Upper Chorlton Road, Whalley Range

Site Completion Report



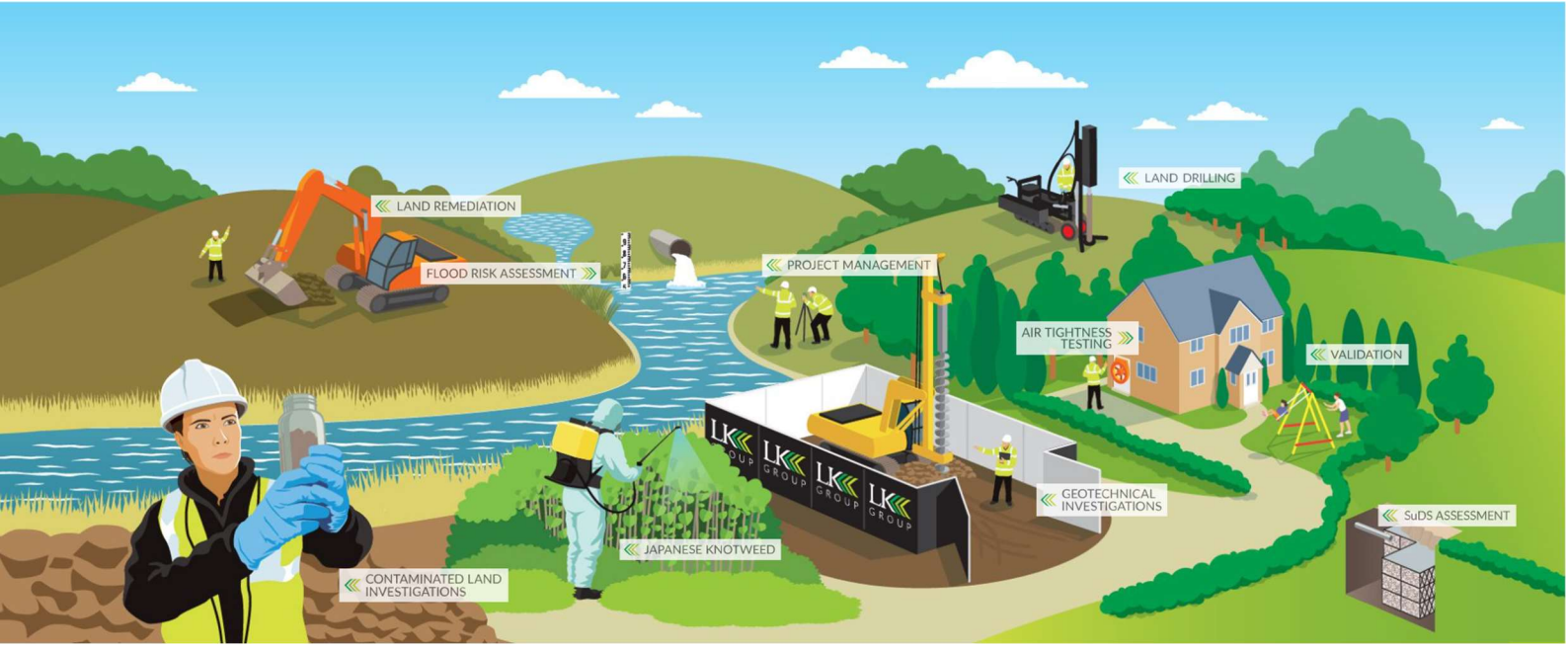
Job Number: LKC 23 1395

Date: May 2025

Client: J Greenwood (Builders) Ltd

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Eton Business Park, Eton Hill Rd, Radcliffe, Greater Manchester M26 2ZS
0161 763 7200 info@thelkgroup.com www.thelkgroup.com

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DOCUMENT QUALITY ASSURANCE

Site Address	63-65 Upper Chorlton Road, Whalley Range, Manchester, M16 7RQ
Report Title	Site Completion Report
Job Number	LKC 23 1395
Client	J Greenwood (Builders) Ltd

Revision	0	**Date of Issue**	30/05/2025
Document Ref:	LKC 23 1395-D1-Site Completion Report Upper Chorlton Rd, Whalley Range R0		
Status	Final		
Written By	Alex Evans		
Approved By	Rosie Cummings		

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Those using this information in subsequent assessments or evaluations do so at their own risk.

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1. Introduction

LK Consult Ltd (LKC) has been commissioned to provide a Site Completion Report for Upper Chorlton Road, Whalley Range, which relates to the refurbishment and extension of an apartment block with associated landscaping.

The aim of the Site Completion Report will be to demonstrate to the Local Authority that the site has been suitably remediated in line with the Remediation Statement and in accordance with the National Planning Policy Framework (NPPF)[1], where the site is 'suitable for use' for the proposed development.

The Site Completion Report should be sufficient to satisfy the contaminated land planning conditions.

Details are provided in the following sections.

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

Location	South-east of Upper Chorlton Road and north-east of Darnley Street, Whalley Range.
Area	1,200m^2.
Topography	31 metres above ordnance datum (AOD). Site is approximately level.
Proposed Development	Residential apartments with shared soft landscaping.

Table 1-1: Summary of site details.

1.1. Summary of Previous Work

The following reports have been undertaken for the site:

- Preliminary Risk Assessment (PRA) undertaken by LKC (Ref: CL-602-LKC 23 1395-01).
- Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy undertaken by LKC (Ref: LKC 23 1395-B1-GI Upper Chorlton Rd R1).

1.2. Summary of Required Validation Work

Based upon the findings of the above the following validation was required:

- 450mm thick environmental cover system over a geotextile membrane in landscaping areas. 600mm thick environmental cover system was specified where shrubs were to be grown. As the proposed planting comprises smaller herbaceous planting rather than large shrubs, 450mm depth was deemed more appropriate. Where there are mature trees in influencing distance of the environmental cover system, a reduced cover system is likely to be required comprising 100mm cover over a geotextile membrane.
- Chemical validation of all imported soils to be used in soft landscaping.
- Details of any unexpected contamination.

Selected photographs of the completed site are presented in Appendix A.

2. Imported Material for Garden Areas

2.1. Topsoil

Approximately 40m^3 topsoil for use in the landscaping areas was imported onto site from Freeland Horticulture in Astley which is classed as a greenfield source.

The imported topsoil was sampled on 16th April 2025 (5no. samples referenced S1 to S5) in line with the rates agreed in the Remediation Strategy. LKC visually inspected the topsoil for putrescible material, none of which was encountered.

Laboratory results and supplier certification can be found within Appendix C.

2.2. Geotextile Membrane

A white Terram Non-Woven Geotextile Membrane was installed below the topsoil as part of the 450mm thick clean cover system. The membrane was observed during the garden validation visits undertaken on site.

2.3. Generic Assessment Criteria

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

- Category 4 Screening Levels (C4SLs).
- LQM Suitable 4 Use Levels (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 model based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.
When compared to appropriate screening values for 'residential with plant uptake' end use, no elevated contaminants were identified in the imported topsoil. In S4, trace fibres of asbestos (0.002% Chrysotile) were recorded, no asbestos was recorded in the other samples. As the material was from a greenfield source, this was considered to be from cross contamination therefore the soil was retested for asbestos on another three samples (S1-S3). No asbestos was found in any of the samples.

