Chimney	Ground contamination Moderate Risk Given a commercial end use	None Identified	~~Dermal Contact~~ ~~Ingestion~~ ~~Inhalation~~	Site Users Construction workers Controlled Waters
	Gas from in-filled ground SEE GAS RISK ASSESSMENT REPORT	None	Vertical and Lateral Migration	Site Users Future Buildings & Services
5. Works	Ground contamination Low Risk Given a commercial end use	None Identified	~~Dermal Contact~~ ~~Ingestion~~ ~~Inhalation~~	Site Users Construction workers Controlled Waters
	Gas from in-filled ground SEE GAS RISK ASSESSMENT REPORT	None	Vertical and Lateral Migration	Site Users Future Buildings & Services
<i>Previous OFF SITE land uses within 250m as indicated by Historical Plans Including:</i>				
7. Refuse Heap	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk Site developed	Methane, Carbon Dioxide	None	Site Users Future Buildings & Services
8. Chemical Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
9. Railway Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
10. Starch Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings &

				Services
11. Cotton Mill	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
12. Soap Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
13. Kiln	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
14. Gas & Oil Engine Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
15. Print Finishing Mill	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
16. Rubber Works	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
17. Garage	Ground contamination Low Risk	See DoE Profiles	None	Site Users Construction workers Controlled Waters
	Gas from in-filled ground Low Risk	None	None	Site Users Future Buildings & Services
18. Coal Workings & Mineral Extraction	Geotechnical Hazard Low Risk	None	None	Humans (site users) Future Buildings & Services
	Ground contamination Low Risk	None	None	Site Users Services
	Mine Gas Low Risk	None	None	Humans (site users) Future Buildings & Services

Only sources that have not been present on site in the past or currently are considered within the off site category. Unless the information is deemed to be pertinent to the analysis.

11. Conclusions

Evidence presented elsewhere within this report indicates that the ground on this site presents a Low contamination risk to end user receptors given a commercial end use scenario.

Elsewhere,

- § The controlled waters (groundwater) beneath the site are unlikely to become impacted by the passage of water through the soils on site.
- § The site is unlikely to be defined as contaminated land within the context of part IIA.
- § The site, in its present condition, does not represent a significant risk to the environment and is unlikely to become an environmental liability in the future.
- § The Appointed Principal Contactor will need to address the issues relating to the presence of ACM within the made ground at the site.
- § The risk to building services from chemical attack is likely to be negligible and as such no special precautions are required to protect the building fabric or services entering the buildings. However, this should be confirmed by a competent person once service routes and locations have been decided

11.1 Supplementary Recommendations

None



Matthew Benson MSc. GMICE
Geotechnical/Environmental Engineer



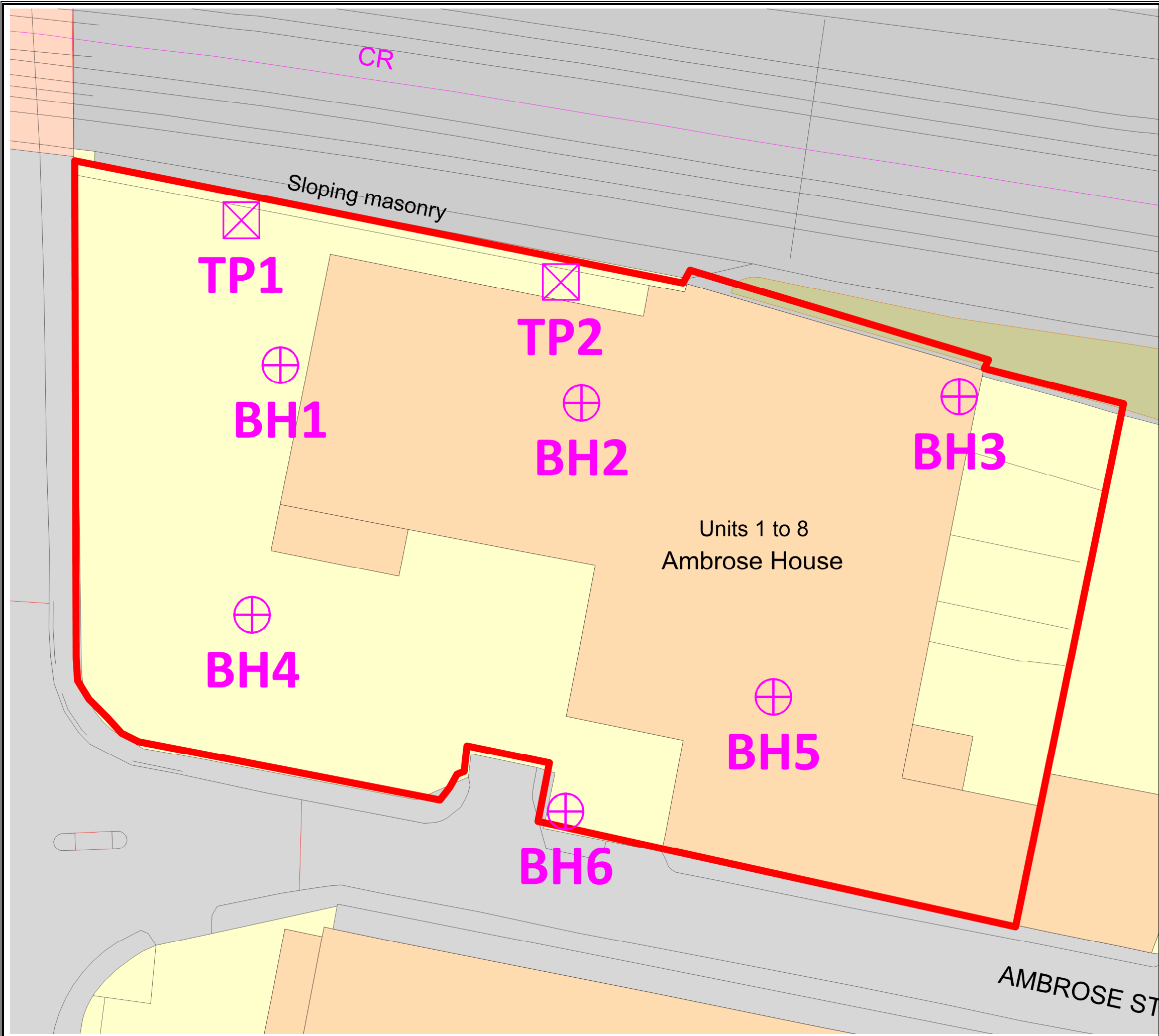
Mark Richardson MSc CEng MICE
Technical Director

