



Phase III Remediation & Validation Strategy Proposals

At

Cables Way,
Prescot

Client: John F Beesley

Reference: 30259-SUT-ZZ-00-RP-G-703-0001

Date: March 2022

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SUTCLIFFE INVESTIGATIONS

Phase III Remediation & Validation Strategy Proposals

Document Control Sheet

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Signatures:					

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Table of Contents

1	Introduction	1
1.1	Terms of Reference	1
1.2	Development Proposal & Legislative Context	1
1.3	Aims & Objectives	2
2	Land Contamination Risks	3
2.1	Revised Conceptual Model	3
2.2	Discounted Contaminant Linkages	3
2.3	Remaining Potential Contaminant Linkages	3
3	Remediation Strategy	5
3.1	Overview	5
3.2	Additional Works Required to Assess Outstanding Contaminant Linkages	5
3.3	Regulatory Approval	5
3.4	Remedial Works	5
3.5	Proposed Capping Thickness – Soft Landscaping Area	6
3.6	Soil Validation Sampling & Testing	6
3.7	Soil Validation Criteria	8
3.8	Capping Layer Depth Validation	8
3.9	Site Completion Report	8
3.10	Additional Remedial Requirements	8
	Appendices	A
	Appendix A – Analytical Results	A
	Appendix B – Gas Protection Membrane Specification & Membrane Validation Proforma	B
	Appendix C – Council Validation Requirements	C
	Drawings	D
	Drawing Ref. – 30259-SUT-ZZ-00-DR-G-720-0002 – Site Investigation on Existing Layout	D
	Drawing Ref. – 30259-SUT-ZZ-00-DR-G-720-0001 – Site Investigation on Proposed Layout	E

1 Introduction

1.1 Terms of Reference

Sutcliffe Investigations were instructed by John F Beesley to design an appropriate remediation strategy for the proposed development at Site Area 1 & Site Area 2, Cables Way, Prescott, L34 1QG.

The site is centred on National Grid Reference (NGR) 346610, 392180. The site area is approximately 1.88ha.

This report provides details on the protocols to be adopted during remedial works required to be undertaken on the site to ensure that any risks associated with long term human health are mitigated.

The soil sampling strategy and chemical analysis proposals set out in this document are produced in light of a Phase I Preliminary Risk Assessment and Phase II Ground Assessment produced by Sutcliffe Investigations for this site. This report and the outlined strategy should therefore be read in conjunction with:

 30259LG – R01 – Phase I PRA Report (March 2019)

 30259-SUT-ZZ-00-RP-G-702-0002 – Phase II Ground Assessment Report (July 2021)

1.2 Development Proposal & Legislative Context

Development Proposal

The proposed layout is shown in Life Architecture Limited Drawing No. 201a and 201e. This report has been prepared in support of a planning application to develop the site for commercial / industrial uses with associated soft landscaping areas and infrastructure. Based on information received from the architect, it is anticipated that site levels will be retained to facilitate the proposed development option.

Pre-Development Works

The earliest available historical map (1850) indicated that the site was undeveloped and largely under agricultural usage. Later from 1927 a building was noted on the eastern section of the site, likely associated with the cable works identified. The development associated with the cable works expanded and grew over time and also included an electricity substation.

Legislative Context

The presence of contaminants which may pose a risk to human health or the environment, is a material planning consideration and it remains the responsibility of the developer to ensure safe development.

For planning it should be considered whether the site is suitable for its new use, and the responsibility for securing a safe development (including cumulative effects of pollution on health, and the potential sensitivity of the proposed development to adverse effects from

pollution,) rests with the developer and/or landowner. Planning is concerned with the site's proposed use not its current use, where the amount of contamination is expected to be low relative to the level of risk. This is the opposite to Part 2A which considers high levels (significant harm) and the current use of the site.

Section 57 of the Environment Act 1995 adds Part 2A (ss.78A-18YC) to the Environmental Protection Act 1990 and contains the legislative framework for identifying and dealing with contaminated land. Where development is undertaken on land which may be affected by contamination, the National Planning Policy Framework, paragraph 120 to 122 considers pollution and remediation. This links the contaminated land regime within the development process.