The material is considered 'suitable for use' within the soft landscaping capping layer. Appropriate screening values are presented in Appendix D.

3. Summary of Validation Inspection Works

The recommendation for the gardens comprised a minimum 450mm thick 'clean' capping layer.

LKC carried out a site visit on the 14th May 2025 to inspect the capping layer construction and depth in the landscaping areas. Photographs are provided in Appendix B and the observations are sumarised below in Table 3-1.

Plot No.	Total Soil Cover (mm)	Required Depth (mm)	Membrane present at base (✓ / x)	Compliance (✓ / x)
1	260	450	✓	✓*
2	450	450	✓	✓
3	450	450	✓	✓
4	200	100**	✓	✓

Table 4-1: Summary of capping layer material depths.

LKC were able to verify that in the places inspected in the garden areas, the cover system has been placed to an appropriate depth of 450mm. There are some exceptions to this as follows:

*Location 1 in the front of the property is a very small narrow planting bed and it was not possible to achieve the required depth of 450mm. Owing to the small size of the bed, expansive use by the receptors will not be possible there fore the nominal clean cover is still considered protective of future site users.

**Location 4 was a grassed area containing a large mature tree. In this area a shallower cover of soil was laid in accordance with the remediation strategy.

4. Unexpected Contamination

LKC understand that no unexpected contamination was encountered during development works.

5. Conclusions

LKC consider that the work onsite to date has been validated in accordance with the agreed Remediation Strategy.

Based on the above information LKC considers the Upper Chorlton Road, Whalley Range development site is 'suitable for use' for a residential development.





Client: Terra Nova Developments Ltd				Title: Site Location & Boundary Plan	LKC CONSULT
Site: Upper Chorlton Road, Manchester				Scale (see scale bar): 1:25,000 & 1:1000 @ A4	Figure: 1 / Revision:
Job No.: LKC 23 1395	Drawn By: AE	Checked By: RC	Drawn: Jul 2023		



Extract from: TADW Architects
Drawing Ref: Proposed Site Plan, No.231332, Issue:P1 (27/10/2023)

N

KEY

Site Boundary

Schedule of Accomodation

12no. 1B1P flats 41-47sqm

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.

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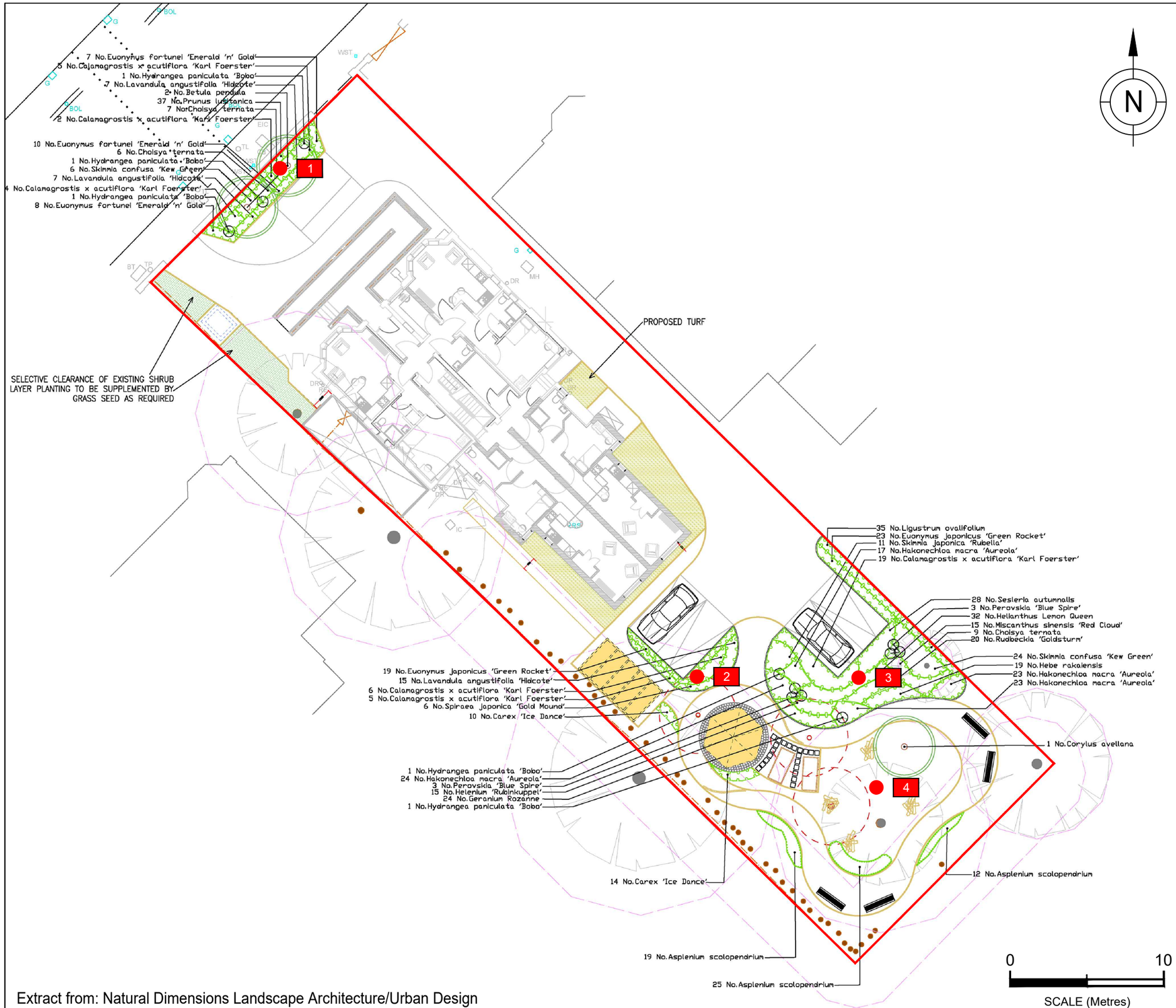
Client: Terra Nova Developments Ltd

Site: 63-65 Upper Chorlton Road, Whalley Range, Manchester

Title: Proposed Development Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 23 1395	1:250 @ A3	2	A

Drawn By:	Checked By:	Drawn:
AC	EM	Oct 2023



KEY

- Site Boundary
- Locations
- EXISTING TREES TO BE RETAINED
- SITE BOUNDARY
- PROPOSED TREES
- TREES TO BE REMOVED
- ROOT PROTECTION ZONE
- PROPOSED SHRUBS
- PROPOSED FERN PLANTING
- PROPOSED PLANTING
- PROPOSED SEED MIX A19 GERMINAL ALL PURPOSE LANDSCAPING SOWING RATE 50 G/M2 (500 KG/HA)
- PROPOSED TURF ROLAWN MEDALLION OR SIMILAR APPROVED

Trees					
Number	Species	Density	Specification	Girth	Pot Size	Height
2	Betula pendula	Counted	RB	14-16cm		300-350cm
1	Corylus avellana	Counted	Multi-Stemmed		100L	2.0m