Field investigations have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions are, and can be, variable and have only been tested at isolated locations across the site. Therefore, the potential exists for ground conditions to be encountered which are different to those considered in this report. Chemical analysis was conducted for a number of parameters based on an expert understanding of the historical and operational data available at the time and it should not be inferred or otherwise, that other chemical species are not present.

This report has been prepared by GeoAssist Limited with all reasonable professional skill, care and diligence within the terms of the contract with Storage World Self Storage & Workspace LLP. The report is confidential to Storage World Self Storage & Workspace LLP, their/the named persons, advisors and bankers, and GeoAssist Limited accepts no responsibility of whatever nature to third parties to whom this report may be divulged. GeoAssist Limited owns the copyright in this report. All rights are reserved and unauthorised use is prohibited. Storage World Self Storage & Workspace LLP may use the report for their/her/his own purposes.

Appendix A

- A1 Site Plan & Exploratory Hole Locations
- A2 Proposed Site Plan

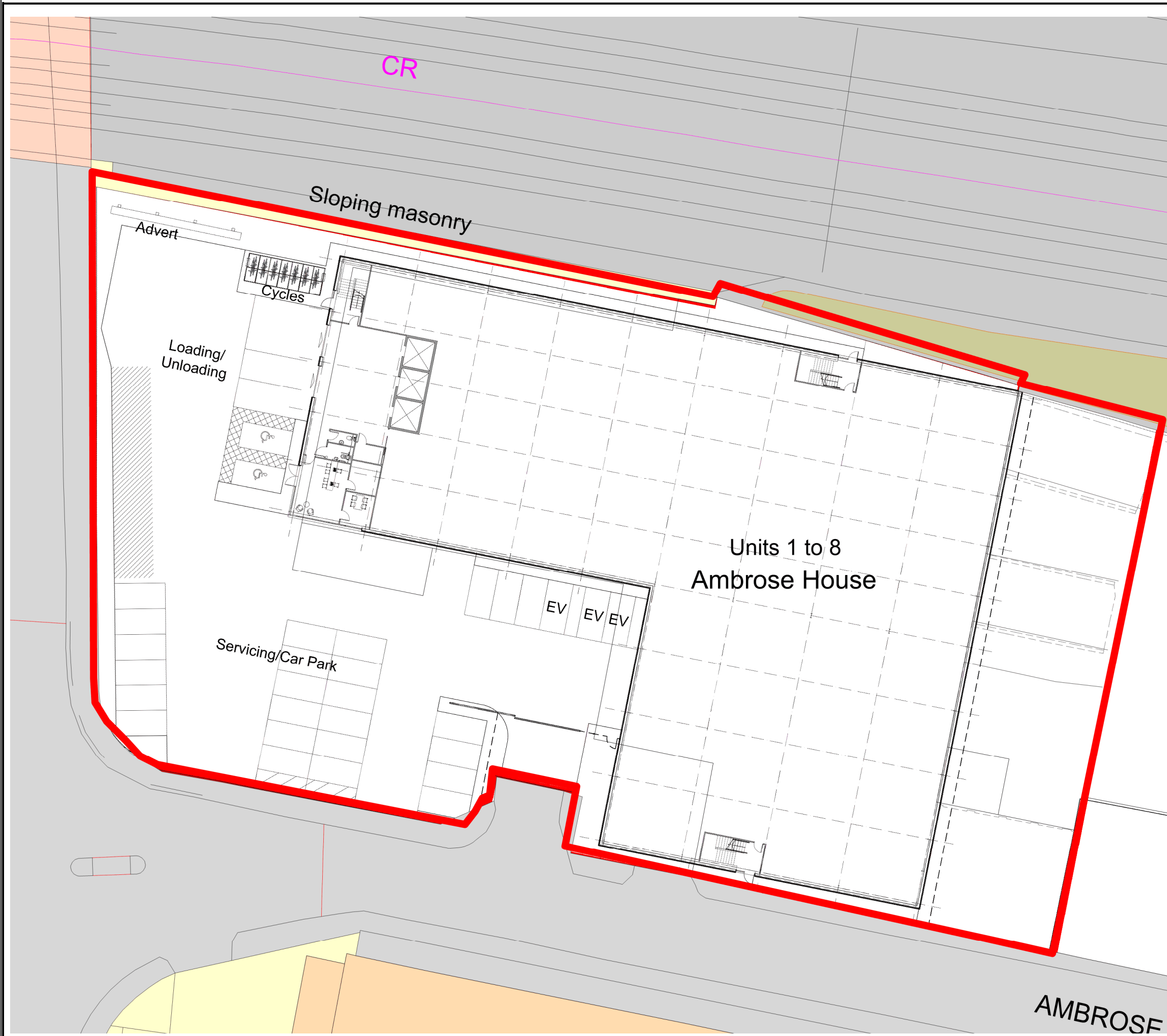


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A1. Site Plan

Site Name	Seaton House Stockport
Location	
GeoAssist Ref	6101/VAJ
Client	Storage World Self Storage & Workspace LLP
Planning Consultant	Thomasons
NGR (centre of site)	387260, 397200
Production Date	Jan 2023
Survey Method	
Surveyor	Others
Status	Final v1.00
Base Survey	OSGB36





A2. Proposed Plan

Site Name	Seaton House Stockport
Location	
GeoAssist Ref	6101/VAJ
Client	Storage World Self Storage & Workspace LLP
Planning Consultant	Thomasons