1.3 Aims & Objectives

This report provides details of the remedial options applicable for a commercial / industrial end use and areas of soft landscaping.

It also provides procedures to be implemented, in order to verify the remedial measures. The remediation strategy report is required to provide information to regulatory authorities to satisfy planning conditions relating to contaminated land aspects on the site.

This document outlines Sutcliffe Investigations proposals for Remediation Strategies, and includes the following:

-  Validation and verification work relating to “hotspot” removal required on the development site.
-  Validation of installed gas protection measures compliant with a Characteristic Situation 2.
-  Validation of imported top and sub soils required to facilitate landscape proposals.

2 Land Contamination Risks

2.1 Revised Conceptual Model

Based on the findings of the human health risk assessment as completed by Sutcliffe, the conceptual model has been revised and has been presented within the Ground Assessment Report ref. 30259-SUT-ZZ-00-RP-G-701-0002.

2.2 Discounted Contaminant Linkages

Groundwater Resources

No contaminant linkages remain for groundwater; therefore, no further action is required.

Surface Water Resources

No contaminant linkages remain for surface water; therefore, no further action is required.

2.3 Remaining Potential Contaminant Linkages

Long Term Human Health

There were no contaminants present in soil analysed that exceed its threshold values for Commercial/Industrial land use.

Asbestos was detected within the soils at WS104 and TP103 which pose a risk long term Human Health. Construction workers may be exposed via inhalation of soil / dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.

Chemical analysis certificates are presented in *Appendix A*.

Ground Gas

Based on the quantitative and qualitative assessment of the risk associated with ground gas, the site should be classified as a **Characterisation Situation 2** indicating gas protective measures are required.

Using BS8485:2015+A1:2019, “Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings” a total of 2.5 points is required for the proposed end use, *Table 2.1* details the protection measures required to achieve this point total.

Table 2.1: BS8485 (2015+A1:2019) Point Score Summary

GAS PROTECTION SCORES FOR THE STRUCTURAL BARRIER	
Floor and substructure design	SCORE
Precast suspended segmental subfloor (i.e. beam and block)	0

GAS PROTECTION SCORES FOR VENTILATION PROTECTION MEASURES			
Protection Element System		Comments	SCORE
Passive sub floor dispersal layer: Media used to provide the dispersal layer are:  Clear void;  Polystyrene void former blanket;  Geocomposite void former blanket;  No-fines gravel layer with gas drains;  No-fines gravel layer.	Very good performance	 The ventilation effectiveness of different media depends on a number of different factors including the transmissivity of the medium, the width of the building, the side ventilation spacing and type and the thickness of the layer.  The selected score should be assigned taking into account the recommendations in Annex B of BS8485:2015.  Passive ventilation should be designed to meet at least "good performance".	2.5

GAS PROTECTION SCORE FOR THE GAS RESISTANT MEMBRANE		
Protection Element System	Comments	SCORE
Gas resistant membrane meeting all of the following criteria:  Sufficiently impervious to the gases with a methane gas transmission rate <40.0 ml/day/m²/atm (average) for sheet and joints (tested in accordance with BS ISO 15105-1 manometric method);  Sufficiently durable to remain serviceable for the anticipated life of the building and duration of gas emissions;  Sufficiently strong to withstand in-service stresses (e.g. settlement if placed below a floor slab);  Sufficiently strong to withstand the installation process and following trades until covered (e.g. penetration from steel fibres in fibre reinforced concrete, penetration of reinforcement ties, tearing due to working above it, dropping tools etc);  Capable, after installation, of providing a complete barrier to the entry of the relevant gas; and,  Verified in accordance with CIRIA C735.	The performance of membranes is heavily dependent on the quality and design of the installation, resistance to damage after installation and integrity of joints. For example, a minimum 0.40mm thickness (equivalent to 370g/m² for polyethylene) reinforced membrane (virgin polymer) meets the performance criteria opposite. If a membrane is installed that does not meet all the criteria opposite, then the score is zero.	2

Gas protection measures should be as prescribed in BRE Report 414 (Johnson, 2001). Membranes should always be fitted by a specialist contractor.

Ventilation of the sub-floor voids should facilitate a minimum of one complete volume change per 24 hours.