Shrubs			
Number	Species	Density	Pot Size
28	Choisya ternata	4/m²	2L
35	Euonymus fortunei 'Emerald 'n' Gold'	0.4/m²	2L
42	Euonymus japonicus 'Green Rocket'	3/m²	2L
19	Hebe rakaiensis	7/m²	2L
32	Hellanthus Lemon Queen	7/m²	2L
9	Hydrangea paniculata 'Bobo'	Counted	2L
89	Lavandula angustifolia 'Hidcote'	7/m²	2L
35	Ligustrum ovalifolium	0.35/m²	2L
6	Perovskia 'Blue Spire'	Counted	2L
37	Prunus lusitanica	0.35/m²	2L
30	Skimmia confusa 'Kew Green'	4/m²	2L
11	Skimmia japonica 'Rubella'	4/m²	2L
6	Spiraea japonica 'Gold Mound'	5/m²	2L

Herbaceous			
Number	Species	Density	Pot Size
24	Geranium Rozanne	8/m²	1L
15	Helenium 'Rubinkuppel'	7/m²	2L
20	Rudbeckia 'Goldsturm'	7/m²	2L

Ferns			
Number	Species	Density	Pot Size
56	Asplenium scolopendrium	6/m²	2L

Grasses			
Number	Species	Density	Pot Size
41	Calamagrostis x acutiflora 'Karl Foerster'	3/m²	2L
24	Carex 'Ice Dance'	8/m²	2L
87	Hakonechloa macra 'Aureola'	8/m²	2L
13	Miscanthus sinensis 'Red Cloud'	4/m²	2L
28	Sesleria autumnalis	7/m²	2L

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.

LK CONSULT

Client: J. Greenwood Builders

Site: 63-65 Upper Chorlton Road, Whalley Range, Manchester

Title: Validation Location Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC231395	1:250 @ A3	3	

Drawn By:	Checked By:	Drawn:
AC	RC	May 2025

Extract from: Natural Dimensions Landscape Architecture/Urban Design
Drawing Ref: Landscape Planting Plan, No.002-ND2319-D, Rev:04 (02/04/2025)

Appendix A – Photographs of Completed Site







Photographs 1-5: Selected photographs of completed site.

Appendix B – Photographs of Landscaping Soil Depth

Location 1	
	**Photograph 1:** View of soft landscaping at Location 1.
	**Photograph 2:** View of soi in capping layer excavation in soft landscaping at Location 1.
	**Photograph 3:** Depth measurement in soft landscaping at Location 1.

Location 2



Photograph 4:
View of soft landscaping at Location 2.



Photograph 5:
View of soi in capping layer excavation in rear garden of Location 2. White Terram Geo-Textile Membrane at base.



Photograph 6:
Depth measurement in soil area of Location 2.

Location 3



Photograph 7:
View of soft landscaping at Location 3.



Photograph 8:
View of soi in capping layer excavation in soft landscaping at Location 3. White Terram Geo-Textile Membrane at base.



Photograph 9:
Depth measurement in soil area of Location 3.

Location 4



Photograph 10:
View of soft landscaping at Location 4.



Photograph 11:
View of soi in capping layer excavation in soft landscaping at Location 4. White Terram Geo-Textile Membrane at base.



Photograph 12:
Depth measurement in soil area of Location 4.

Appendix C – Certificate of Analysis - Soil

Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-1378-SA

19 March 2025

Dear Philippa

Topsoil Analysis Report: Astley, Greater Manchester Topsoil March 2025

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- pH & electrical conductivity values;
- major plant nutrients (N, P, K, Mg) & organic matter content;
- particle size distribution and stone content;
- heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- sulphate, sulphur, sulphide;
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16)
- banded aromatic and aliphatic petroleum hydrocarbons (C_5-C_{35}).
- Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Freeland Horticulture - 01322 619161

COMMENTS

pH & Electrical Conductivity (salinity) Values

The sample was alkaline in nature (pH 8.5) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (1186µS/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by $CaSO_4$ extract (BS3882 requirement) fell below the maximum specified value (3300µS/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes.

Particle Size Distribution & Stone Content

The sample contained 81% sand and fell into the sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (1.2%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compare with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in. 'The LQM/CIEH S4Uls' for Human Health Risk Assessmet (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, sandy loam. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Freeland Horticulture - 01322 619161

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	March 25
Our Ref	1378-SA
Date	19 March 2025

		Composite sample
pH Value & Salinity		
pH value (1:2.5 soil/water ext)	units	8.5
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	1186
Electrical Conductivity (1:2.5 soil/CaSO4 ext)	µS/cm	3076
Organic Matter & Nutrient Status		
Organic Matter (LOI)	%	5.8
Organic Carbon (Derived)	%	3.4
Total Nitrogen	%	0.177
Carbon:Nitrogen Ratio	:1	19.1
Available Phosphorus	mg/l	40.0
Available Potassium	mg/l	939
Available Magnesium	mg/l	130
Particle Size Analysis & Stones		
Clay (<0.002mm)	%	8
Silt (0.063-0.002mm)	%	11
Sand (2.0-0.063mm)	%	81
Texture Class	UK Class	Sandy Loam
Stones 2-20mm	% by DW	1.2
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0
Potential Contaminants		
Total Arsenic (As)	mg/kg	3.9
Total Cadmium (Cd)	mg/kg	<0.1
Total Chromium (Cr)	mg/kg	12.0
Hexavalent Chromium (CR^{VI})	mg/kg	<0.2
Total Copper (Cu)	mg/kg	15.4
Total Lead (Pb)	mg/kg	54.0
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	<10
Total Selenium (Se)	mg/kg	0.10
Total Zinc (Zn)	mg/kg	40.1
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	54.6
Total Vanadium (V)	mg/kg	<10
Hot Water Soluble Boron (B)	mg/kg	1.8
Total Cyanide (CN)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	7.2
Easily Liberated Sulphide (S^{2-})	mg/kg	2.2
Water Soluble Sulphate (SO_4^{2-})	mg/l	189
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.
Polyaromatic Hydrocarbons		
Naphthalene	mg/kg	0.1
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	0.1
Fluorene	mg/kg	0.1
Phenanthrene	mg/kg	0.5

Chain of Custody required Freeland Ticket - 01322 619161

Freeland Horticulture Ltd: Registered Address: Rosedale Nurery, College Road, Hextable, Kent BR8 7LT. Phone: 01322 619161
Email: enquires@freelandhorticulture.co.uk

Freeland
HORTICULTURE LIMITED

Client	Freeland Horticulture Ltd		
Job Name	Topsoil Analysis		
Site	Astley, Greater Manchester		
Month/Year	March 25		
Our Ref	1378-SA		
Date	19 March 2025		
Anthracene	mg/kg		0.1
Fluoranthene	mg/kg		0.5
Pyrene	mg/kg		0.5
Benzo[a]anthracene	mg/kg		0.2
Chrysene	mg/kg		0.3
Benzo[b]fluoranthene	mg/kg		0.3
Benzo[k]fluoranthene	mg/kg		0.1
Benzo[a]pyrene	mg/kg		0.2
Indeno[1,2,3-cd]pyrene	mg/kg		0.2
Dibenzo[a,h]anthracene	mg/kg		<0.1
Benzo[g,h,i]perylene	mg/kg		0.2
Total PAHs sum US EPA 16	mg/kg		3.4

