

Site: Hilton Lane, Prestwich
Report: Vapour Assessment
Date: March 2023

1 INTRODUCTION

LK Consult Ltd (LKC) has been commissioned by Leo Prestwich Limited to carry out a Vapour Assessment for Hilton Lane, Prestwich. The investigation was undertaken in support of the redevelopment of the site for residential end use.

The following work has previously been undertaken:

- » Supplementary Ground Investigation, undertaken by LKC (Ref: LKC 21 1545-03, dated January 2023).
- » Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy report, undertaken by LKC (Ref: LKC 21 1545-02, dated 24th May 2022).
- » Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: CL-602-LKC 21 1545-01, dated October 2021). This report included a summary of a Phase 1 Desk Study Investigation Report undertaken by Geo-investigate Ltd in 2017.

During the Phase 2 Geo Environmental Investigation undertaken by LKC, elevated naphthalene concentrations were identified in WS102 (0.9-1.5m) and WS104 (0.0-0.6mm) at levels of 100mg/kg and 14mg/kg respectively. Further investigation and assessment of the naphthalene contamination present in these areas was recommended. This work is documented in this report.

1.1 Site Details

A summary of the site details is presented in Table 1-1. Figure 1 shows the site location and boundary. Figure 2 indicates the proposed development.

Location	Southwest end of Butterstile Close, south of Hilton Lane, Prestwich, Manchester. Centred at approximate National Grid Reference 380930E 402410N.
Area	2,000m ² .
Topography	67-69 metres Above Ordnance Datum (AOD). Site slopes gently from southeast-northwest. Hilton Lane situated higher than site.
Proposed Development	Residential housing with gardens / soft landscaping.

Table 1-1. Summary of site details.

2 SITE PREPARATION WORKS

DHI Excavations Ltd have undertaken the removal of the hotspot of contamination in WS102 where elevated naphthalene was encountered. An area around the sampling location was taped off and excavated to underlying natural ground and the arisings disposed of offsite. This has been documented by DHI Excavations Ltd in a reported titled 'Hot-Spot Segregation Spoil Disposal'. No confirmatory soil analysis was undertaken following removal of the hotspot.

In the area of elevated naphthalene in WS104, site levels have been reduced to natural ground. No confirmatory soil analysis was undertaken following removal of the hotspot. Photographs from the client are provided in Table 2-1 below:

	
Photograph 1: Site level reduction in areas of Plots 6 to 8.	Photograph 2: Site level reduction.
	
Photograph 3: Plots 6 to 8.	Photograph 4: Ground conditions adjacent to Plots 6 to 8.

Table 2-1: Site enabling works photographs.

3 GROUND INVESTIGATION

3.1 Site Investigation Design and Methodology

As no confirmatory soil analysis was undertaken following removal of the hotspots, a ground investigation was carried out on 13th March 2022 and comprised the following:

- » 12no. hand dug trial pits excavated to 0.3-1.1 metres below ground level (mbgl) (ref. HD301 to HD312).

All site investigation locations are shown in Figure 3. Soil profile logs are provided in Appendix A.

3.2 Ground Conditions

Made Ground

Made ground generally comprised gravelly silty sand or gravelly sandy silt with brick fragments. An exception to this is HD307 where the made ground was predominantly ash and clinker material.

Tarmacadam fragments were identified in the made ground in HD301.

Ash was noted within the made ground in HD309 and HD310.

The made ground was not bottomed out in sampling locates HD307 to HD311.

Natural Strata

Orangish brown fine to coarse sand was identified in HD301 to HD306 and HD312 at between 0.1 and 0.75mbgl.

3.3 Soil Sampling

Standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation¹.

Soil samples of approximately 500g were recovered in amber jars, amber vials for volatile analysis and plastic tubs. All the samples were labelled and stored in cool boxes prior to being collected by courier at the end of the day for delivery to the Chemtest laboratory in Newmarket for chemical testing. If collection was not possible the same day then samples were stored in the sample storage fridge at the LK Group offices below 4°C. Samples were tracked using appropriate Chain of Custody forms provided by Chemtest.

Many of the contamination tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix B. Table 3-1 shows the soil testing undertaken.

¹ EA (2000). "Technical Aspects of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.

Suites and Contaminants	No. Samples	Location & Depth	Justification
Speciated PAHs and SOM	12	HD301 0.0-0.75m HD302 0.1-0.65m HD303 0.0-0.15m HD304 0.0-0.2m HD305 0.0-1.0m HD306 0.0-0.4m HD307 0.0-0.7m HD308 0.0-0.2m HD309 0.0-1.0m HD310 0.0-1.0m HD311 0.0-1.0m HD312 0.0-0.3m	Tests of made ground encountered in each sampling location to enable the risk from naphthalene vapour to be assessed.

Table 3-1. Summary of soil sample testing undertaken.

Notes: PAH=polycyclic aromatic hydrocarbons, SOM=Soil Organic Matter.

3.4 Soil Risk Assessment

Methodology

With regards to the soil risk assessment LKC will use the following hierarchy:

- Category 4 Screening Levels (C4SLs).
- LQM Suitable 4 Use Levels (S4ULs).

C4SLs were published in 2013^{2,3}. The change to the contaminated land guidance has changed the evaluation of risk from 'minimal' (referred to as Health Criteria values (HCVs))⁴ used to generate Soil Guideline Values (SGVs) to 'low' (referred to as Lowest Level of Toxicological Concern (LLTCs)). The policy companion document and supporting letter by Defra, dated 3rd September 2014, states that C4SLs '*could be used under the planning regime, as well as within Part 2A*'. Based on these comments LKC considers the justifications and assumptions used to generate 'low' risk are suitable for the planning regime.

Where no C4SLs have been generated LKC will use the LQM S4ULs⁵. Similar assumptions and land uses to C4SLs have been used. However, toxicological information has been based on 'minimal risk' as per previous guidelines and assumptions^{6,7,8,9}.

LKC consider the main risk drivers for PAHs are benzo(a)pyrene (B(a)P) and naphthalene. This is due to B(a)P possibly being a carcinogen and most toxic of the PAHs^{10,11} and naphthalene the most volatile and soluble¹². The new C4SLs indicate B(a)P as a surrogate marker for carcinogenic PAHs, if it falls within appropriate limits, since the risk from other non-

² Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

³ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

⁴ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

⁵ LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

⁶ EA (2008). "Updated Technical Background to the CLEA Model." Science Report – SC050021/SR3.

⁷ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

⁸ EA (2008). "A Review of Body Weight and Height Data used within the Contaminated Land Exposure Assessment Model (CLEA)." Project SC050021/Technical Review 1.

⁹ EA (2009). "Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values." Science report SC050021/SR7.

¹⁰ EA (2002). "Contaminants in Soils: Collation of Toxicological Data and Intake Values for Humans. Benzo[a]pyrene." R&D Publication TOX2.

¹¹ USEPA (1984). "Health Effects Assessment of Polycyclic Aromatic Hydrocarbons (PAHs). EPA 540/1-86-013."

¹² EA (2003). "Review of the Fate and Transport of Selected Contaminants in the Soil Environment." Draft technical report P5-079/TR1.

carcinogenic PAHs are considered negligible¹³. For B(a)P to be used as a surrogate marker it should follow the profile described by the HPA (2008)¹⁴ and CL:AIRE (2013). Naphthalene will be treated separately using the LQM S4ULs.

The proposed development is for residential houses with gardens, therefore the assessment criteria for 'residential with plant uptake' has been used.