Certification that these passive protection measures have been installed correctly should be provided.

An example of a suitable gas protection membrane and a membrane validation pro forma is presented as *Appendix B*.

3 Remediation Strategy

3.1 Overview

The recommendations provided below are considered appropriate for the site based on the site investigation and the combined risk assessments completed by Sutcliffe (controlled waters, ground gas and long-term human health) and details recommended remediation and validation works.

3.2 Additional Works Required to Assess Outstanding Contaminant Linkages

No additional works are required to assess outstanding contaminant linkage.

3.3 Regulatory Approval

Consultation with Prescott Town Contaminated Land Officer is recommended regarding the acceptability of the validation proposal.

Council validation requirements are presented in *Appendix C*.

3.4 Remedial Works

Development Area

In the areas of the site (WS104 & TP103) where asbestos was identified, a Hotspot removal exercises should be undertaken to remove the risk. This will include the remove of the strata identified to contain the asbestos with validation sampling conducted within each face and the base of the resulting excavation to prove the remove of the impacted material.

When working in areas where asbestos has been identified and as part of the work to remove this material from site, all works must be undertaken in line with JIWG / CLAIRE CAR-Soil 2016 to ensure that works which are licensable, non-licensable and non-notifiable are correctly defined when undertaken.

This will ensure that all identified asbestos is removed in a safe and correct manner to a suitable waste facility in line with its classification.

Human Health - Ground Gas

Ground gas monitoring has indicated elevated levels of Carbon Dioxide on site and due to the highest recorded concentrations of these it is recommended that the site is classified as an Classification 1 as outlined in CIRIA C665. As such gas protection measures will be required as part of the development of the site.

Gas protection measures should include a ventilated sub-floor void and a suitable gas membrane in accordance with the requirements of BS8485:2015+A1:2019.

An example of a suitable gas protection membrane and a membrane validation pro forma are presented in Appendix B.

The above specified ground gas protection measures will also address the requirement for radon protective measures onsite.

3.5 Proposed Capping Thickness – Soft Landscaping Area

While no contamination was encountered during the Arc Environmental soil testing, it is considered that a 300mm cover layer of clean validation Topsoil or Topsoil / Subsoil combination will be required for private gardens and soft-landscaped areas. This cover layer is required in line with NHBC requirements for suitable growing mediums for residential gardens and should be chemically tested and screened to ensure that no risk is posed to the proposed end-users.

The capping layer can either comprise 300mm of Topsoil, or a combination of 150mm Topsoil underlain by 150mm of Subsoil.

3.6 Soil Validation Sampling & Testing

Soil Sampling

In accordance with the current requirements of the regulatory authorities, validation samples will be collected from all materials that are to be subject to movement and reuse under the protocols outlined within this Remediation Strategy, or for materials to be imported onto site to facilitate the proposed commercial / industrial enduse.

Upon removal of the hotspot of unsuitable made ground, validation samples will be collected from the base and sidewalls (numbers dependent on the size of the hot spot) of the excavation to reasonably demonstrate no residual impact to the underlying and surrounding strata.

Soil samples destined for chemical analysis will be collected at regular intervals in appropriate sampling containers. All samples will subsequently be stored in cooled boxes prior to submission to a UKAS / MCERTS accredited laboratory.

All samples will be collected using appropriate PPE and sampling equipment that will be cleaned at each sampling location.

Where material is found to contain concentrations of potential contaminants at levels in excess of the site-specific screening criteria the excavation will be extended, and further sampling undertaken.

The sampling frequency for materials to be managed under the Remediation Strategy is presented within *Table 4.1* and *Table 4.2*.

Table 4.1: Testing Frequency for Material Use on Site (Imported)

Material Use	Testing Frequency
Subsoil Greenfield Source (<i>450mm garden cover</i>)	1 Sample per 200m ³
Subsoil Brownfield Source (<i>450mm garden cover</i>)	1 Sample per 50m ³
Topsoil Greenfield Source (<i>150mm garden cover</i>)	1 Sample per 200m ³
Topsoil Brownfield Source (<i>150mm garden cover</i>)	1 Sample per 50m ³

Table 4.2: Testing Frequency for Material Use on Site (Site Generated)

Material Use	Testing Frequency
Site Generated 6F2	1 Sample Per 1000m ³
Site Won Made Ground General Backfill	1 Sample Per 250m ³
Site Won Natural Backfill	1 Sample Per 2000m ³
Site generated Sub-Soil (450mm garden cover)	1 Sample Per 250m ³
Site Generated Topsoil Cover (150mm garden cover)	1 Sample per 50m ³
Hotspot Validation Samples	1 Sample per 10m of linear excavation to base and sidewall.