Banded Petroleum Hydrocarbons

Aliphatic TPH >C_5-C_6	mg/kg	0.11
Aliphatic TPH >C_6-C_8	mg/kg	0.20
Aliphatic TPH >C_8-C_{10}	mg/kg	<0.05
Aliphatic TPH >C_{10}-C_{12}	mg/kg	<10
Aliphatic TPH >C_{12}-C_{16}	mg/kg	<10
Aliphatic TPH >C_{16}-C_{21}	mg/kg	110
Aliphatic TPH >C_{21}-C_{35}	mg/kg	240
Aliphatic TPH >C_{35}-C_{44}	mg/kg	24

Aromatic TPH >C_5-C_7	mg/kg	<0.05
Aromatic TPH >C_7-C_8	mg/kg	<0.05
Aromatic TPH >C_8-C_{10}	mg/kg	<0.05
Aromatic TPH >C_{10}-C_{12}	mg/kg	<10
Aromatic TPH >C_{12}-C_{16}	mg/kg	<10
Aromatic TPH >C_{16}-C_{21}	mg/kg	43.0
Aromatic TPH >C_{21}-C_{35}	mg/kg	280
Aromatic TPH >C_{35}-C_{44}	mg/kg	40.0

Total Petroleum Hydrocarbons (C_5-C_{44})	mg/kg	757

BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Chain of Custody required Freeland Ticket - 01322 619161

Certificate of Analysis

Certificate Number	25-08814	*Issued:*	01-May-25

Client LK Consult Limited
Unit 29
Eton Business Park
Eton Hill Road
Radcliffe
Manchester
M26 2ZS

Our Reference 25-08814

Client Reference ~ LKC 23 1395

Order No ~ PO-C001231

Contract Title ~ Upper Chorlton Road, Whalley Range

Description 5 Soil samples.

Date Received 22-Apr-25

Date Started 22-Apr-25

Date Completed 01-May-25

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By [redacted]

Reyhan Irfan
Operations Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 25-08814
Client Ref ~ LKC 23 1395
Contract Title ~ Upper Chorlton Road, Whalley Range

	Lab No	2497498	2497499	2497500	2497501	2497502
	Sample ID ~	TS1	TS2	TS3	TS4	TS5
	Depth ~					
	Other ID ~					
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	16/04/2025	16/04/2025	16/04/2025	16/04/2025	16/04/2025
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Asbestos Quantification (Gravimetric)	DETSC 1102	0.001	%				0.002	
Metals								
Arsenic	DETSC 2301#	0.2	mg/kg	5.2	5.3	7.7	5.3	5.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.2	1.0	1.3	1.2	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	12	13	15	12	11
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	28	26	29	27	31
Lead	DETSC 2301#	0.3	mg/kg	50	43	47	51	54
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.08	0.08	0.08	0.08
Nickel	DETSC 2301#	1	mg/kg	11	11	10	11	10
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	16	17	15	16	16
Zinc	DETSC 2301#	1	mg/kg	66	56	58	61	73
Inorganics								
pH	DETSC 2008#		pH	8.2	8.5	8.3	8.5	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.7	0.7	0.7	0.8	0.7
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4	0.4	0.4	0.5	0.4
Organic matter	DETSC 2002#	0.1	%	6.1	6.2	6.7	6.8	5.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.037	0.028	0.034	0.032	0.032
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	3.97	4.06	3.85	3.58
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	3.00	2.77	2.58	3.29
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	5.55	5.49	4.96	5.48	4.44
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	12.45	11.80	11.91	11.30
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	0.88	0.94	< 0.50	0.85	0.67
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	8.78	10.58	8.13	13.32	12.98
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	47.14	39.15	34.26	41.48	37.97
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	56.80	50.67	42.39	55.65	51.62
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	56.80	63.13	54.19	67.56	62.93

Summary of Chemical Analysis
Soil Samples

Our Ref 25-08814
Client Ref ~ LKC 23 1395
Contract Title ~ Upper Chorlton Road, Whalley Range

				Lab No	2497498	2497499	2497500	2497501	2497502
				Sample ID ~	TS1	TS2	TS3	TS4	TS5
				Depth ~					
				Other ID ~					
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	16/04/2025	16/04/2025	16/04/2025	16/04/2025	16/04/2025
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.2	0.1	0.1	0.1	0.2
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.3	0.2	0.2	0.2	0.2
Fluorene	DETSC 3301	0.1	mg/kg	0.6	0.3	0.5	0.3	0.4
Phenanthrene	DETSC 3301	0.1	mg/kg	0.9	1.0	1.3	0.9	1.6
Anthracene	DETSC 3301	0.1	mg/kg	0.2	0.4	0.6	0.2	1.4
Fluoranthene	DETSC 3301	0.1	mg/kg	1.4	1.6	2.2	1.3	3.6
Pyrene	DETSC 3301	0.1	mg/kg	1.7	1.3	2.4	1.0	3.3
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.2	0.6	0.9	0.6	1.4
Chrysene	DETSC 3301	0.1	mg/kg	0.5	0.6	0.9	0.5	1.6
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.1	0.3	0.5	0.4	0.9
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.2	0.1	0.1	0.1	0.3
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.3	0.7	1.0	0.8	1.9
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.8	< 0.1	1.4
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.4	0.3	0.7
PAH 16 Total	DETSC 3301	1.6	mg/kg	7.9	7.1	12	6.6	19
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.7	1.3	0.7	0.8	0.7

Summary of Asbestos Analysis
Soil Samples

Our Ref 25-08814
Client Ref ~ LKC 23 1395
Contract Title ~ Upper Chorlton Road, Whalley Range

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2497498	TS1	SOIL	NAD	none	Lee Kerridge
2497499	TS2	SOIL	NAD	none	Lee Kerridge
2497500	TS3	SOIL	NAD	none	Lee Kerridge
2497501	TS4	SOIL	Chrysotile	Chrysotile bundles present	Lee Kerridge
2497502	TS5	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis
Soil Samples

Our Ref 25-08814
Client Ref ~ LKC 23 1395
Contract Title ~ Upper Chorlton Road, Whalley Range

Lab No	2497501
Sample ID ~	TS4
Depth ~	
Other ID ~	
Sample Type ~	
Sampling Date ~	16/04/2025
Sampling Time ~	

Test	**Method**	**LOQ**	**Units**	
Total Mass% Asbestos (a+b+c)	DETSC 1102	< 0.001	Mass %	**0.002**
Gravimetric Quantification (a)	DETSC 1102	< 0.001	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	< 0.001	Mass %	0.002
Quantification by PCOM (c)	DETSC 1102	< 0.001	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	< 0.001	Fibres/g	na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample			g	585.89
ACMs present*			type	
Mass of ACM in sample			g	
% ACM by mass			%	
% asbestos in ACM			%	
% asbestos in sample			%	
Breakdown of Detailed Gravimetric Analysis (b)				
% Amphibole bundles in sample			Mass %	na
% Chrysotile bundles in sample			Mass %	0.002
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample			Mass %	na
% Chrysotile fibres in sample			Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres			Fibres/g	na
Chrysotile fibres			Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by
by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
# denotes deviating sample
The results are based on dry weight.