NGR (centre of site)	387260, 397200
Production Date	Jan 2023
Survey Method	
Surveyor	Others
Status	Final v1.00
Base Survey	OSGB36

Appendix B

B1 Exploratory Hole Logs

GeoAssist Limited Consultant: Thomasons Client: Storage World Self Storage & Workspace LLP	Exploratory Hole Record Sheet Project: Storage World Ambrose Street Location: Manchester		Ref: BH1 Sheet: 1					
	Equipment: Archway Dart Rig		Ground Level: 52.75 m.AOD Co-ordinates: Easting: 387241.3(m) Northing: 397217.2(m) Dates: 16/11/2022 to 16/11/2022					
Drilling Foreman: M Walton STRATUM DESCRIPTION Engineer/Geologist: M Benson		Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests Depth (m) from to	Sample Type/No	Blow Count N/(U)	Field Records

0	Grey/brown sandy gravel, brick and concrete fragments - MADE GROUND	(0.40) 0.40	52.35		0.30	C1		
	Stiff to very stiff brown with light grey gravelly sandy silty CLAY	(0.60) 1.00	51.75		0.80 1.00 1.20	D1 CP1 D2	9	TRLDCP Test CBR at 0.40m- 13%
1	Stiff to very stiff brown high to very high strength gravelly slightly sandy silty CLAY							Hand penetrometer at 1.20m - 164kPa
2					2.00	CP2	13	Hand penetrometer at 1.80m - >250kPa
3		(3.60)			3.00	CP3	13	Hand penetrometer at 2.50m - 220kPa
4		4.60	48.15		4.00	CP4	7	Hand penetrometer at 3.50m - 182kPa
5	Very stiff brown/grey very high strength gravelly sandy silty CLAY with occasional sand inclusions	(0.40) 5.00	47.75		4.90	CP5	9	Hand penetrometer at 4.50m - 144kPa Hand penetrometer at 4.80m - 219kPa
	Exploratory Hole complete at 5.00m							16/11/2022: On completion of exploratory hole at 5.00m. Casing at 2.00m. Standing water level Nil with casing. On withdrawal of casing groundwater/gas monitoring standpipe installed to 4.00m with response zone from 1.00m to 4.00m.
6								
7								
8								
9								
10								