Imported Soil Validation Testing

Imported material needs to be compliant with BS3882: 2015 Specification for Topsoil and BS8601: 2013 Specification for Subsoil and requirements for use.

The typical testing suite will comprise:

Arsenic, boron, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate, pH, USEPA PAH 16, asbestos (presence or absence) and organic matter.

Where the source is 'brownfield' or to site source unknown, the soil will additionally be tested for the following:

Speciated banded petroleum hydrocarbons (TPHCWG), benzene, toluene, ethylbenzene and xylene (BTEX), MTBE, cyanide suite, boron and phenol.

Site Generated Soil Validation Testing

The typical testing suite will comprise:

Arsenic, boron, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate, pH, USEPA PAH 16, asbestos (presence or absence) and organic matter.

Where the source is 'brownfield' or to site source unknown, the soil will additionally be tested for the following:

Speciated banded petroleum hydrocarbons (TPHCWG), benzene, toluene, ethylbenzene and xylene (BTEX), MTBE, cyanide suite, boron and phenol.

Dependant on this additional sampling and assessment consideration will be given to its emplacement within garden areas.

3.7 Soil Validation Criteria

Generic Soil Assessment Criteria – Imported Top & Sub soils

The results of the topsoil and subsoil samples may be contrasted to contemporary UK soil assessment criteria.

With regards to the soil risk assessment for imported top and sub soils Sutcliffe will use the following hierarchy:

-  LQM Suitable 4 Use Levels (S4ULs).
-  ATRISK Soil Screening Values (SSVs) and DEFRA Generic Assessment Criteria (GACs).
-  DEFRA Category 4 Screening Levels (C4SLs) for Lead.

Based upon the above we will use the LQM S4ULs. These use similar assumptions and land uses to C4SLs. However, toxicological information has been based on 'minimal risk' as per previous guidelines and assumptions.

If contaminants are not present as S4ULs, then we propose to use ATRISK SSVs or CL:AIRE GACs. These follow the 'minimal' risk principle and more stringent exposure parameters and will be conservative. The only exception to this is for Lead where the C4SL is used.

3.8 Capping Layer Depth Validation

The depth of the capping layer on site will be demonstrated by excavating a hole and collecting photographic evidence. The photographs will show the location of the validation, the downhole view and the depth using a levelling staff.

3.9 Site Completion Report

The site completion report will include details of the imported soil validation and photographs of the soil depth placed across the site.

The site wide planning conditions may only be discharged once Prescott Town Council are satisfied that, in accordance with the National Planning Policy Framework (NPPF):

-  The site is suitable for its new use
-  Adequate site investigation information, prepared by a competent person, is presented.

3.10 Additional Remedial Requirements

Site Material Management Plan (SMMP)

It is advised that an appropriate SMMP is designed for the scheme and prior to the commencement of any works and maintained throughout the development of the scheme. All waste transfer notes will need to be retained and documented to allow ease of review by the regulators.

Material Reuse

Should any material from the site be reused an assessment for suitability for use would be required. Sampling protocols to be implemented on receipt of agreement with the Liverpool Council EHD are detailed in *Section 3*.

Unexpected Contamination

In the event that during the development works if unexpected contamination is identified then all works should cease and the appointed environmental consultant notified.

Documentation

On completion of the remedial works detailed within *Section 3.4* of this report, a Phase IV Completion Report will be required and will need to include the following documentation:

-  Waste consignment notes for contaminated material removed from site, including details of the recipient waste facility.
-  Photographic record and validation test results of the Hotspot removal exercise.
-  Details of soil validation testing, including chemical testing and photographic record of the depth validation.
-  Consignment notes for top/sub soils imported to site.
-  Photographic log of the gas membrane installation.
-  Independent certification of guarantee from third party confirming the suitability of gas membrane installation.