Information in Support of the Analytical Results

Our Ref 25-08814
Client Ref ~ LKC 23 1395
Contract ~ Upper Chorlton Road, Whalley Range

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	time exceeded for tests	Incorrect container for tests	Headspace in container for tests
2497498	TS1 SOIL	16/04/25	GJ 250ml, GJ 60ml ((Headspace)), PT 1L			BTEX /C5-10
2497499	TS2 SOIL	16/04/25	GJ 250ml, GJ 60ml ((Headspace)), PT 1L			BTEX /C5-10
2497500	TS3 SOIL	16/04/25	GJ 250ml, GJ 60ml ((Headspace)), PT 1L			BTEX /C5-10
2497501	TS4 SOIL	16/04/25	GJ 250ml, GJ 60ml ((Headspace)), PT 1L			BTEX /C5-10
2497502	TS5 SOIL	16/04/25	GJ 250ml, GJ 60ml ((Headspace)), PT 1L			BTEX /C5-10

Key: G-Glass P-Plastic J-Jar T-Tub

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic >EC35-EC40	EH_2D_AL
Aliphatic >EC40-EC44	EH_2D_AL
Aliphatic C5-C44	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic >EC35-EC40	EH_2D_AR
Aromatic >EC40-EC44	EH_2D_AR
Aromatic C5-C44	EH_2D+HS_1D_AR
TPH Ali/Aro C5-C44	EH_2D+HS_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	25-10630	*Issued:*	19-May-25

Client LK Consult Limited
Unit 29
Eton Business Park
Eton Hill Road
Radcliffe
Manchester
M26 2ZS

Our Reference 25-10630

Client Reference ~ LKC 23 1395

Order No ~ PO-C001231

Contract Title ~ Upper Chorlton Road, Manchester

Description 3 Soil samples.

Date Received 14-May-25

Date Started 14-May-25

Date Completed 19-May-25

Test Procedures Identified by prefix DETSn (details on request).

Notes 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.

Approved By [redacted]

Louise Cook
Contracts Manager

2139

Normec DETS Limited
Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info@dets.co.uk • normecdets.com

Summary of Asbestos Analysis
Soil Samples

Our Ref 25-10630
Client Ref ~ LKC 23 1395
Contract Title ~ Upper Chorlton Road, Manchester

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2507871	S1	SOIL	NAD	none	Keith Wilson
2507872	S2	SOIL	NAD	none	Keith Wilson
2507873	S3	SOIL	NAD	none	Keith Wilson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 25-10630
Client Ref ~ LKC 23 1395
Contract ~ Upper Chorlton Road, Manchester

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2507871	S1 SOIL	13/05/25	PT 1L		
2507872	S2 SOIL	13/05/25	PT 1L		
2507873	S3 SOIL	13/05/25	PT 1L		

Key: P-Plastic T-Tub

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Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Appendix D – Generic Assessment Criteria

Generic Assessment Criteria Values

	Contaminant	SOM	Res +	Res -	Allot.	Comm.	POSresi	POSpark	Source
Metals	Inorganic Arsenic	N/A	37	40	49	640	79	168	DEFRA C4SL
	Beryllium	N/A	1.7	1.7	35	12	2.2	63	LQM S4UL
	Boron	N/A	290	11,000	45	240,000	21,000	46,000	LQM S4UL
	Cadmium	N/A	26	149	4.9	410	220	880	DEFRA C4SL
	Chromium (III)	N/A	910	910	18,000	8,600	1,500	33,000	LQM S4UL
	Chromium (VI)	N/A	21.0	21.0	170.0	49	23.0	250	DEFRA C4SL
	Copper	N/A	2,400	7,100	520	68,000	12,000	44,000	LQM S4UL
	Lead	N/A	200	310	80	2,330	630	1,300	DEFRA C4SL
	Elemental Mercury	N/A	1.2	1.2	21	58 (25.8) vap	16	30 (25.8) vap	LQM S4UL
	Inorganic Mercury	N/A	40	56	19	1,100	120	240	LQM S4UL
	Methylmercury	N/A	11	15	6.0	320	40	68	LQM S4UL
	Nickel (2015 update)	N/A	130	180	53	980	230	800	LQM S4UL
	Selenium	N/A	250	430	88	12,000	1,100	1,800	LQM S4UL
	Vanadium	N/A	410	1,200	91	9,000	2,000	5,000	LQM S4UL
	Zinc	N/A	3,700	40,000	620	730,000	81,000	170,000	LQM S4UL
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene	1%	210	3,000 (57.1) sol	34	84,000 (57.0) sol	15,000	29,000	LQM S4UL
		2.5%	510	4,700 (141) sol	85	97,000 (141) sol	15,000	30,000	LQM S4UL
		6%	1,100	6,000 (336) sol	200	100,000	15,000	30,000	LQM S4UL
	Acenaphthylene	1%	170	2,900 (86.1) sol	28	83,000 (86.1) sol	15,000	29,000	LQM S4UL
		2.5%	420	4,600 (212) sol	69	97,000 (212) sol	15,000	30,000	LQM S4UL
		6%	920	6,000 (506) sol	160	100,000	15,000	30,000	LQM S4UL
	Anthracene	1%	2,400	31,000 (1.17) vap	380	520,000	74,000	150,000	LQM S4UL
		2.5%	5,400	35,000	950	540,000	74,000	150,000	LQM S4UL
		6%	11,000	37,000	2,200	540,000	74,000	150,000	LQM S4UL
	Benz(a)anthracene	1%	7.2	11	2.9	170	29	49	LQM S4UL
		2.5%	11	14	6.5	170	29	56	LQM S4UL
		6%	13	15	13	180	29	62	LQM S4UL
	Benzo(a)pyrene (only)	1%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
		2.5%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
		6%	5.0	5.3	5.70	77	10.0	21	DEFRA C4SL
	Benzo(a)pyrene (surrogate marker Coal Tar)	1%	0.8	1.2	0.32	15	2.2	4	LQM S4UL
		2.5%	1.0	1.2	0.67	15	2.2	5	LQM S4UL
		6%	1.1	1.2	1.20	15	2.2	5	LQM S4UL
	Benzo(b)fluoranthene	1%	2.6	3.9	0.99	44	7.1	13	LQM S4UL
		2.5%	3.3	4.0	2.1	44	7.2	15	LQM S4UL
		6%	3.7	4.0	3.9	45	7.2	16	LQM S4UL
	Benzo(ghi)perylene	1%	320	360	290	3,900	640	1,400	LQM S4UL
		2.5%	340	360	470	4,000	640	1,500	LQM S4UL
		6%	350	360	640	4,000	640	1,600	LQM S4UL
	Benzo(k)fluoranthene	1%	77	110	37	1,200	190	370	LQM S4UL
		2.5%	93	110	75	1,200	190	410	LQM S4UL
		6%	100	110	130	1,200	190	440	LQM S4UL
	Chrysene	1%	15	30	4.1	350	57	93	LQM S4UL
		2.5%	22	31	9.4	350	57	110	LQM S4UL
		6%	27	32	19	350	57	120	LQM S4UL
	Dibenzo(ah)anthracene	1%	0.24	0.31	0.14	3.5	0.57	1.1	LQM S4UL
		2.5%	0.28	0.32	0.27	3.6	0.58	1.3	LQM S4UL
		6%	0.3	0.32	0.43	3.6	0.58	1.4	LQM S4UL
	Fluoranthene	1%	280	1,500	52	23,000	3,100	6,300	LQM S4UL
		2.5%	560	1,600	130	23,000	3,100	6,300	LQM S4UL
		6%	890	1,600	290	23,000	3,100	6,400	LQM S4UL
	Fluorene	1%	170	2,800 (36.0) sol	27	63,000 (30.9) sol	9,900	20,000	LQM S4UL
		2.5%	400	3,800 (76.5) sol	67	68,000	9,900	20,000	LQM S4UL
		6%	860	4,500 (183) sol	160	71,000	9,900	20,000	LQM S4UL
	Indeno(123-cd)pyrene	1%	27	45	9.5	500	82	150	LQM S4UL
		2.5%	36	46	21	510	82	170	LQM S4UL
		6%	41	46	39	510	82	180	LQM S4UL
	Naphthalene	1%	15	15	65	1,600*	11,000*	8,400*	DEFRA C4SL
		2.5%	36	36	130	3,700*	15,000*	17,00*	DEFRA C4SL
		6%	85	85	200	8,400*	1,200*	1,900*	DEFRA C4SL
	Phenanthrene	1%	95	1,300 (36.0) sol	15	22,000	3,100	6,200	LQM S4UL
		2.5%	220	1,500	38	22,000	3,100	6,200	LQM S4UL
		6%	440	1,500	90	22,000	3,100	6,300	LQM S4UL
	Pyrene	1%	620	3,700	110	54,000	7,400	15,000	LQM S4UL
		2.5%	1,200	3,800	270	54,000	7,400	15,000	LQM S4UL
		6%	2,000	3,800	620	54,000	7,400	15,000	LQM S4UL
	Coal Tar (B(a)P as surrogate marker)	1%	0.79	1.2	0.32	15	2.2	4.4	LQM S4UL
		2.5%	0.98	1.2	0.67	15	2.2	4.7	LQM S4UL
		6%	1.1	1.2	1.2	15	2.2	4.8	LQM S4UL