Remarks: 16/11/2022: Inspection pit excavated to 1.00m depth to avoid services The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50
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GeoAssist Limited		Exploratory Hole Record Sheet				Ref: BH2	
Consultant: Thomasons		Project: Storage World Ambrose Street				Sheet: 1	
Client: Storage World Self Storage & Workspace LLP		Location: Manchester				Ground Level: NR m.AOD	
		Equipment: Archway Dart Rig				Co-ordinates: Easting: NR(m) Northing: NR(m)	
						Dates: 14/11/2022 to 14/11/2022	
Drilling Foreman: M Walton		Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests		Field Records
STRATUM DESCRIPTION Engineer/Geologist: M Benson					Depth (m) from to	Sample Type/No	
0 CONCRETE		0.10					
Brown sandy gravel with brick and sandstone fragments - MADE GROUND		0.20			0.40	C1	
Very soft to firm grey with black very low to medium strength inclusions very silty clay - MADE GROUND					0.50	CP1	9
1		(1.80)			0.90	D1	
					1.00	CP2	1
					1.50	CP3	4
2		2.00			2.00	CP4	10
Firm to stiff brown medium to high strength gravelly sandy silty CLAY with cobbles from 3.00 to 4.00m depth					2.20	D2	Hand penetrometer at 2.20m - 209kPa
3		(3.00)			3.00	CP5	15
							Hand penetrometer at 3.50m - >250kPa
4					4.00	CP6	13
							Hand penetrometer at 4.50m - 170kPa
5		5.00			4.90	CP7	26
Exploratory Hole complete at 5.00m							14/11/2022: On completion of exploratory hole at 5.00m. Casing at 2.00m. Standing water level Nil with casing. On withdrawal of casing exploratory hole backfilled and reinstated.
6							
7							
8							
9							
10							
Remarks: 14/11/2022: Concrete slab precored The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.						Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50	

GeoAssist Limited		Exploratory Hole Record Sheet					Ref: BH3	
		Project: Storage World Ambrose Street					Sheet: 1	
		Location: Manchester						
Consultant: Thomasons		Equipment: Archway Dart Rig			Ground Level: NR m.AOD			
Client: Storage World Self Storage & Workspace LLP					Co-ordinates: Easting: NR(m) Northing: NR(m)			
		Dates: 14/11/2022 to 14/11/2022						
Drilling Foreman: M Walton		Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests			Field Records
STRATUM DESCRIPTION					Depth (m) from to		Sample Type/No	
Engineer/Geologist: M Benson								

Remarks: 14/11/2022: Concrete slab precored The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50
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[illegible]

Remarks: 16/11/2022: Inspection pit excavated to 1.00m depth to avoid services The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50
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GeoAssist Limited		Exploratory Hole Record Sheet					Ref: BH5	
Consultant: Thomasons		Project: Storage World Ambrose Street Location: Manchester					Sheet: 1	
Client: Storage World Self Storage & Workspace LLP		Equipment: Archway Dart Rig					Ground Level: NR m.AOD Co-ordinates: Easting: NR(m) Northing: NR(m) Dates: 14/11/2022 to 14/11/2022	
Drilling Foreman: M Walton STRATUM DESCRIPTION Engineer/Geologist: M Benson		Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests Depth (m) from to Sample Type/No		Blow Count N/(U)	Field Records
0 CONCRETE		0.30						
Dark grey/brown sandy gravel with cinders, brick and timber fragments - MADE GROUND		(1.10)			0.50 0.50	CP1 C1	15	
1		1.40			1.00 1.00	CP2 D1	3	
Firm to stiff brown medium to high strength gravelly sandy silty CLAY		(0.60)			1.50 1.60	CP3 D2	7	Hand penetrometer at 1.60m - 160kPa
2 Very stiff brown very high strength gravelly sandy silty CLAY		2.00			2.00	CP4	10	Hand penetrometer at 2.50m - 187kPa
3		(3.00)			3.00	CP5	9	Hand penetrometer at 3.50m - 162kPa
4					4.00	CP6	8	Hand penetrometer at 4.50m - 170kPa
5		5.00			4.90	CP7	16	14/11/2022: On completion of exploratory hole at 5.00m. Casing at 2.00m. Standing water level Nil with casing. On withdrawal of casing exploratory hole backfilled and reinstated.
Exploratory Hole complete at 5.00m								
6								
7								
8								
9								
10								
Remarks: 14/11/2022: Concrete slab precored The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.							Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50	

GeoAssist Limited Consultant: Thomasons Client: Storage World Self Storage & Workspace LLP	Exploratory Hole Record Sheet Project: Storage World Ambrose Street Location: Manchester		Ref: BH6 Sheet: 1					
	Equipment: Archway Dart Rig		Ground Level: 51.86 m.AOD Co-ordinates: Easting: 387268.8(m) Northing: 397174(m) Dates: 15/11/2022 to 15/11/2022					
Drilling Foreman: M Walton STRATUM DESCRIPTION Engineer/Geologist: M Benson		Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests Depth (m) from to	Sample Type/No	Blow Count N/(U)	Field Records