Appendix A – Analytical Results

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 21/03535/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 21/03535
Issue Number: 2

Date: 29 April, 2021

Client: Sutcliffe
18-20 Harrington Street
Liverpool
L2 9QA

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin; J Smith
Project Name: Cables Way, Prescot
Project Ref: 30259
Order No: 8567
Date Samples Received: 01/04/21
Date Instructions Received: 06/04/21
Date Analysis Completed: 28/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
% Moisture at <40C _A	11.0	-	11.8	-	10.4	9.1	17.5	% w/w	0.1	A-T-044
% Stones >10mm _A	22.1	<0.1	13.1	<0.1	<0.1	31.0	16.4	% w/w	0.1	A-T-044
pH _D ^{M#}	8.53	-	7.22	-	9.93	9.00	8.45	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.05	-	<0.01	-	0.04	0.06	0.02	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	650	-	<200	-	1100	610	790	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	-	7	-	<5	<5	10	mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	20	-	<5	-	<5	<5	<5	mg/kg	5	A-T-029s
Organic matter _D ^{M#}	3.3	-	2.9	-	2.5	2.2	4.8	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	4	-	<1	-	2	8	4	mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	-	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.8	-	1.7	-	1.2	1.7	0.8	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	108	-	103	-	107	414	75	mg/kg	1	A-T-024s
Chromium _D ^{M#}	17	-	20	-	18	20	13	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	17	-	20	-	18	20	13	mg/kg	1	Calc
Lead _D ^{M#}	80	-	29	-	66	97	140	mg/kg	1	A-T-024s
Mercury _D	1.66	-	<0.17	-	0.63	0.39	0.40	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	15	-	33	-	22	19	12	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	61	-	87	-	119	96	122	mg/kg	5	A-T-024s
Leachate Prep NRA (10:1) _A	-	-	*	-	*	*	-			A-T-001
pH (leachable) _A [#]	-	-	7.30	-	6.57	8.44	-	pH	0.01	A-T-031w
Sulphate (leachable) _A [#]	-	-	4.41	-	8.29	4.29	-	mg/l	1	A-T-026w
Cyanide (total) (leachable) _A [#]	-	-	<0.005	-	<0.005	<0.005	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	mg/l	0.01	A-T-050w
Sulphide (leachable) _A	-	-	<0.1	-	<0.1	<0.1	-	mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	-	-	2.2	-	11.4	2.2	-	mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	-	-	<1	-	<1	19	-	µg/l	1	A-T-025w
Boron (leachable) _A [#]	-	-	<10	-	<10	33	-	µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	-	-	<1	-	<1	<1	-	µg/l	1	A-T-025w
Copper (leachable) _A [#]	-	-	8	-	3	33	-	µg/l	1	A-T-025w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
Chromium (leachable) _A [#]	-	-	<1	-	<1	5	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	-	<0.10	-	<0.10	<0.10	-	mg/l	0.05	A-T-040w
Chromium (trivalent) (10:1 leachable)	-	-	<0.10	-	<0.10	<0.10	-	mg/l	0.05	Calc
Lead (leachable) _A [#]	-	-	1	-	2	14	-	µg/l	1	A-T-025w
Mercury (leachable) _A [#]	-	-	<0.1	-	<0.1	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	-	-	<1	-	2	<1	-	µg/l	1	A-T-025w
Selenium (leachable) _A [#]	-	-	<1	-	<1	<1	-	µg/l	1	A-T-025w
Sulphur (elemental/free) (leachable) _A	-	-	<0.1	-	<0.1	<0.1	-	mg/l	0.1	A-T-029w
Zinc (leachable) _A [#]	-	-	6	-	4	9	-	µg/l	1	A-T-025w
TPH total (>C6-C40) (leachable) _A	-	-	<80	-	254	<80	-	µg/l	80	A-T-007w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	NAD	-	Chrysotile	NAD	NAD			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	Loose Fibres	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	-	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	-	-	-	-	0.006	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	0.04	-	<0.01	-	0.38	0.04	0.07	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	-	<0.01	-	<0.01	<0.01	0.02	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.06	-	<0.02	-	0.63	0.09	0.16	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.17	-	<0.04	-	2.01	0.40	0.81	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.26	-	<0.04	-	2.09	0.51	0.89	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.23	-	<0.05	-	2.08	0.52	0.87	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.15	-	<0.05	-	1.05	0.27	0.44	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.10	-	<0.07	-	0.79	0.19	0.36	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.23	-	<0.06	-	2.22	0.47	0.90	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	-	<0.04	-	0.20	0.05	0.09	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.41	-	<0.08	-	4.61	0.80	1.58	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.03	-	<0.01	-	0.27	0.02	0.05	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.16	-	<0.03	-	1.13	0.30	0.49	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	-	<0.03	-	0.26	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.24	-	<0.03	-	2.57	0.32	0.64	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.39	-	<0.07	-	4.92	0.80	1.55	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	2.47	-	<0.08	-	25.2	4.78	8.92	mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
PAH-16MS (leachable)										
Acenaphthene (leachable) _A	-	-	<0.01	-	<0.01	0.06	-	µg/l	0.01	A-T-019w
Acenaphthylene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(a)anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(a)pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Chrysene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Fluorene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Naphthalene (leachable) _A	-	-	0.10	-	0.05	0.15	-	µg/l	0.01	A-T-019w
Phenanthrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Total PAH-16MS (leachable) _A	-	-	0.10	-	0.05	0.21	-	µg/l	0.01	A-T-019w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	-	<1	-	8	<1	1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	4	-	<1	-	18	3	3	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	29	-	<1	-	94	23	37	mg/kg	1	A-T-055s
Ali >C35-C44 _A	24	-	<1	-	119	15	34	mg/kg	1	A-T-055s
Total Aliphatics _A	57	-	<1	-	239	42	76	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	-	<1	-	2	<1	1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	2	-	<1	-	2	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	46	-	<1	-	10	6	3	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	184	-	<1	-	25	9	11	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	296	-	<1	-	68	21	43	mg/kg	1	A-T-055s
Aro >C35-C44 _A	19	-	<1	-	66	6	22	mg/kg	1	A-T-055s
Total Aromatics _A	546	-	<1	-	173	44	80	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	603	-	<1	-	412	86	156	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	27.28	-	15.68	-	24.28	27.90	% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
% of total sample Paper >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	72.72	-	84.32	-	75.72	72.10	% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil) [#]	-	0.88	-	0.70	-	1.25	1.20	% w/w	0.03	Calc-no stones