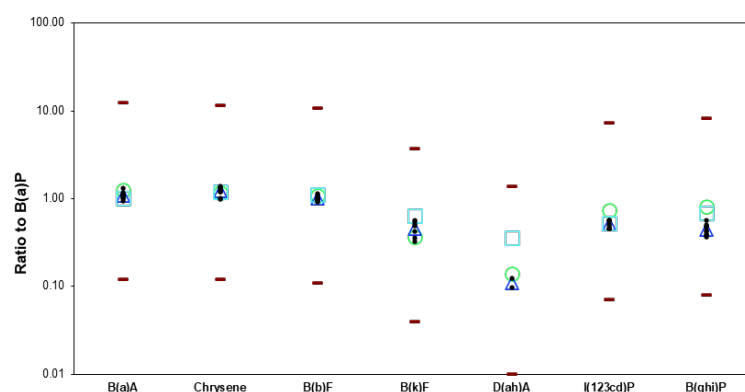
All criteria have been generated using the CLEA V1.06 model¹⁵ based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.

A summary of the generic assessment criteria is provided in Appendix C.

B(a)P as Surrogate Marker

Based on the above assumption for PAHs, LKC undertook an assessment of the data for the site with regards to using B(a)P as a surrogate marker for carcinogenic PAHs as per HPA and CL:AIRE guidelines. The primary toxicological study related to Culp *et al.*¹⁶, which was based on coal tar mixtures (>80,000mg/kg of total PAHs) fed in food to mice over a two-year carcinogenicity study.

Graph 3-1 summarises the study site data with respect to how the ratios of carcinogenic PAHs relate to B(a)P, within the confidence limits provided in the HPA document.



Graph 3-1: The ratio of PAH to B(a)P in soil for all available data at the site based on 10 samples (where values were >LOD to allow the calculation of a ratio).

Notes:

B(a)P=Benzo(a)pyrene; D(ah)A=Dibenzo(ah)anthracene; B(a)A=Benzo(a)anthracene; B(b)F=Benzo(b)fluoranthene; B(k)F=Benzo(k)fluoranthene; I(123cd)P=Indeno(123cd)pyrene; B(ghi)P=Benzo(ghi)perylene
 ● =Ratio to B(a)P for all data; ○ =Mean ratio to B(a)P for Culp data; △ =Mean ratio to B(a)P from all data at the site
 □ =Mean ratio to B(a)P for UK data presented by HPA; — =Upper and Lower limits (order of magnitude from Culp data)

All the data points that could be used to calculate ratios fall inside the upper or lower limits.

Based on this distribution of data LKC considers B(a)P can be used as a surrogate marker for carcinogenic PAHs and the C4SL criteria is suitable for this dataset.

¹³ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

¹⁴ HPA (2010). "HPA Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)." Version 3.

¹⁵ EA (2008). "CLEA Software (Version 1.05) Handbook." Science Report – SC050021/SR4.

¹⁶ Culp, S; Gaylor, D; Sheldon, W; Goldstein, L and Beland, F (1998). "A Comparison of Tumours Induced by Coal Tar and Benzo-a-pyrene in a 2-Year Bioassay." *Carcinogenesis*. Vol 19, no. 1, pp. 117-124.

Soil Results Comparison against Assessment Criteria

Results have been compared to the relevant assessment criteria and no elevated contaminants were identified.

Risk from Inhalation of Vapours

No visual / olfactory evidence of volatile contaminants was identified during the investigation. Confirmatory soil analysis did not detect elevated naphthalene concentrations, with only one sample reporting concentrations above detection limits.

Although the made ground was not bottomed out in all locations, samples were collected to 1.0m below ground level in areas of deeper deposits. The risk from deeper made ground is not considered significant since the CLEA model assumes the contaminant sits at shallow depth directly below the building and that vapour velocities decrease rapidly with increasing distance from the building¹⁷. In addition, the subfloor void required for the Plots 1-5 where deeper fill materials are present will provide a level of protection from any remnant vapour migration.

LKC therefore consider the probability of volatile contaminants affecting site users as unlikely. The consequence is expected to be medium, giving a low risk and no remediation is required with respect to vapours.

4 CONCLUSIONS

LKC has completed additional site investigation to confirm the risk from naphthalene contamination to the proposed properties. Given the site enabling works undertaken and the confirmatory soil analysis provided by LKC, there is not considered to be a risk of vapours to the proposed buildings and if present previously has been removed. Therefore, no specific remedial measures are required.

Outstanding remedial requirements for the site such as garden cover systems and gas protection measures, as documented in the remedial strategy, should be undertaken and documented in a Site Completion Report.

Report Prepared By:

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Principal Consultant

Report Reviewed By:

Paul Quimby
Director

Enc:

Figures

Appendix A: Soil Profile Logs

Appendix B: Certificates of Analysis

Appendix C: Generic Assessment Criteria Values

Disclaimer

This report has been prepared by LKC who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant experienced in preparing reports of a similar scope. However, to the extent that the report is based on or relies upon information contained in records, reports or other materials provided to LKC which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is issued on the condition that LKC will not be held liable for any loss arising from ground conditions between sampling points (i.e. boreholes/trial pits/hand augers/surface samples) which have not been shown by

¹⁷ EA (2004). "Update on Estimating Vapour Intrusion into Buildings." Briefing Note 2.

the sampling points or related testing carried out during the investigation, nor for any loss arising from conditions below the maximum depth of the investigation, or for any works done to the garden areas following the date of inspection. Opinions on such conditions, where given, are for general guidance only.