0	CONCRETE	0.10	51.76								
	Brown sand, gravel and brick fragments - MADE GROUND	0.30	51.56			0.30	C1				
	Soft to firm brown/grey gravelly sandy silty clay - MADE GROUND	(0.70)				0.80	D1				
		1.00	50.86			1.00	CP1	1		Wet at 1.00m depth	
1	Very soft brown with grey gravelly sandy silty clay - MADE GROUND	(0.90)				1.40	D2				
		1.90	49.96								
2	Stiff brown high strength gravelly sandy silty CLAY					2.00	CP2	6		Hand penetrometer at 1.90m - 122kPa Hand penetrometer at 2.20m - 109kPa	
		(1.10)									
3	Brown silty fine to medium SAND	3.00	48.86			3.00	CP3	11		Hand penetrometer at 2.80m - 164kPa	
	Stiff brown high strength gravelly sandy silty CLAY	3.20	48.66							Wet from 3.20m depth	
		(0.80)								Hand penetrometer at 3.50m - 134kPa	
4	Medium dense brown with occasional black silty fine to medium SAND	4.00	47.86			4.00	CP4	12			
		(0.80)									
		4.80	47.06								
5	Brown/grey gravelly sandy silty CLAY	5.00	46.86			4.90	CP5	21			
	Exploratory Hole complete at 5.00m									15/11/2022: On completion of exploratory hole at 5.00m. Casing at 2.00m. Standing water level at 3.80m with casing. On withdrawal of casing groundwater/gas monitoring standpipe installed to 4.50m with response zone from 1.00m to 4.50m.	
6											
7											
8											
9											
10											

Remarks: 15/11/2022: Inspection pit excavated to 1.00m depth to avoid services The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:50
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GeoAssist Limited Consultant: Thomasons Client: Storage World Self Storage & Workspace LLP	Exploratory Hole Record Sheet Project: Storage World Ambrose Street Location: Manchester		Ref: TP1 Sheet: 1
	Equipment: Hand Excavation Methods		Ground Level: 53.04 m.AOD Co-ordinates: Easting: 387237.5(m) Northing: 397231.2(m) Dates: 16/11/2022 to 16/11/2022

Drilling Foreman: M Walton Engineer/Geologist: M Benson	STRATUM DESCRIPTION	Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests			Field Records
					Depth (m) from to	Sample Type/No	Blow Count N/(U)	
	Dark brown sandy gravel, brick fragments and sandstone cobbles - MADE GROUND	(0.50)			0.30	C1		
	Brown with light grey gravelly sandy silty CLAY	0.50	52.54					
	Base of Masonry Wall at 0.70m depth	0.80	52.24					Water ingress from 0.70m depth 16/11/2022: On completion of trial pit at 0.80m. Hole backfilled and reinstated
	Exploratory Hole complete at 0.80m							



Remarks: The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:25
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GeoAssist Limited Consultant: Thomasons Client: Storage World Self Storage & Workspace LLP	Exploratory Hole Record Sheet Project: Storage World Ambrose Street Location: Manchester		Ref: TP2 Sheet: 1
	Equipment: Hand Excavation Methods		Ground Level: 53.04 m.AOD Co-ordinates: Easting: 387268.4(m) Northing: 397225.2(m) Dates: 16/11/2022 to 16/11/2022

Drilling Foreman: M Walton Engineer/Geologist: M Benson	STRATUM DESCRIPTION	Depth (Thick) (m)	Reduced Level (mAOD)	Strata Legend/ Standpipe Backfill	Samples/Tests		Field Records
					Depth (m) from to	Sample Type/No	
	0 CONCRETE						
	Brown with light grey gravelly sandy silty CLAY	0.30	52.74				
	Base of Masonry Wall at 0.80m depth	(0.60)			0.60	C1	Water ingress from 0.70m depth
		0.90	52.14				16/11/2022: On completion of trial pit at 0.90m. Hole backfilled and reinstated
1	Exploratory Hole complete at 0.90m Note that datum level is where concrete meets wall						



Remarks: The groundwater conditions entered on the exploratory hole logs are those observed at the time of the drilling operations and the water level may not have reached equilibrium with the surrounding water level prior to the record being taken. Standing groundwater levels will be subject to seasonal variation or changes in local drainage conditions and could be higher at certain times of the year particularly after periods of heavy rainfall.	Logged: M Benson Date: 21/11/2022 Checked: M Richardson Date: 25/11/2022 Site Ref: 6101/VAJ Scale 1:25
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Appendix C

- C1 i2 Analytical Laboratory Test Results
- C2 Analysis of Results with Assessment Criteria



Matthew Benson
GeoAssist Ltd
Unit 4, Sheffield Street
Heaton Norris
Stockport
Cheshire
SK4 1RU

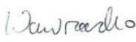
e: info@geoassist.co.uk

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

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e: reception@i2analytical.com

Analytical Report Number : 22-98238

Project / Site name:	Ambrose Street, Manchester	Samples received on:	22/11/2022
Your job number:	6101 VAJ	Samples instructed on/ Analysis started on:	22/11/2022
Your order number:	2221121	Analysis completed by:	08/12/2022
Report Issue Number:	1	Report issued on:	08/12/2022
Samples Analysed:	9 soil samples		


Signed: _____

Joanna Wawrzeczko
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

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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.