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Sutcliffe, 18-20 Harrington Street, Liverpool, L2 9QA

Project No: 21/03535

Project: Cables Way, Prescott

Date Received: 06/04/2021 (am)

Clients Project No: 30259

Cool Box Temperatures (°C): 10.3

Lab Sample ID	21/03535/1	21/03535/3	21/03535/5	21/03535/6	21/03535/7
Client Sample No	1	1	1	1	1
Client Sample ID/Depth	WS105 0.20-0.60m	WS106 0.20-0.60m	WS107 0.20-0.60m	WS108 0.20-0.60m	WS109 0.20-0.60m
Date Sampled	31/03/21	31/03/21	31/03/21	31/03/21	31/03/21
Deviation Code					
F	✓	✓	✓	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/03535/1	21/03535/3	21/03535/5	21/03535/6	21/03535/7
Client Sample No	1	1	1	1	1
Client Sample ID/Depth	WS105 0.20-0.60m	WS106 0.20-0.60m	WS107 0.20-0.60m	WS108 0.20-0.60m	WS109 0.20-0.60m
Date Sampled	31/03/21	31/03/21	31/03/21	31/03/21	31/03/21
Cyanide (total)	✓	✓	✓	✓	✓
Sulphide	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/03535
Issue Number: 1

Date: 19 April, 2021

Client: Sutcliffe
18-20 Harrington Street
Liverpool
L2 9QA

Project Manager: (Use) S Hale; D Bowen; A Tosh; W Baldwin; J Smith
Project Name: Cables Way, Prescott
Project Ref: 30259
Order No: TBC
Date Samples Received: 01/04/21
Date Instructions Received: 06/04/21
Date Analysis Completed: 19/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Holly Neary-King
Client Services Supervisor