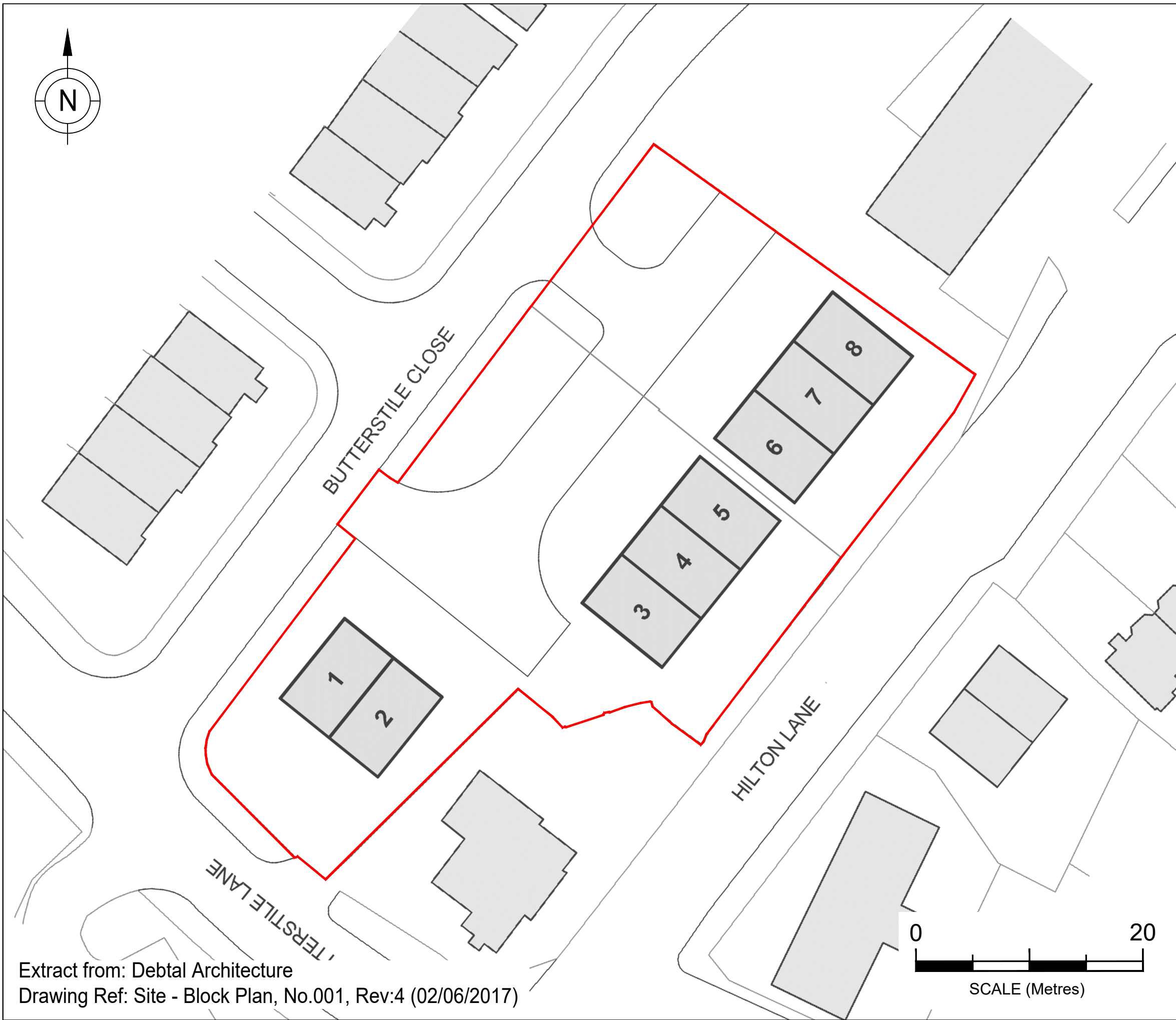
Other works including *inter alia* hotspot removal, drainage, soil texture, permitting, invasive species management and geotechnical requirements are out with this scope and should be dealt with by others.

This report is prepared solely for the benefit of Leo Prestwich Ltd. It may not be relied upon by, or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full. Those using this information in subsequent assessments or evaluations do so at their own risk.

Figures



Client: Leo Property Ltd				Title: Site Location & Boundary Plan			
Site: Hilton Lane, Butterstile Close, Prestwich				Scale (see scale bar): 1:25,000 & 1:1,500 @ A4			
Job No.: LKC 21 1545	Drawn By: HM	Checked By: PQ	Drawn: Feb 2021	Figure: 1			
				Revision:			



KEY

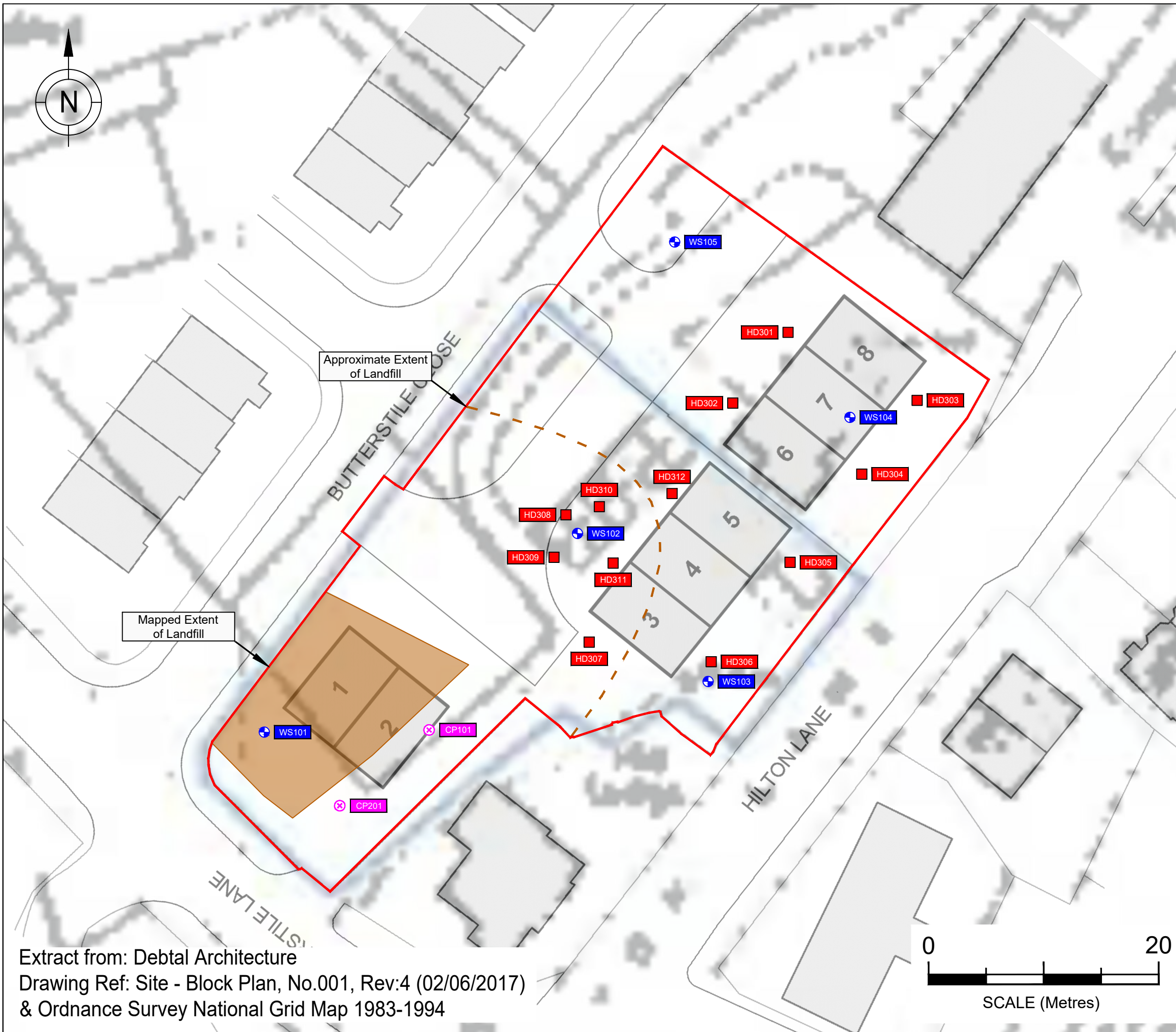
 Site Boundary

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.



Client:				Leo Property Ltd	
Site:				Hilton Lane, Butterstile Close, Prestwich	
Title:				Proposed Development Plan	
Job No.:		Scale (See Scale Bar):		Figure:	Revision:
LKC 21 1545		See Scale Bar		2	
Drawn By:	Checked By:	Drawn:			
AC	HM	Oct 2021			

Extract from: Debtal Architecture
Drawing Ref: Site - Block Plan, No.001, Rev:4 (02/06/2017)



KEY

- Site Boundary
- Window Sample Borehole (WS)
- Cable Percussive Borehole (CP)
- Hand Dug Trial Pit (HD)
- Landfill (Ordnance Survey Map 1:2,500, 1953-1954)
- Approximate Extent of Landfill

Sampling Locations and features annotated by LK Consult Ltd are approximate and are based upon observed measurements unless otherwise stated. Do not scale from this drawing and work from marked dimensions only. All dimensions and features should be confirmed on site by the Contractor. Where this drawing includes information provided to LK Consult Ltd by others, LK Consult Ltd gives no warranty, representation or assurance as to the accuracy of such information.