Analytical Report Number: 22-98238
Project / Site name: Ambrose Street, Manchester
Your Order No: 2221121

Lab Sample Number	2508226	2508227	2508228	2508229	2508230
Sample Reference	BH1	BH2	BH3	BH3	BH4
Sample Number	C1	C1	C1	C1	C1
Depth (m)	0.30	0.40	0.50	1.40	0.30
Date Sampled	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	6.2	4.5
Moisture Content	%	0.01	NONE	6.4	12
Total mass of sample received	kg	0.001	NONE	0.4	0.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Hard/Cement Type Material	Chrysotile- Hard/Cement Type Material, Loose Fibrous Debris	Chrysotile- Loose Fibrous Debris	-	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MJN	MJN	MJN	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.3	7.9	7.7	7.7	8.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	1	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO ₄	%	0.005	MCERTS	0.044	1.2	0.362	0.06	0.031
Sulphide	mg/kg	1	NONE	69	18	81	2.1	< 1.0
Total Sulphur	%	0.005	MCERTS	0.039	0.406	0.24	0.038	0.016

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	NONE	0.22	0.07	1.4	0.11	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	0.26	< 0.05	0.29	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.51	< 0.05	0.69	< 0.05	< 0.05
Fluorene	mg/kg	0.05	NONE	0.59	< 0.05	0.84	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	NONE	4.9	0.29	9.4	0.51	< 0.05
Anthracene	mg/kg	0.05	NONE	1.6	< 0.05	2.3	0.06	< 0.05
Fluoranthene	mg/kg	0.05	NONE	9.5	0.48	18	0.9	< 0.05
Pyrene	mg/kg	0.05	NONE	8.3	0.48	17	1.1	< 0.05
Benzo(a)anthracene	mg/kg	0.05	NONE	4	0.24	8.9	0.54	< 0.05
Chrysene	mg/kg	0.05	NONE	3.1	0.24	9.3	0.76	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	3.3	0.25	11	0.47	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	2.2	0.13	5.6	0.35	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	3.3	0.22	10	0.48	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	1.9	< 0.05	6.4	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	0.38	< 0.05	1.3	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	2.4	< 0.05	6.7	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	46.2	2.4	110	5.3	< 0.80
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Analytical Report Number: 22-98238
Project / Site name: Ambrose Street, Manchester
Your Order No: 2221121

Lab Sample Number				2508226	2508227	2508228	2508229	2508230
Sample Reference				BH1	BH2	BH3	BH3	BH4
Sample Number				C1	C1	C1	C1	C1
Depth (m)				0.30	0.40	0.50	1.40	0.30
Date Sampled				21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	4.2	22	110	33	7.4
Barium (aqua regia extractable)	mg/kg	1	MCERTS	84	230	770	150	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.36	0.56	2.7	1.6	1.2
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	1.9	3.7	1.5	0.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	< 0.2	37	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	58	15	58	22	29
Copper (aqua regia extractable)	mg/kg	1	MCERTS	37	49	440	100	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	44	100	810	140	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	1	0.5	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	20	87	30	32
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	23	24	100	39	31
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	95	310	5200	120	58

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	-	-	-	< 1.0	-
Toluene	µg/kg	1	NONE	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	NONE	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	NONE	-	-	-	< 1.0	-
o-xylene	µg/kg	1	NONE	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	-	-	< 1.0	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	NONE	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	NONE	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	NONE	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	NONE	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	-	-	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	NONE	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	NONE	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10	-
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10	-
TPH Total C5 - C40 _{EH_CU+HS_ID_TOTAL}	mg/kg	10	NONE	-	-	-	< 10	-

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

Analytical Report Number: 22-98238
Project / Site name: Ambrose Street, Manchester
Your Order No: 2221121

Lab Sample Number	2508231	2508232	2508233	2508234
Sample Reference	BH5	BH6	TP1	TP2
Sample Number	C1	C1	C1	C1
Depth (m)	0.50	0.30	0.30	0.60
Date Sampled	21/11/2022	21/11/2022	21/11/2022	21/11/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	19
Total mass of sample received	kg	0.001	NONE	0.4

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose Fibres	-	Chrysotile- Hard/Cement Type Material	-
Asbestos in Soil	Type	N/A	ISO 17025	Detected	-	Detected	-
Asbestos Analyst ID	N/A	N/A	N/A	MJN	N/A	MJN	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	8.7	8.9	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Thiocyanate as SCN	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphate as SO ₄	%	0.005	MCERTS	2.14	0.036	0.051	0.018
Sulphide	mg/kg	1	NONE	32	< 1.0	65	2.3
Total Sulphur	%	0.005	MCERTS	1.14	0.019	0.089	0.009

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	NONE	0.91	0.08	0.47	< 0.05
Acenaphthylene	mg/kg	0.05	NONE	< 0.05	< 0.05	0.51	< 0.05
Acenaphthene	mg/kg	0.05	NONE	0.47	< 0.05	1.6	< 0.05
Fluorene	mg/kg	0.05	NONE	0.14	< 0.05	1.5	< 0.05
Phenanthrene	mg/kg	0.05	NONE	3.3	0.45	14	< 0.05
Anthracene	mg/kg	0.05	NONE	0.49	0.09	5.6	< 0.05
Fluoranthene	mg/kg	0.05	NONE	1.8	0.53	32	< 0.05
Pyrene	mg/kg	0.05	NONE	1.7	0.57	27	< 0.05
Benzo(a)anthracene	mg/kg	0.05	NONE	0.74	0.39	14	< 0.05
Chrysene	mg/kg	0.05	NONE	0.76	0.45	13	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	NONE	0.68	0.4	13	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	NONE	0.35	0.26	11	< 0.05
Benzo(a)pyrene	mg/kg	0.05	NONE	0.65	0.49	16	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	NONE	< 0.05	0.25	10	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	NONE	< 0.05	< 0.05	2.1	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	NONE	< 0.05	0.37	11	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	NONE	11.9	4.33	172	< 0.80
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Analytical Report Number: 22-98238
Project / Site name: Ambrose Street, Manchester
Your Order No: 2221121