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
% Moisture at <40C _A	11.0	-	11.8	-	10.4	9.1	17.5	% w/w	0.1	A-T-044
% Stones >10mm _A	22.1	<0.1	13.1	<0.1	<0.1	31.0	16.4	% w/w	0.1	A-T-044
pH _D ^{M#}	8.53	-	7.22	-	9.93	9.00	8.45	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.05	-	<0.01	-	0.04	0.06	0.02	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	650	-	<200	-	1100	610	790	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	-	7	-	<5	<5	10	mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	20	-	<5	-	<5	<5	<5	mg/kg	5	A-T-029s
Organic matter _D ^{M#}	3.3	-	2.9	-	2.5	2.2	4.8	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	4	-	<1	-	2	8	4	mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	-	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.8	-	1.7	-	1.2	1.7	0.8	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	108	-	103	-	107	414	75	mg/kg	1	A-T-024s
Chromium _D ^{M#}	17	-	20	-	18	20	13	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	17	-	20	-	18	20	13	mg/kg	1	Calc
Lead _D ^{M#}	80	-	29	-	66	97	140	mg/kg	1	A-T-024s
Mercury _D	1.66	-	<0.17	-	0.63	0.39	0.40	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	15	-	33	-	22	19	12	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	61	-	87	-	119	96	122	mg/kg	5	A-T-024s
Leachate Prep NRA (10:1) _A	-	-	*	-	*	*	-			A-T-001
pH (leachable) _A [#]	-	-	7.30	-	6.57	8.44	-	pH	0.01	A-T-031w
Sulphate (leachable) _A [#]	-	-	4.41	-	8.29	4.29	-	mg/l	1	A-T-026w
Cyanide (total) (leachable) _A [#]	-	-	<0.005	-	<0.005	<0.005	-	mg/l	0.005	A-T-042wTCN
Phenols (total by HPLC) (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	mg/l	0.01	A-T-050w
Sulphide (leachable) _A	-	-	<0.1	-	<0.1	<0.1	-	mg/l	0.1	A-T-S2-w
DOC (leachable) _A [#]	-	-	2.2	-	11.4	2.2	-	mg/l	0.2	A-T-032w
Arsenic (leachable) _A [#]	-	-	<1	-	<1	19	-	µg/l	1	A-T-025w
Boron (leachable) _A [#]	-	-	<10	-	<10	33	-	µg/l	10	A-T-025w
Cadmium (leachable) _A [#]	-	-	<1	-	<1	<1	-	µg/l	1	A-T-025w
Copper (leachable) _A [#]	-	-	8	-	3	33	-	µg/l	1	A-T-025w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
Chromium (leachable) _A [#]	-	-	<1	-	<1	5	-	µg/l	1	A-T-025w
Chromium (hexavalent) (leachable) _A	-	-	<0.10	-	<0.10	<0.10	-	mg/l	0.05	A-T-040w
Chromium (trivalent) (10:1 leachable)	-	-	<0.10	-	<0.10	<0.10	-	mg/l	0.05	Calc
Lead (leachable) _A [#]	-	-	1	-	2	14	-	µg/l	1	A-T-025w
Mercury (leachable) _A [#]	-	-	<0.1	-	<0.1	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable) _A [#]	-	-	<1	-	2	<1	-	µg/l	1	A-T-025w
Selenium (leachable) _A [#]	-	-	<1	-	<1	<1	-	µg/l	1	A-T-025w
Sulphur (elemental/free) (leachable) _A	-	-	<0.1	-	<0.1	<0.1	-	mg/l	0.1	A-T-029w
Zinc (leachable) _A [#]	-	-	6	-	4	9	-	µg/l	1	A-T-025w
TPH total (>C6-C40) (leachable) _A	-	-	<80	-	254	<80	-	µg/l	80	A-T-007w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	NAD	-	Chrysotile	NAD	NAD			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	Loose Fibres	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	-	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	0.04	-	<0.01	-	0.38	0.04	0.07	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	-	<0.01	-	<0.01	<0.01	0.02	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.06	-	<0.02	-	0.63	0.09	0.16	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.17	-	<0.04	-	2.01	0.40	0.81	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.26	-	<0.04	-	2.09	0.51	0.89	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.23	-	<0.05	-	2.08	0.52	0.87	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.15	-	<0.05	-	1.05	0.27	0.44	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.10	-	<0.07	-	0.79	0.19	0.36	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.23	-	<0.06	-	2.22	0.47	0.90	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	-	<0.04	-	0.20	0.05	0.09	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.41	-	<0.08	-	4.61	0.80	1.58	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.03	-	<0.01	-	0.27	0.02	0.05	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.16	-	<0.03	-	1.13	0.30	0.49	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	-	<0.03	-	0.26	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.24	-	<0.03	-	2.57	0.32	0.64	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.39	-	<0.07	-	4.92	0.80	1.55	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	2.47	-	<0.08	-	25.2	4.78	8.92	mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
PAH-16MS (leachable)										
Acenaphthene (leachable) _A	-	-	<0.01	-	<0.01	0.06	-	µg/l	0.01	A-T-019w
Acenaphthylene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(a)anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(a)pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Chrysene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Fluoranthene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Fluorene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Naphthalene (leachable) _A	-	-	0.10	-	0.05	0.15	-	µg/l	0.01	A-T-019w
Phenanthrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Pyrene (leachable) _A	-	-	<0.01	-	<0.01	<0.01	-	µg/l	0.01	A-T-019w
Total PAH-16MS (leachable) _A	-	-	0.10	-	0.05	0.21	-	µg/l	0.01	A-T-019w