Generic Assessment Criteria Values

	Contaminant	SOM	Res +	Res -	Allot.	Comm.	POSresi	POSpark	Source
BTEX Compounds	Benzene	1%	0.87	0.38	0.017	27	72	90	LQM S4UL
		2.5%	0.17	0.70	0.034	47	72	100	LQM S4UL
		6%	0.37	1.4	0.075	90	73	110	LQM S4UL
	Toluene	1%	130	880 (869) vap	22	56,000 (869) vap	56,000	87,000 (869) vap	LQM S4UL
		2.5%	290	1,900	51	110,000 (1,920) vap	56,000	95,000 (1,920) vap	LQM S4UL
		6%	660	3,900	120	180,000 (4,360) vap	56,000	100,000 (4,360)	LQM S4UL
	Ethylbenzene	1%	47	83	16	5,700 (518) vap	24,000	17,000 (518) vap	LQM S4UL
		2.5%	110	190	39	13,000 (1,220) vap	24,000	22,000 (1,220) vap	LQM S4UL
		6%	260	440	91	27,000 (2,840) vap	25,000	27,000 (2,840) vap	LQM S4UL
	o-xylene	1%	60	88	28	6,600 (478) sol	41,000	17,000 (478) sol	LQM S4UL
		2.5%	140	210	67	15,000 (1,120) sol	42,000	24,000 (1,120) sol	LQM S4UL
		6%	330	480	160	33,000 (2,620) sol	43,000	33,000 (2,620) sol	LQM S4UL
	m-xylene	1%	59	82	31	6,200 (625) vap	41,000	17,000 (625) vap	LQM S4UL
		2.5%	140	190	74	14,000 (1,470) vap	42,000	24,000 (1,470) vap	LQM S4UL
		6%	320	450	170	31,000 (3,460) vap	43,000	32,000 (3,460) vap	LQM S4UL
	p-xylene	1%	56	79	29	5,900 (576) sol	41,000	17,000 (576) sol	LQM S4UL
		2.5%	130	180	69	14,000 (1,350) sol	42,000	23,000 (1,350) sol	LQM S4UL
		6%	310	430	160	30,000 (3,170) sol	43,000	31,000 (3,170) sol	LQM S4UL
Petroleum Hydroc	**Aliphatic**								
	EC 5-6	1%	42	42	730	3,200 (304) sol	570,000(304)sol	95,000 (304) sol	LQM S4UL
	EC>6-8	1%	100	100	2,300	7,800 (144) sol	600,000	150,000 (144) sol	LQM S4UL
	EC>8-10	1%	27	27	320	2,000 (78) sol	13,000	14,000 (78) vap	LQM S4UL
	EC>10-12	1%	130 (48) vap	130 (48) vap	2,200	9,700 (48) sol	13,000	21,000 (48) vap	LQM S4UL
	EC>12-16	1%	1,100 (24) sol	1,100 (24) sol	11,000	59,000 (24) sol	13,000	25,000 (24) sol	LQM S4UL
	EC>16-35	1%	65,000 (8.48)	65,000 (8.48) f ,sol	260,000 f	160,000 f	250,000 f	450,000 f	LQM S4UL
	EC>35-44	1%	65,000 (8.48)	65,000 (8.48) f ,sol	260,000 f	160,000 f	250,000 f	450,000 f	LQM S4UL
	Aliphatic								
	EC 5-6	2.5%	78	78	1,700	5,900 (558) sol	590,000	130,000 (558) sol	LQM S4UL
	EC>6-8	2.5%	230	230	5,600	17,000 (322) sol	610,000	220,000 (322) sol	LQM S4UL
	EC>8-10	2.5%	65	65	770	4,800 (190) vap	13,000	18,000 (190) vap	LQM S4UL
	EC>10-12	2.5%	330 (118) vap	330 (118) vap	4,400	23,000 (118) vap	13,000	23,000 (118) vap	LQM S4UL
	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	LQM S4UL
	EC>16-35	2.5%	92,000 (21)	92,000 (21) f ,sol	270,000 f	1,700,000 f	250,000 f	480,000 f	LQM S4UL
	EC>35-44	2.5%	92,000 (21)	92,000 (21) f ,sol	270,000 f	1,700,000 f	250,000 f	480,000 f	LQM S4UL
	Aliphatic								
	EC 5-6	6%	160	160	3,900	12,000 (1,150) sol	600,000	180,000 (1,150)	LQM S4UL
	EC>6-8	6%	530	530	13,000	40,000 (736) sol	620,000	320,000 (736) sol	LQM S4UL
	EC>8-10	6%	150	150	1,700	11,000 (451) vap	13,000	21,000 (451) vap	LQM S4UL
	EC>10-12	6%	760 (283) vap	760 (283) vap	7,300	47,000 (283) vap	13,000	24,000 (283) vap	LQM S4UL
	EC>12-16	6%	4,300 (142) sol	4,400 (142) sol	13,000	90,000 (142) sol	13,000	26,000 (142) sol	LQM S4UL
	EC>16-35	6%	110,000f	110,000f	270,000 f	1,800,000f	250,000 f	490,000 f	LQM S4UL
	EC>35-44	6%	110,000f	110,000f	270,000 f	1,800,000f	250,000 f	490,000 f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	1%	70	370	13	26,000 (1,220) sol	56,000	76,000 (1,220) sol	LQM S4UL
	EC>7-8(toluene)	1%	130	860	22	56,000 (869) vap	56,000	87,000 (869) vap	LQM S4UL
	EC>8-10	1%	34	47	8.6	3,500 (613) vap	5,000	7,200 (613) vap	LQM S4UL
	EC>10-12	1%	74	250	13	16,000 (364) sol	5,000	9,200 (364) sol	LQM S4UL
	EC>12-16	1%	140	1,800	23	36,000 (169)sol	5,100	10,000	LQM S4UL
	EC>16-21	1%	260 f	1,900 f	46 f	28,000 f	3,800 f	7,600 f	LQM S4UL
	EC>21-35	1%	1,100 f	1,900 f	370 f	28,000 f	3,800 f	7,800 f	LQM S4UL
	EC>35-44	1%	1,100 f	1,900 f	370f	28,000 f	3,800 f	7,800 f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	2.5%	140	690	27	46,000 (2,260) sol	56,000	84,000 (2,260) sol	LQM S4UL
	EC>7-8(toluene)	2.5%	290	1,800	51	110,000 (1,920) sol	56,000	95,000 (1,920) sol	LQM S4UL
	EC>8-10	2.5%	83	110	21	8,100 (1,500) vap	5,000	8,500 (1,500) vap	LQM S4UL
	EC>10-12	2.5%	180	590	31	28,000 (899) sol	5,000	9,700 (899) sol	LQM S4UL
	EC>12-16	2.5%	330	2,300 (419) sol	57	37,000	5,100	10,000	LQM S4UL
	EC>16-21	2.5%	540 f	1,900 f	110 f	28,000 f	3,800 f	7,700 f	LQM S4UL
	EC>21-35	2.5%	1,500 f	1,900 f	820 f	28,000 f	3,800 f	7,800 f	LQM S4UL
	EC>35-44	2.5%	1,500 f	1,900 f	820 f	28,000 f	3,800 f	7,800 f	LQM S4UL
	Aromatic								
	EC5-7(benzene as non-	6%	300	1,400	57	86,000 (4,710) sol	56,000	92,000 (4,710) sol	LQM S4UL
	EC>7-8(toluene)	6%	660	3,900	120	180,000 (4,360)vap	56,000	100,000 (4,360)	LQM S4UL
	EC>8-10	6%	190	270	51	17,000 (3,580) vap	5,000	9,300 (3,580) vap	LQM S4UL
	EC>10-12	6%	380	1,200	4	34,000 (2,150) sol	5,000	10,000	LQM S4UL
	EC>12-16	6%	660	2,500	130	38,000	5,100	10,000	LQM S4UL
	EC>16-21	6%	930f	1,900 f	260 f	28,000 f	3,800 f	7,800 f	LQM S4UL
	EC>21-35	6%	1,700 f	1,900 f	1,600 f	28,000 f	3,800 f	7,900 f	LQM S4UL
	EC>35-44	6%	1,700 f	1,900 f	1,600 f	28,000 f	3,800 f	7,900 f	LQM S4UL
	Aliphatic +Aromatic >EC44	1%	1,600 f	1,900 f	1,200 f	28,000 f	3,800 f	7,800 f	LQM S4UL
		2.5%	1,800 f	1,900 f	2,100 f	28,000 f	3,800 f	7,800 f	LQM S4UL
		6%	1,900 f	1,900 f	3,000 f	28,000 f	3,800 f	7,900 f	LQM S4UL