Lab Sample Number				2508231	2508232	2508233	2508234
Sample Reference				BH5	BH6	TP1	TP2
Sample Number				C1	C1	C1	C1
Depth (m)				0.50	0.30	0.30	0.60
Date Sampled				21/11/2022	21/11/2022	21/11/2022	21/11/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Heavy Metals / Metalloids							
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	99	8.1	7.8	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	210	160	130	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	3.2	1.2	0.8	1.3
Boron (water soluble)	mg/kg	0.2	MCERTS	5.6	1.7	1.5	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.6	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	28	89	30
Copper (aqua regia extractable)	mg/kg	1	MCERTS	240	28	64	30
Lead (aqua regia extractable)	mg/kg	1	MCERTS	280	15	72	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	3.5	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	45	34	21	41
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	64	30	41	33
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	58	170	63

Monoaromatics & Oxygenates

Benzene	µg/kg	1	NONE	-	-	-	< 1.0
Toluene	µg/kg	1	NONE	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	NONE	-	-	-	< 1.0
p & m-xylene	µg/kg	1	NONE	-	-	-	< 1.0
o-xylene	µg/kg	1	NONE	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	NONE	-	-	-	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	NONE	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	NONE	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	NONE	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	NONE	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC35 - EC40 _{EH_CU_ID_AL}	mg/kg	10	NONE	-	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.001	NONE	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	NONE	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	NONE	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10
TPH-CWG - Aromatic >EC35 - EC40 _{EH_CU_ID_AR}	mg/kg	10	NONE	-	-	-	< 10
TPH Total C5 - C40 _{EH_CU+HS_ID_TOTAL}	mg/kg	10	NONE	-	-	-	< 10

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

Analytical Report Number : 22-98238

Project / Site name: Ambrose Street, 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 *
2508226	BH1	C1	0.3	Brown clay and sand with stones.
2508227	BH2	C1	0.4	Brown clay and sand with stones.
2508228	BH3	C1	0.5	Brown clay and sand with gravel.
2508229	BH3	C1	1.4	Brown clay and sand with gravel.
2508230	BH4	C1	0.3	Brown clay and sand with gravel.
2508231	BH5	C1	0.5	Brown clay and sand with gravel.
2508232	BH6	C1	0.3	Brown clay and sand with gravel.
2508233	TP1	C1	0.3	Brown clay and sand with gravel.
2508234	TP2	C1	0.6	Brown clay and sand with gravel.

Analytical Report Number : 22-98238

Project / Site name: Ambrose Street, 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
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.	L038-PL	D	MCERTS
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	A001-PL	D	ISO 17025
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	L038-PL	D	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	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 (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	NONE
Thiocyanate in soil	Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer).	In-house method	L082-PL	D	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
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 (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	NONE
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	NONE
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038 PL	D	MCERTS

Analytical Report Number : 22-98238
Project / Site name: Ambrose Street, 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
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 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

Soils Risk Assessment

Site Reference: 6101 VAJ
 Project Site: Storage World Ambrose Street
 Project Location: Manchester
 Client: Storage World Self Storage & Workspace LLP