Client: **Leo Property Ltd**

Site: **Hilton Lane, Butterstile Close, Prestwich**

Title: **Site Investigation Location Plan**

Job No.: LKC 21 1545	Scale (See Scale Bar): See Scale Bar	Figure: 3	Revision: C
Drawn By: AC	Checked By: FP	Drawn: Mar 2023	

Extract from: Debtal Architecture
Drawing Ref: Site - Block Plan, No.001, Rev:4 (02/06/2017)
& Ordnance Survey National Grid Map 1983-1994

Appendix A – Soil Profile Logs

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.90m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.75	ES				(0.75)	MADE GROUND: Brown gravelly silty SAND with occasional tarmacadam fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone and limestone.		
					0.75 (0.15)	Between 0.60-0.75mbgl. Lens of tarmacadam fragments. Orangish brown fine to coarse SAND.		
					0.90	Complete at 0.90m		


Remarks

Trial pit completed in natural strata at 0.90mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD301

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.75m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

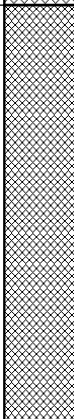
13/03/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.65	ES							
					(0.10)	MADE GROUND: Grey sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular comprising limestone.		
					0.10	MADE GROUND: Brown gravelly sandy SILT with occasional brick fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone and limestone.		
					(0.55)			
					0.65 (0.10)	Orangish brown fine to coarse SAND.		
					0.75	Complete at 0.75m		


Remarks

Trial pit completed in natural strata at 0.75mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD302

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.35m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**
LKC 21 1545

Location
Dates

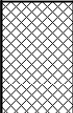
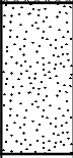
13/03/2023

Engineer

LKC

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.15	ES				(0.15)	MADE GROUND: Brown gravelly sandy SILT with occasional brick fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone and limestone.		
					0.15 (0.20)	Orangish brown fine to coarse SAND.		
					0.35	Complete at 0.35m		


Remarks

Trial pit completed in natural strata at 0.35mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD303

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.40m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

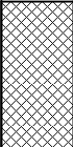
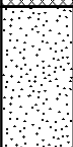
13/03/2023

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.20	ES					MADE GROUND: Light brown gravelly silty SAND with rare brick. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone.		
					(0.20)	Orangish brown fine to coarse SAND.		
					0.20			
					(0.20)			
					0.40	Complete at 0.40m		


Remarks

Trial pit completed in natural strata at 0.40mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD304

[illegible]

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.45m

Ground Level (mOD)
Client

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**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

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Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.40	ES					MADE GROUND: Light brown gravelly silty SAND with occasional rootlets and rare brick fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising sandstone.		
					(0.40)			
					0.40 (0.05) 0.45	Orangish brown fine to coarse SAND.		
						Complete at 0.45m		


Remarks

Trial pit completed in natural strata at 0.45mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD306

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.70m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

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Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.70	ES				(0.10)	MADE GROUND: Greyish brown sandy GRAVEL with rare brick fragments. Sand is fine to coarse. Gravel is fine to medium, subangular comprising limestone.		
					0.10	MADE GROUND: Black gravelly SAND of predominantly ash and clinker of fine to coarse grainsize.		
					(0.60)			
					0.70	Complete at 0.70m		


Remarks

Trial pit terminated in made ground at 0.70mbgl due to cobble.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKc 21 1545.HD307

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.70m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

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Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.20	ES					MADE GROUND: Black gravelly sandy SILT with occasional brick fragments and rootlets. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising predominantly sandstone and limestone.		
					(0.70)			
					0.70	Complete at 0.70m		


Remarks

Trial pit terminated in made ground at 0.70mbgl due to cobble.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKC 21 1545.HD308

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 1.10m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	ES					MADE GROUND: Black gravelly sandy SILT with occasional brick fragments, ash and rootlets. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising predominantly sandstone and limestone.		
					(1.10)			
					1.10	Complete at 1.10m		


Remarks

Trial pit terminated in made ground at 1.10mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKC 21 1545.HD309

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 1.10m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	ES					MADE GROUND: Black gravelly sandy SILT with occasional brick, ash and rootlets. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising predominantly sandstone and limestone.		
					(1.10)			
					1.10	Complete at 1.10m		


Remarks

Trial pit complete in made ground at 1.10mbgl
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKC 21 1545.HD 310

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 1.00m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

13/03/2023

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	ES					MADE GROUND: Black gravelly sandy SILT with rare brick. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising predominantly sandstone and limestone.		
					(1.00)			
					1.00	Complete at 1.00m		


Remarks

Trial pit complete in made ground at 1.00mbgl.
No groundwater encountered.
Trial pit stable.

Scale (approx)

1:10

Logged By

FP

Figure No.

LKC 21 1545.HD 311

Excavation Method

Hand excavated trial pit.

Dimensions

0.30m x 0.30m x 0.95m

Ground Level (mOD)
Client

Leo Prestwich Ltd

**Job
Number**

LKC 21 1545

Location
Dates

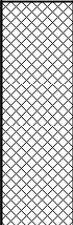
13/03/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.30	ES					MADE GROUND: Black gravelly sandy SILT with rare brick fragments. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising predominantly sandstone and limestone.		
					(0.30)			
					0.30	Dark orangish brown slightly gravelly SAND. Sand is fine to coarse. Gravel is fine, subangular to subrounded comprising sandstone.		
					(0.65)			
					0.95	Complete at 0.95m		


Remarks
Scale (approx)

1:10

Logged By

FP

Figure No.

LKC 21 1545.HD 312

Appendix B – Certificates of Analysis



Michelle Thorniley
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-03589

Site Reference: Hilton Lane, Prestwich

Project / Job Ref: LKC 21 1545

Order No: None Supplied

Sample Receipt Date: 15/03/2023

Sample Scheduled Date: 15/03/2023

Report Issue Number: 1

Reporting Date: 21/03/2023

Authorised by:

Dave Ashworth
Technical Manager

Dates of laboratory activities for each tested analyte are available upon request.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.



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Soil Analysis Certificate						
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23	13/03/23	13/03/23	13/03/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD301	HD302	HD303	HD304	HD305
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.00 - 0.75	0.10 - 0.65	0.00 - 0.15	0.00 - 0.20	0.00 - 0.10
Reporting Date: 21/03/2023	DETS Sample No	640845	640846	640847	640848	640849

Determinand	Unit	RL	Accreditation					
Organic Matter (SOM)	%	< 0.1	MCERTS	4.4	6.6	5.2	1.9	1.6

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Soil Analysis Certificate						
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23	13/03/23	13/03/23	13/03/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD306	HD307	HD308	HD309	HD310
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.00 - 0.40	0.00 - 0.70	0.00 - 0.20	0.00 - 1.00	0.00 - 1.00
Reporting Date: 21/03/2023	DETS Sample No	640850	640851	640852	640853	640854

Determinand	Unit	RL	Accreditation	(n)				
Organic Matter (SOM)	%	< 0.1	MCERTS	5.4	51.1	4	5.3	6.1

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23			
LK Consult Limited	Time Sampled	None Supplied	None Supplied			
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD311	HD312			
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied			
Order No: None Supplied	Depth (m)	0.00 - 1.00	0.00 - 0.30			
Reporting Date: 21/03/2023	DETS Sample No	640855	640856			