	Contaminant	SOM	Res +	Res -	Allot.	Comm.	POSresi	POSpark	Source
Chloalkanes and Alkenes & Explosives	1,2 Dichloroethane (DCA)	1%	0.0071	0.0092	0.0046	0.67	29	21	LQM S4UL
		2.5%	0.0110	0.0130	0.0083	0.97	29	24	LQM S4UL
		6%	0.0190	0.0230	0.0160	1.7	29	28	LQM S4UL
	1,1,1 Trichloroethane (TCA)	1%	8.8	9.0	48	660	140,000	57,000 (1,425) vap	LQM S4UL
		2.5%	18	18	110	1,300	140,000	76,000 (2,915) vap	LQM S4UL
		6%	39	40	240	3,000	140,000	100,000 (6,392)	LQM S4UL
	1,1,2,2-Tetrachloroethanes (PCA)	1%	1.6	3.9	0.41	270	1,400	1,800	LQM S4UL
		2.5%	3.4	8.0	0.89	550	1,400	2,100	LQM S4UL
		6%	7.5	17	2.0	1,100	1,400	2,300	LQM S4UL
	1,1,1,2-Tetrachloroethanes (PCA)	1%	1.2	1.5	0.79	110	1,400	1,500	LQM S4UL
		2.5%	2.8	3.5	1.9	250	1,400	1,800	LQM S4UL
		6%	6.4	8.2	4.4	560	1,400	2,100	LQM S4UL
	Tetrachloroethene (PCE)	1%	0.31	0.32	2.00	24	3,200	1400	DEFRA C4SL
		2.5%	0.70	0.71	4.8	55	3,300	1900	DEFRA C4SL
		6%	1.60	1.60	11.0	130	3,400	2,500	DEFRA C4SL
	Tetrachloromethane (carbon tetrachloride)	1%	0.03	0.03	0.45	2.9	890	190	LQM S4UL
		2.5%	0.06	0.06	1.0	6.3	920	270	LQM S4UL
		6%	0.13	0.13	2.4	14	950	400	LQM S4UL
	Trichloroethene (TCE)	1%	0.009	0.010	0.032	0.7	76.0	41.0	DEFRA C4SL
		2.5%	0.020	0.020	0.072	1.5	78.0	51.0	DEFRA C4SL
		6%	0.043	0.045	0.160	3.4	79.0	69.0	DEFRA C4SL
	cis 1,2-dichloroethene	1%	0.46	0.50	0.890	38	3,800	2,000	DEFRA C4SL
		2.5%	0.78	0.84	1.70	64	3,800	2,400	DEFRA C4SL
		6%	1.50	1.60	3.60	120	3,900	3,100	DEFRA C4SL
	Trichloromethane (chloroform)	1%	0.91	1.2	0.42	99	2,500	2,600	LQM S4UL
		2.5%	1.7	2.1	0.83	170	2,500	2,800	LQM S4UL
		6%	3.4	4.2	1.7	350	2,500	3,100	LQM S4UL
	Trans-1,2 Dichloroethene	1%	0.9	0.9	3.7	69	13,000	5,600	DEFRA C4SL
		2.5%	1.6	1.7	7.5	120	13,000	7,000	DEFRA C4SL
		6%	3.3	3.4	16.0	260	13,000	9,100	DEFRA C4SL
	Chloroethene (vinyl chloride)	1%	0.006	0.015	0.0017	1.1E+00	7.8	18.0	DEFRA C4SL
		2.5%	0.010	0.019	0.0031	1.4E+00	7.8	19.0	DEFRA C4SL
		6%	0.017	0.029	0.0058	2.20	7.8	19.0	DEFRA C4SL
	2,4,6-Trinitritoluene (TNT)	1%	1.6	65	0.24	1,000	130	260	LQM S4UL
		2.5%	3.7	66	0.58	1,000	130	270	LQM S4UL
		6%	8.1	66	1.4	1,000	130	270	LQM S4UL
	RDX	1%	120	13,000	17	210,000	26,000	49,000 (18.7) sol	LQM S4UL
		2.5%	250	13,000	38	210,000	26,000	51,000	LQM S4UL
		6%	540	13,000	85	210,000	27,000	53,000	LQM S4UL
	HMX	1%	5.7	6,700	0.86	110,000	13,000	23,000 (0.35) vap	LQM S4UL
		2.5%	13	6,700	1.9	110,000	13,000	23,000 (0.39) vap	LQM S4UL
		6%	26	6,700	3.9	110,000	13,000	24,000 (0.48) vap	LQM S4UL
Pesticides	Aldrin	1%	5.7	7.3	3.2	170	18	30	LQM S4UL
		2.5%	6.6	7.4	6.1	170	18	31	LQM S4UL
		6%	7.1	7.5	9.8	170	18	31	LQM S4UL
	Dieldrin	1%	0.97	7.0	0.17	170	18	30	LQM S4UL
		2.5%	2.0	7.3	0.41	170	18	30	LQM S4UL
		6%	3.5	7.4	0.96	170	18	31	LQM S4UL
	Atrazine	1%	3.3	610	0.5	9,300	1,200	2,300	LQM S4UL
		2.5%	7.8	620	1.2	9,400	1,200	2,400	LQM S4UL
		6%	17.4	620	2.7	9,400	1,200	2,400	LQM S4UL
	Dichlorvos	1%	3.2E-02	6.4	4.9E-03	140	16	26	LQM S4UL
		2.5%	6.6E-02	6.5	1.0E-02	140	16	26	LQM S4UL
		6%	0.14	6.6	2.2E-02	140	16	27	LQM S4UL
	Endosulfanns (2 isomers)	1%	7.4	160 (3.0E-03) vap	1.2	5,600 (3.0E-03) vap	1,200	2,300	LQM S4UL
		2.5%	18	280 (7.0E-03) vap	2.9	7,400 (7.0E-03) vap	1,200	2,400	LQM S4UL
		6%	41	410 (1.6E-02) vap	6.8	8,400 (1.6E-02) vap	1,200	2,500	LQM S4UL
	Hexachlorocyclohexane (3 isomers), inc Lindane	1%	8.5E-02	3.7	1.3E-02	65	8.1	15	LQM S4UL
		2.5%	0.2	3.8	3.2E-02	65	8.1	15	LQM S4UL
		6%	0.46	3.8	7.7E-02	65	8.1	16	LQM S4UL
Chlorobenzenes	Chlorobenzene	1%	0.46	0.46	5.9	56	11,000	1,300 (675) sol	LQM S4UL
		2.5%	1.0	1.0	14	130	13,000	2,000 (1,520) sol	LQM S4UL
		6%	2.4	2.4	32	290	14,000	2,900	LQM S4UL
	Dichlorobenzenes (3 isomers)	1%	23	24	94	2,000 (571) sol	90,000	24,000 (571) sol	LQM S4UL
		2.5%	55	57	230	4,800 (1,370) sol	95,000	36,000 (1,370) sol	LQM S4UL
		6%	130	130	540	11,000 (3,240) sol	98,000	51,000 (3,270) sol	LQM S4UL
	Trichlorobenzenes (3 isomers)	1%	2.6	2.6	55	220	15,000	1,700 (318) vap	LQM S4UL
		2.5%	6.4	6.4	140	530	17,000	2,600 (786) vap	LQM S4UL
		6%	15	15	320	1,300	19,000	4,000 (1,880) vap	LQM S4UL
	Tetrachlorobenzenes (3 isomers)	1%	0.66	0.75	0.38	49 (39.4) vap	78	110 (39) vap	LQM S4UL
		2.5%	1.6	1.9	0.90	120 (98.1) vap	79	120	LQM S4UL
		6%	3.7	4.3	2.2	240 (235) vap	79	130	LQM S4UL
	Pentachlorobenzene	1%	5.8	19	1.2	640 (43.0) sol	100	190	LQM S4UL
		2.5%	12	30	3.1	770 (107) sol	100	190	LQM S4UL
		6%	22	38	7.0	830	100	190	LQM S4UL
	Hexachlorobenzene	1%	1.8 (0.20) vap	4.1 (0.20) vap	0.47	110 (0.20) vap	16	30	LQM S4UL
		2.5%	3.3 (0.50) vap	5.7 (0.50) vap	1.1	120	16	30	LQM S4UL
		6%	4.9	6.7 (1.2) vap	2.5	120	16	30	LQM S4UL