i2 Reference	Commercial	BH1 C1	BH2 C1	BH3 C1	BH3 C1	BH4 C1	BH5 C1	BH6 C1	TP1 C1	TP2 C1
Customer Sample Ref:	C4SL / S4UL	0.30	0.40	0.50	1.40	0.30	0.50	0.30	0.30	0.60
	SOM 1% GAC	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022	21/11/2022
Determinand	LQM II									
Arsenic	640	4.2	22	110	33	7.4	99	8.1	7.8	12
Boron (water-soluble)	240000	0.7	1.9	3.7	1.5	0.7	5.6	1.7	1.5	0.6
Cadmium	410	0.5	0.2	37	0.2	0.2	0.2	0.2	0.6	0.2
Chromium*	8600	58	15	58	22	29	24	28	89	30
Chromium VI	49	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Copper	68000	37	49	440	100	28	240	28	64	30
Cyanide(Total)	-	1	1	1	1	1	1	1	1	1
Cyanide(free)**	34	1	1	1	1	1	1	1	1	1
Lead	2300	44	100	810	140	13	280	15	72	14
Mercury	58	0.3	0.3	1	0.5	0.3	3.5	0.3	0.3	0.3
Nickel	980	11	20	87	30	32	45	34	21	41
pH	-	9.3	7.9	7.7	7.7	8.6	8.1	8.7	8.9	8.1
Phenols(Mono)	3200	1	1	1	1	1	1	1	1	1
Selenium	12000	1	1	1	1	1	1	1	1	1
SO4(Total)	-	0.044	1.2	0.362	0.06	0.031	2.14	0.036	0.051	0.018
Sulphide	-	69	18	81	2.1	1	32	1	65	2.3
Sulphur(Free)	-	0.039	0.406	0.24	0.038	0.016	1.14	0.019	0.089	0.009
Thiocyanate	-	5	5	5	5	5	5	5	5	5
Zinc	730000	95	310	5200	120	58	180	58	170	63
Acenaphthene	100000	0.51	0.05	0.69	0.05	0.05	0.47	0.05	1.6	0.05
Acenaphthylene	100000	0.26	0.05	0.29	0.05	0.05	0.05	0.05	0.51	0.05
Anthracene	540000	1.6	0.05	2.3	0.06	0.05	0.49	0.09	5.6	0.05
Benzo(a)Anthracene	-	4	0.24	8.9	0.54	0.05	0.74	0.39	14	0.05
Benzo(a)Pyrene SM	77	3.3	0.22	10	0.48	0.05	0.65	0.49	16	0.05
Benzo(b)Fluoranthene	-	3.3	0.25	11	0.47	0.05	0.68	0.4	13	0.05
Benzo(ghi)Perylene	-	2.4	0.05	6.7	0.05	0.05	0.05	0.37	11	0.05
Benzo(k)Fluoranthene	-	2.2	0.13	5.6	0.35	0.05	0.35	0.26	11	0.05
Chrysene	-	3.1	0.24	9.3	0.76	0.05	0.76	0.45	13	0.05
Dibenzo(ah)Anthracene	-	0.38	0.05	1.3	0.05	0.05	0.05	0.05	2.1	0.05
Fluoranthene	23000	9.5	0.48	18	0.9	0.05	1.8	0.53	32	0.05
Fluorene	71000	0.59	0.05	0.84	0.05	0.05	0.14	0.05	1.5	0.05
Indeno(123-cd)Pyrene	-	1.9	0.05	6.4	0.05	0.05	0.05	0.25	10	0.05
Naphthalene	1100	0.22	0.07	1.4	0.11	0.05	0.91	0.08	0.47	0.05
Phenanthrene	23000	4.9	0.29	9.4	0.51	0.05	3.3	0.45	14	0.05
Pyrene	54000	8.3	0.48	17	1.1	0.05	1.7	0.57	27	0.05
PAH(total)	500	46.2	2.4	110	5.3	0.8	11.9	4.33	172	0.8
Asbestos	Not-detected	Chrysotile-Hard/Cement Type Material	Chrysotile-Hard/Cement Type Material, Loose Fibrous Debris	Chrysotile-Loose Fibrous Debris	-	-	Chrysotile-Loose Fibres	-	Chrysotile-Hard/Cement Type Material	-
TPH (C6-C8 aliphatic)	530	-	-	-	0.001	-	-	-	-	0.001
TPH (C8-C10 aliphatic)	150	-	-	-	0.001	-	-	-	-	0.001
TPH (C10-C12 aliphatic)	760	-	-	-	1	-	-	-	-	1
TPH (C12-C16 aliphatic)	4300	-	-	-	2	-	-	-	-	2
TPH (C16-C21 aliphatic)	110000	-	-	-	8	-	-	-	-	8
TPH (C21-C35 aliphatic)	110000	-	-	-	8	-	-	-	-	8
TPH (C5-C7 aromatic)	300	-	-	-	0.001	-	-	-	-	0.001
TPH (C7-C8 aromatic)	660	-	-	-	0.001	-	-	-	-	0.001
TPH (C8-C10 aromatic)	190	-	-	-	0.001	-	-	-	-	0.001
TPH (C10-C12 aromatic)	380	-	-	-	1	-	-	-	-	1
TPH (C12-C16 aromatic)	660	-	-	-	2	-	-	-	-	2
TPH (C16-C21 aromatic)	930	-	-	-	10	-	-	-	-	10
TPH (C21-C35 aromatic)	1700	-	-	-	10	-	-	-	-	10
Benzene	2.4	-	-	-	1	-	-	-	-	1
Toluene	7.5	-	-	-	1	-	-	-	-	1
EthylBenzene	260	-	-	-	1	-	-	-	-	1
M/P Xylene	310	-	-	-	1	-	-	-	-	1
O Xylene	330	-	-	-	1	-	-	-	-	1

All Units mg/kg unless otherwise stated

*Criteria Assumes Chromium III

**Criteria is derived considering acute effects on 1-2yo Female Receptor ingesting a single dose of 3g of soil

**Criteria is derived considering Total TPH (C10 to C35) is formed entirety of a 50:50 Aliphatic and Aromatic Split C8-C10 range

Basis of Assessment Criteria: EA 2005 WAC (Human Health Value) C4SL
 LQM S4UL Atrisk 06