Determinand	Unit	RL	Accreditation			
Organic Matter (SOM)	%	< 0.1	MCERTS	3.6	4.1	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23	13/03/23	13/03/23	13/03/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD301	HD302	HD303	HD304	HD305
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.00 - 0.75	0.10 - 0.65	0.00 - 0.15	0.00 - 0.20	0.00 - 0.10
Reporting Date: 21/03/2023	DETS Sample No	640845	640846	640847	640848	640849

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.11	0.35	0.24	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	0.23	0.16	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.53	2.78	2.12	0.28	0.12
Anthracene	mg/kg	< 0.1	MCERTS	0.15	0.51	0.56	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.64	3.24	5.28	0.66	0.25
Pyrene	mg/kg	< 0.1	MCERTS	0.62	3.15	4.81	0.60	0.24
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.28	1.47	2.53	0.34	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	0.29	1.59	2.68	0.34	0.13
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.23	1.35	3.01	0.33	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.43	1.14	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.24	1.34	2.70	0.34	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.11	0.65	1.51	0.19	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	0.33	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	0.53	1.29	0.17	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	3.2	17.7	28.4	3.3	< 1.6

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23	13/03/23	13/03/23	13/03/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD306	HD307	HD308	HD309	HD310
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: None Supplied	Depth (m)	0.00 - 0.40	0.00 - 0.70	0.00 - 0.20	0.00 - 1.00	0.00 - 1.00
Reporting Date: 21/03/2023	DETS Sample No	640850	640851	640852	640853	640854

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.46	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.66	0.33	0.56	0.54	1
Anthracene	mg/kg	< 0.1	MCERTS	0.14	< 0.1	0.13	0.13	0.27
Fluoranthene	mg/kg	< 0.1	MCERTS	1.05	0.18	1	0.93	2.57
Pyrene	mg/kg	< 0.1	MCERTS	0.97	0.16	0.99	0.88	2.51
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.41	< 0.1	0.40	0.35	1.09
Chrysene	mg/kg	< 0.1	MCERTS	0.53	< 0.1	0.45	0.44	1.19
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.42	< 0.1	0.34	0.33	1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	0.21	0.18	0.35
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.41	< 0.1	0.37	0.33	0.97
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.23	< 0.1	0.19	0.15	0.44
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.20	< 0.1	0.16	0.14	0.37
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	5.2	< 1.6	4.8	4.4	11.8



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Soil Analysis Certificate - Speciated PAHs					
DETS Report No: 23-03589	Date Sampled	13/03/23	13/03/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied		
Site Reference: Hilton Lane, Prestwich	TP / BH No	HD311	HD312		
Project / Job Ref: LKC 21 1545	Additional Refs	None Supplied	None Supplied		
Order No: None Supplied	Depth (m)	0.00 - 1.00	0.00 - 0.30		
Reporting Date: 21/03/2023	DETS Sample No	640855	640856		

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	0.14	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	0.12	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	1.95	0.51		
Anthracene	mg/kg	< 0.1	MCERTS	0.52	0.13		
Fluoranthene	mg/kg	< 0.1	MCERTS	2.96	0.73		
Pyrene	mg/kg	< 0.1	MCERTS	2.68	0.66		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.97	0.26		
Chrysene	mg/kg	< 0.1	MCERTS	1.03	0.31		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.70	0.26		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.36	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.74	0.23		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.34	0.13		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.27	0.13		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	12.8	3.3		



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Maidstone
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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 23-03589	
LK Consult Limited	
Site Reference: Hilton Lane, Prestwich	
Project / Job Ref: LKC 21 1545	
Order No: None Supplied	
Reporting Date: 21/03/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
640845	HD301	None Supplied	0.00 - 0.75	13	Brown sandy clay
640846	HD302	None Supplied	0.10 - 0.65	16.4	Black sandy clay
640847	HD303	None Supplied	0.00 - 0.15	16.4	Black sandy clay
640848	HD304	None Supplied	0.00 - 0.20	11.7	Brown sand
640849	HD305	None Supplied	0.00 - 0.10	13.2	Brown sand
640850	HD306	None Supplied	0.00 - 0.40	14.6	Black sandy clay
640851	HD307	None Supplied	0.00 - 0.70	16.9	Black sandy gravel with stones and concrete
640852	HD308	None Supplied	0.00 - 0.20	12.4	Brown sandy clay
640853	HD309	None Supplied	0.00 - 1.00	15.1	Brown sandy clay with stones
640854	HD310	None Supplied	0.00 - 1.00	18.3	Black sandy clay with stones
640855	HD311	None Supplied	0.00 - 1.00	13.5	Brown sandy clay with stones
640856	HD312	None Supplied	0.00 - 0.30	14	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{1/5}

Unsuitable Sample ^{U/5}



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-03589

LK Consult Limited

Site Reference: Hilton Lane, Prestwich

Project / Job Ref: LKC 21 1545

Order No: None Supplied

Reporting Date: 21/03/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 dphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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List of HWOL Acronyms and Operators

DETS Report No: 23-03589

LK Consult Limited

Site Reference: Hilton Lane, Prestwich

Project / Job Ref: LKC 21 1545

Order No: None Supplied

Reporting Date: 21/03/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
—	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym

Appendix C – Generic Assessment Criteria

CATEGORY 4 SCREENING LEVELS

Substance	Residential (with home- grown produce)	Residential (without home- grown produce)	Allotments	Commercial	Public Open Space 1	Public Open Space 2
Arsenic	37 mg/kg	40 mg/kg	49 mg/kg	640 mg/kg	79 mg/kg	170 mg/kg
Benzene	0.87 mg/kg	3.3 mg/kg	0.18 mg/kg	98 mg/kg	140 mg/kg	230 mg/kg
Benzo(a)pyrene	5.0 mg/kg	5.3 mg/kg	5.7 mg/kg	77 mg/kg	10 mg/kg	21 mg/kg
Cadmium	22 mg/kg	150 mg/kg	3.9 mg/kg	410 mg/kg	220 mg/kg	880 mg/kg
Chromium VI	21 mg/kg	21 mg/kg	170 mg/kg	49 mg/kg	21 mg/kg	250 mg/kg
Lead	200 mg/kg	310 mg/kg	80 mg/kg	2300 mg/kg	630 mg/kg	1300 mg/kg