Generic Assessment Criteria Values

	Contaminant	SOM	Res +	Res -	Allot.	Comm.	POSresi	POSpark	Source
Chlorophenol	Chlorophenols (4 congeners)	1%	0.87 [g]	94	0.13 [g]	3,500	620	1,100	LQM S4UL
		2.5%	2.0	150	0.30	4,000	620	1,100	LQM S4UL
		6%	4.5	210	0.70	4,300	620	1,100	LQM S4UL
	Pentachlorophenol	1%	0.22	27 (16.4) [vap]	3.0E-02	400	60	110	LQM S4UL
		2.5%	0.52	29	8.0E-02	400	60	120	LQM S4UL
		6%	1.2	31	0.19	400	60	120	LQM S4UL
Others	Carbon Disulphide	1%	0.14	0.14	4.8	11	11,000	1,300	LQM S4UL
		2.5%	0.29	0.29	10	22	11,000	1,900	LQM S4UL
		6%	0.62	0.62	23	47	11,000	2,700	LQM S4UL
	Hexachlorobutadiene	1%	0.29	0.32	0.25	31	25	48	LQM S4UL
		2.5%	0.7	0.78	0.61	66	25	50	LQM S4UL
		6%	1.6	1.8	1.4	120	25	51	LQM S4UL
	Phenol	1%	120	440 (460)	23	440 [dir] (26,000)	440 [dir] (10,000)	440 [dir] (7,600)	LQM S4UL
		2.5%	200	690	42	690 [dir] (30,000)	690 [dir] (10,000)	690 [dir] (8,300)	LQM S4UL
		6%	380	1,200	83	1,300 [dir] (34,000)	1,300 [dir] (10,000)	1,300 [dir] (9,300)	LQM S4UL

sol/vap = solubility/vapour limit (potenitally use if free product identified, although highly conservative)
*=naphthalene C4SL exceeds the CLEA calculated soil saturation concentration (76 mg kg-1 for 1% SOM,
183 mg kg-1 for 2.5% SOM and 432 mg kg-1 for 6% SOM)
f = oral, dermal and inhalation exposures compared to oral HCV
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-tetrachlorophenol

Based across the UK with offices in Manchester, Liverpool, Swindon and Glasgow.

Manchester (Head Office)
Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

t: 0161 763 7200
e: info@thelkgroup.com

Manchester
84 Silk Street
Ancoats
Manchester
M4 6BJ

t : 0161 763 7200
e : info@thelkgroup.com

Liverpool
Unit 10
12 Jordan Street
Baltic Triangle
Liverpool
L1 0BP
t: 0161 763 7200
e: info@thelkgroup.com

Glasgow
Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

t: 0141 773 6269
e: info@thelkgroup.com

Swindon
39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

t : 01793 987 390
e : info@thelkgroup.com

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