Tetrachlorethene (PCE) – 1% SOM	0.31 mg/kg	0.32 mg/kg	2.0 mg/kg	24 mg/kg	3,200 mg/kg	1,400 mg/kg
Tetrachlorethene (PCE) – 2.5% SOM	0.70 mg/kg	0.71 mg/kg	4.8 mg/kg	55 mg/kg	3,300 mg/kg	1,900 mg/kg
Tetrachlorethene (PCE) – 6% SOM	1.6 mg/kg	1.6 mg/kg	11 mg/kg	130 mg/kg	3,400 mg/kg	2,500 mg/kg
Trichlorethene (TCE) – 1% SOM	0.0093 mg/kg	0.0097 mg/kg	0.032 mg/kg	0.73 mg/kg	76 mg/kg	41 mg/kg
Trichlorethene (TCE) – 2.5% SOM	0.020 mg/kg	0.020 mg/kg	0.072 mg/kg	1.5 mg/kg	78 mg/kg	54 mg/kg
Trichlorethene (TCE) – 6% SOM	0.043 mg/kg	0.045 mg/kg	0.16 mg/kg	3.4 mg/kg	79 mg/kg	69 mg/kg
Vinyl Chloride (VC) – 1% SOM	0.0064 mg/kg	0.015 mg/kg	0.0017 mg/kg	1.1 mg/kg	7.8 mg/kg	18 mg/kg
Vinyl Chloride (VC) – 2.5% SOM	0.010 mg/kg	0.019 mg/kg	0.0031 mg/kg	1.4 mg/kg	7.8 mg/kg	19 mg/kg
Vinyl Chloride (VC) – 6% SOM	0.017 mg/kg	0.029 mg/kg	0.0058 mg/kg	2.2 mg/kg	7.8 mg/kg	19 mg/kg
1,2-Dichloroethane 1% SOM	0.11 mg/kg	0.16 mg/kg	0.054 mg/kg	12 mg/kg	300 mg/kg	300 mg/kg
1,2-Dichloroethane 2.5% SOM	0.18 mg/kg	0.24 mg/kg	0.10 mg/kg	17 mg/kg	310 mg/kg	330 mg/kg
1,2-Dichloroethane 6% SOM	0.31 mg/kg	0.41 mg/kg	0.19 mg/kg	29 mg/kg	310 mg/kg	380 mg/kg

Summary Table for the Generic Assessment Criteria for Human Health Risk Assessment Land Quality Management (LQM) S4ULs.

All GAC are based on sandy
loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Metals	Inorganic Arsenic	6%	37	40	43	640	79	170
	Beryllium	6%	1.7	1.7	35	12	2.2	63
	Boron	6%	290	11,000	45	240,000	21,000	46,000
	Cadmium	6%	11	85	1.9	190	120	532
	Chromium (III)	6%	910	910	18,000	8,600	1,500	33,000
	Chromium (VI)	6%	6.0	6.0	1.8	33	7.7	220
	Copper	6%	2,400	7,100	520	68,000	12,000	44,000
	Elemental Mercury	6%	1.2	1.2	21	58 (25.8) ^{vap}	16	30 (25.8) ^{vap}
	Inorganic Mercury	6%	40	56	19	1,100	120	240
	Methylmercury	6%	11	15	6.0	320	40	68
	Nickel (update 2015)	6%	126	181	53	983	231	804
	Selenium	6%	250	430	88	12,000	1,100	1,800
	Vanadium	6%	410	1,200	91	9,000	2,000	5,000
	Zinc	6%	3,700	40,000	620	730,000	81,000	170,000
BTEX Compounds	Benzene	1%	0.087	0.38	0.017	27	72	90
		2.5%	0.17	0.70	0.034	47	72	100
		6%	0.37	1.4	0.075	90	73	110
	Toluene	1%	130	880 (869) ^{vap}	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
		2.5%	290	1,900	51	110,000 (1,920) ^{vap}	56,000	95,000 (1,920) ^{vap}
		6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
	Ethylbenzene	1%	47	83	16	5,700 (518) ^{vap}	24,000	17,000 (518) ^{vap}
		2.5%	110	190	39	13,000 (1,220) ^{vap}	24,000	22,000 (1,220) ^{vap}
		6%	260	440	91	27,000 (2,840) ^{vap}	25,000	27,000 (2,840) ^{vap}
	o-xylene	1%	60	88	28	6,600 (478) ^{sol}	41,000	17,000 (478) ^{sol}
		2.5%	140	210	67	15,000 (1,120) ^{sol}	42,000	24,000 (1,120) ^{sol}
		6%	330	480	160	33,000 (2,620) ^{sol}	43,000	33,000 (2,620) ^{sol}
	m-xylene	1%	59	82	31	6,200 (625) ^{vap}	41,000	17,000 (625) ^{vap}
		2.5%	140	190	74	14,000 (1,470) ^{vap}	42,000	24,000 (1,470) ^{vap}
		6%	320	450	170	31,000 (3,460) ^{vap}	43,000	32,000 (3,460) ^{vap}
	p-xylene	1%	56	79	29	5,900 (576) ^{sol}	41,000	17,000 (576) ^{sol}
		2.5%	130	180	69	14,000 (1,350) ^{sol}	42,000	23,000 (1,350) ^{sol}
		6%	310	430	160	30,000 (3,170) ^{sol}	43,000	31,000 (3,170) ^{sol}

NOTES

^{sol} / ^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.		LQM Generic Assessment Criteria (mg/kg) Dry weight soil						
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene	1%	210	3,000 (57.1) ^{sol}	34	84,000 (57.0) ^{sol}	15,000	29,000
		2.5%	510	4,700 (141) ^{sol}	85	97,000 (141) ^{sol}	15,000	30,000
		6%	1,100	6,000 (336) ^{sol}	200	100,000	15,000	30,000
	Acenaphthylene	1%	170	2,900 (86.1) ^{sol}	28	83,000 (86.1) ^{sol}	15,000	29,000
		2.5%	420	4,600 (212) ^{sol}	69	97,000 (212) ^{sol}	15,000	30,000
		6%	920	6,000 (506) ^{sol}	160	100,000	15,000	30,000
	Anthracene	1%	2,400	31,000 (1.17) ^{vap}	380	520,000	74,000	150,000
		2.5%	5,400	35,000	950	540,000	74,000	150,000
		6%	11,000	37,000	2,200	540,000	74,000	150,000
	Benz(a)anthracene	1%	7.2	11	2.9	170	29	49
		2.5%	11	14	6.5	170	29	56
		6%	13	15	13	180	29	62
	Benzo(a)pyrene (only)	1%	2.2	3.2	0.97	35	5.7	11
		2.5%	2.7	3.2	2.0	35	5.7	12
		6%	3.0	3.2	3.5	36	5.7	13
	Benzo(b)fluoranthene	1%	2.6	3.9	0.99	44	7.1	13
		2.5%	3.3	4.0	2.1	44	7.2	15
		6%	3.7	4.0	3.9	45	7.2	16
	Benzo(ghi)perylene	1%	320	360	290	3,900	640	1,400
		2.5%	340	360	470	4,000	640	1,500
		6%	350	360	640	4,000	640	1,600
	Benzo(k)fluoranthene	1%	77	110	37	1,200	190	370
		2.5%	93	110	75	1,200	190	410
		6%	100	110	130	1,200	190	440
	Chrysene	1%	15	30	4.1	350	57	93
		2.5%	22	31	9.4	350	57	110
		6%	27	32	19	350	57	120
	Dibenzo(ah)anthracene	1%	0.24	0.31	0.14	3.5	0.57	1.1
		2.5%	0.28	0.32	0.27	3.6	0.58	1.3
		6%	0.3	0.32	0.43	3.6	0.58	1.4
	Fluoranthene	1%	280	1,500	52	23,000	3,100	6,300
		2.5%	560	1,600	130	23,000	3,100	6,300
		6%	890	1,600	290	23,000	3,100	6,400
	Fluorene	1%	170	2,800 (36.0) ^{sol}	27	63,000 (30.9) ^{sol}	9,900	20,000
		2.5%	400	3,800 (76.5) ^{sol}	67	68,000	9,900	20,000
		6%	860	4,500 (183) ^{sol}	160	71,000	9,900	20,000
	Indeno(123-cd)pyrene	1%	27	45	9.5	500	82	150
		2.5%	36	46	21	510	82	170
		6%	41	46	39	510	82	180
	Naphthalene	1%	2.3 ^f	2.3 ^f	4.1 ^f	190 ^f (76.4) ^{sol}	4,900 ^f	1,200 ^f (76.4) ^{sol}
		2.5%	5.6 ^f	5.6 ^f	10 ^f	460 ^f (183) ^{sol}	4,900 ^f	1,900 ^f (183) ^{sol}
		6%	13 ^f	13 ^f	24 ^f	1,100 ^f (432) ^{sol}	4,900 ^f	3,000
	Phenanthrene	1%	95	1,300 (36.0) ^{sol}	15	22,000	3,100	6,200
		2.5%	220	1,500	38	22,000	3,100	6,200
		6%	440	1,500	90	22,000	3,100	6,300
	Pyrene	1%	620	3,700	110	54,000	7,400	15,000
		2.5%	1,200	3,800	270	54,000	7,400	15,000
		6%	2,000	3,800	620	54,000	7,400	15,000
Coal Tar (B(a)P as surrogate marker)	1%	0.79	1.2	0.32	15	2.2	4.4	
	2.5%	0.98	1.2	0.67	15	2.2	4.7	
	6%	1.1	1.2	1.2	15	2.2	4.8	

NOTES

^{sol} / ^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^f = naphthalene is based on comparison of inhalation exposure with TDI_{inhal} for localised effect.

All GAC are based on sandy loam soils with a pH 7.

LQM Generic Assessment Criteria (mg/kg) Dry weight soil

Contaminant	SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Aliphatic							
EC 5-6	1%	42	42	730	3,200 (304) ^{sol}	570,000(304) ^{sol}	95,000 (304) ^{sol}
EC>6-8	1%	100	100	2,300	7,800 (144) ^{sol}	600,000	150,000 (144) ^{sol}
EC>8-10	1%	27	27	320	2,000 (78) ^{sol}	13,000	14,000 (78) ^{vap}
EC>10-12	1%	130 (48) ^{vap}	130 (48) ^{vap}	2,200	9,700 (48) ^{sol}	13,000	21,000 (48) ^{vap}
EC>12-16	1%	1,100 (24) ^{sol}	1,100 (24) ^{sol}	11,000	59,000 (24) ^{sol}	13,000	25,000 (24) ^{sol}
EC>16-35	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
EC>35-44	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
Aliphatic							
EC 5-6	2.5%	78	78	1,700	5,900 (558) ^{sol}	590,000	130,000 (558) ^{sol}
EC>6-8	2.5%	230	230	5,600	17,000 (322) ^{sol}	610,000	220,000 (322) ^{sol}
EC>8-10	2.5%	65	65	770	4,800 (190) ^{vap}	13,000	18,000 (190) ^{vap}
EC>10-12	2.5%	330 (118) ^{vap}	330 (118) ^{vap}	4,400	23,000 (118) ^{vap}	13,000	23,000 (118) ^{vap}
EC>12-16	2.5%	2,400 (59) ^{sol}	2,400 (59) ^{sol}	13,000	82,000 (59) ^{sol}	13,000	25,000 (59) ^{sol}
EC>16-35	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
EC>35-44	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
Aliphatic							
EC 5-6	6%	160	160	3,900	12,000 (1,150) ^{sol}	600,000	180,000 (1,150) ^{sol}
EC>6-8	6%	530	530	13,000	40,000 (736) ^{sol}	620,000	320,000 (736) ^{sol}
EC>8-10	6%	150	150	1,700	11,000 (451) ^{vap}	13,000	21,000 (451) ^{vap}
EC>10-12	6%	760 (283) ^{vap}	760 (283) ^{vap}	7,300	47,000 (283) ^{vap}	13,000	24,000 (283) ^{vap}
EC>12-16	6%	4,300 (142) ^{sol}	4,400 (142) ^{sol}	13,000	90,000 (142) ^{sol}	13,000	26,000 (142) ^{sol}
EC>16-35	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
EC>35-44	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
Aromatic							
EC5-7(benzene as non-threshold)	1%	70	370	13	26,000 (1,220) ^{sol}	56,000	76,000 (1,220) ^{sol}
EC>7-8(toluene)	1%	130	860	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
EC>8-10	1%	34	47	8.6	3,500 (613) ^{vap}	5,000	7,200 (613) ^{vap}
EC>10-12	1%	74	250	13	16,000 (364) ^{sol}	5,000	9,200 (364) ^{sol}
EC>12-16	1%	140	1,800	23	36,000 (169) ^{sol}	5,100	10,000
EC>16-21	1%	260 ^f	1,900 ^f	46 ^f	28,000 ^f	3,800 ^f	7,600 ^f
EC>21-35	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	2.5%	140	690	27	46,000 (2,260) ^{sol}	56,000	84,000 (2,260) ^{sol}
EC>7-8(toluene)	2.5%	290	1,800	51	110,000 (1,920) ^{sol}	56,000	95,000 (1,920) ^{sol}
EC>8-10	2.5%	83	110	21	8,100 (1,500) ^{vap}	5,000	8,500 (1,500) ^{vap}
EC>10-12	2.5%	180	590	31	28,000 (899) ^{sol}	5,000	9,700 (899) ^{sol}
EC>12-16	2.5%	330	2,300 (419) ^{sol}	57	37,000	5,100	10,000
EC>16-21	2.5%	540 ^f	1,900 ^f	110 ^f	28,000 ^f	3,800 ^f	7,700 ^f
EC>21-35	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	6%	300	1,400	57	86,000 (4,710) ^{sol}	56,000	92,000 (4,710) ^{sol}
EC>7-8(toluene)	6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
EC>8-10	6%	190	270	51	17,000 (3,580) ^{vap}	5,000	9,300 (3,580) ^{vap}
EC>10-12	6%	380	1,200	74	34,000 (2,150) ^{sol}	5,000	10,000
EC>12-16	6%	660	2,500	130	38,000	5,100	10,000
EC>16-21	6%	930 ^f	1,900 ^f	260 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>21-35	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
EC>35-44	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
Aliphatic +Aromatic >EC44	1%	1,600 ^f	1,900 ^f	1,200 ^f	28,000 ^f	3,800 ^f	7,800 ^f
	2.5%	1,800 ^f	1,900 ^f	2,100 ^f	28,000 ^f	3,800 ^f	7,800 ^f
	6%	1,900 ^f	1,900 ^f	3,000 ^f	28,000 ^f	3,800 ^f	7,900 ^f

NOTES

Sol / vap = solubility / vapour limit (potentially use if free product identified, although highly conservative).

f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chloalkanes and Alkenes & Explosives	1,2 Dichloroethane (DCA)	1%	7.1E-03	9.2E-03	4.6E-03	0.67	29	21
		2.5%	1.1E-02	1.3E-02	8.3E-03	0.97	29	24
		6%	1.9E-02	2.3E-02	1.6E-02	1.7	29	28
	1,1,1 Trichloroethane (TCA)	1%	8.8	9.0	48	660	140,000	57,000 (1,425) ^{vap}
		2.5%	18	18	110	1,300	140,000	76,000 (2,915) ^{vap}
		6%	39	40	240	3,000	140,000	100,000 (6,392) ^{vap}
	1,1,2,2-Tetrachloroethanes (PCA)	1%	1.6	3.9	0.41	270	1,400	1,800
		2.5%	3.4	8.0	0.89	550	1,400	2,100
		6%	7.5	17	2.0	1,100	1,400	2,300
	1,1,1,2-Tetrachloroethanes (PCA)	1%	1.2	1.5	0.79	110	1,400	1,500
		2.5%	2.8	3.5	1.9	250	1,400	1,800
		6%	6.4	8.2	4.4	560	1,400	2,100
	Tetrachloroethene (PCE)	1%	0.18	0.18	0.65	19	1,400	810 (424) ^{sol}
		2.5%	0.39	0.40	1.5	42	1,400	1,100 (951) ^{sol}
		6%	0.90	0.92	3.6	95	1,400	1,500
	Tetrachloromethane (carbon tetrachloride)	1%	2.6E-02	2.6E-02	0.45	2.9	890	190
		2.5%	5.6E-02	5.6E-02	1.0	6.3	920	270
		6%	0.13	0.13	2.4	14	950	400
	Trichloroethene (TCE)	1%	1.6E-02	1.7E-02	4.1E-02	1.2	120	70
		2.5%	3.4E-02	3.6E-02	9.1E-02	2.6	120	91
		6%	7.5E-02	8.0E-02	0.21	5.7	120	120
	Trichloromethane (chloroform)	1%	0.91	1.2	0.42	99	2,500	2,600
		2.5%	1.7	2.1	0.83	170	2,500	2,800
		6%	3.4	4.2	1.7	350	2,500	3,100
	Chloroethene (vinyl chloride)	1%	6.4E-04	7.7E-04	5.5E-04	5.9E-02	3.5	4.8
		2.5%	8.7E-04	1.0E-03	1.0E-03	7.7E-02	3.5	5.0
		6%	1.4E-03	1.5E-03	1.8E-03	0.12	3.5	5.4
	2,4,6-Trinitrotoluene (TNT)	1%	1.6	65	0.24	1,000	130	260
		2.5%	3.7	66	0.58	1,000	130	270
		6%	8.1	66	1.4	1,000	130	270
	RDX	1%	120	13,000	17	210,000	26,000	49,000 (18.7) ^{sol}
		2.5%	250	13,000	38	210,000	26,000	51,000
		6%	540	13,000	85	210,000	27,000	53,000
	HMX	1%	5.7	6,700	0.86	110,000	13,000	23,000 (0.35) ^{vap}
		2.5%	13	6,700	1.9	110,000	13,000	23,000 (0.39) ^{vap}
		6%	26	6,700	3.9	110,000	13,000	24,000 (0.48) ^{vap}
Pesticides	Aldrin	1%	5.7	7.3	3.2	170	18	30
		2.5%	6.6	7.4	6.1	170	18	31
		6%	7.1	7.5	9.8	170	18	31
	Dieldrin	1%	0.97	7.0	0.17	170	18	30
		2.5%	2.0	7.3	0.41	170	18	30
		6%	3.5	7.4	0.96	170	18	31
	Atrazine	1%	3.3	610	0.5	9,300	1,200	2,300
		2.5%	7.8	620	1.2	9,400	1,200	2,400
		6%	17.4	620	2.7	9,400	1,200	2,400
	Dichlorvos	1%	3.2E-02	6.4	4.9E-03	140	16	26
		2.5%	6.6E-02	6.5	1.0E-02	140	16	26
		6%	0.14	6.6	2.2E-02	140	16	27
	Endosulfanns (2 isomers)	1%	7.4	160 (3.0E-03) ^{vap}	1.2	5,600 (3.0E-03) ^{vap}	1,200	2,300
		2.5%	18	280 (7.0E-03) ^{vap}	2.9	7,400 (7.0E-03) ^{vap}	1,200	2,400
		6%	41	410 (1.6E-02) ^{vap}	6.8	8,400 (1.6E-02) ^{vap}	1,200	2,500
	Hexachlorocyclohexane (3 isomers), inc Lindane	1%	8.5E-02	3.7	1.3E-02	65	8.1	15
		2.5%	0.2	3.8	3.2E-02	65	8.1	15
		6%	0.46	3.8	7.7E-02	65	8.1	16

NOTES

Sol / vap = solubility / vapour limit (potentially use if free product identified, although highly conservative).

All GAC are based on
sandy loam soils with a pH
7.

LQM Generic Assessment Criteria (mg/kg) Dry weight soil

Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chlorobenzenes	Chlorobenzene	1%	0.46	0.46	5.9	56	11,000	1,300 (675) ^{sol}
		2.5%	1.0	1.0	14	130	13,000	2,000 (1,520) ^{sol}
		6%	2.4	2.4	32	290	14,000	2,900
	Dichlorobenzenes (3 isomers)	1%	23	24	94	2,000 (571) ^{sol}	90,000	24,000 (571) ^{sol}
		2.5%	55	57	230	4,800 (1,370) ^{sol}	95,000	36,000 (1,370) ^{sol}
		6%	130	130	540	11,000 (3,240) ^{sol}	98,000	51,000 (3,270) ^{sol}
	Trichlorobenzenes (3 isomers)	1%	2.6	2.6	55	220	15,000	1,700 (318) ^{vap}
		2.5%	6.4	6.4	140	530	17,000	2,600 (786) ^{vap}
		6%	15	15	320	1,300	19,000	4,000 (1,880) ^{vap}
	Tetrachlorobenzenes (3 isomers)	1%	0.66	0.75	0.38	49 (39.4) ^{vap}	78	110 (39) ^{vap}
		2.5%	1.6	1.9	0.90	120 (98.1) ^{vap}	79	120
		6%	3.7	4.3	2.2	240 (235) ^{vap}	79	130
	Pentachlorobenzene	1%	5.8	19	1.2	640 (43.0) ^{sol}	100	190
		2.5%	12	30	3.1	770 (107) ^{sol}	100	190
		6%	22	38	7.0	830	100	190
	Hexachlorobenzene	1%	1.8 (0.20) ^{vap}	4.1 (0.20) ^{vap}	0.47	110 (0.20) ^{vap}	16	30
		2.5%	3.3 (0.50) ^{vap}	5.7 (0.50) ^{vap}	1.1	120	16	30
		6%	4.9	6.7 (1.2) ^{vap}	2.5	120	16	30
Chlorophenol	Chlorophenols (4 congeners)	1%	0.87 ^g	94	0.13 ^g	3,500	620	1,100
		2.5%	2.0	150	0.30	4,000	620	1,100
		6%	4.5	210	0.70	4,300	620	1,100
	Pentachlorophenol	1%	0.22	27 (16.4) ^{vap}	3.0E-02	400	60	110
		2.5%	0.52	29	8.0E-02	400	60	120
		6%	1.2	31	0.19	400	60	120
Others	Carbon Disulphide	1%	0.14	0.14	4.8	11	11,000	1,300
		2.5%	0.29	0.29	10	22	11,000	1,900
		6%	0.62	0.62	23	47	11,000	2,700
	Hexachlorobutadiene	1%	0.29	0.32	0.25	31	25	48
		2.5%	0.7	0.78	0.61	66	25	50
		6%	1.6	1.8	1.4	120	25	51
	Phenol	1%	280	750	66	760 ^{dir} (31,000)	760 ^{dir} (11,000)	760 ^{dir} (8,600)
		2.5%	550	1,300	140	1,500 ^{dir} (35,000)	1,500 ^{dir} (11,000)	1,500 ^{dir} (9,700)
		6%	1,100	2,300	280	3,200 ^{dir} (37,000)	3,200 ^{dir} (11,000)	3,200 ^{dir} (11,000)

NOTES

^{Sol / vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^{dir} = S4uls based on threshold protective of direct skin contact with phenol (brackets long term exposure for illustration purposes).

^g = derived based on 2,3,4,6-tetrachlorophenol.

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