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	-	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	-	<1	-	8	<1	1	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	4	-	<1	-	18	3	3	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	29	-	<1	-	94	23	37	mg/kg	1	A-T-055s
Ali >C35-C44 _A	24	-	<1	-	119	15	34	mg/kg	1	A-T-055s
Total Aliphatics _A	57	-	<1	-	239	42	76	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	-	<1	-	2	<1	1	mg/kg	1	A-T-055s
Aro >C10-C12 _A	2	-	<1	-	2	<1	<1	mg/kg	1	A-T-055s
Aro >C12-C16 _A	46	-	<1	-	10	6	3	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	184	-	<1	-	25	9	11	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	296	-	<1	-	68	21	43	mg/kg	1	A-T-055s
Aro >C35-C44 _A	19	-	<1	-	66	6	22	mg/kg	1	A-T-055s
Total Aromatics _A	546	-	<1	-	173	44	80	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	603	-	<1	-	412	86	156	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	27.28	-	15.68	-	24.28	27.90	% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03535

Client Project Name: Cables Way, Prescott

Client Project Ref: 30259

Lab Sample ID	21/03535/1	21/03535/2	21/03535/3	21/03535/4	21/03535/5	21/03535/6	21/03535/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS105	WS105	WS106	WS106	WS107	WS108	WS109			
Depth to Top	0.20	0.50	0.20	0.50	0.20	0.20	0.20			
Depth To Bottom	0.60	1.00	0.60	1.00	0.60	0.60	0.60			
Date Sampled	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21			
Sample Type	Soil - ES	Soil	Soil - ES	Soil	Soil - ES	Soil - ES	Soil - ES			
Sample Matrix Code	6AE	6AE	6AE	6AE	6AE	2ABE	4AE			
% of total sample Paper >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	<0.10	-	<0.10	<0.10	% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	72.72	-	84.32	-	75.72	72.10	% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil) [#]	-	0.88	-	0.70	-	1.25	1.20	% w/w	0.03	Calc-no stones

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Sutcliffe, 18-20 Harrington Street, Liverpool, L2 9QA

Project No: 21/03535

Project: Cables Way, Prescott

Date Received: 06/04/2021 (am)

Clients Project No: 30259

Cool Box Temperatures (°C): 10.3

Lab Sample ID	21/03535/1	21/03535/3	21/03535/5	21/03535/6	21/03535/7
Client Sample No	1	1	1	1	1
Client Sample ID/Depth	WS105 0.20-0.60m	WS106 0.20-0.60m	WS107 0.20-0.60m	WS108 0.20-0.60m	WS109 0.20-0.60m
Date Sampled	31/03/21	31/03/21	31/03/21	31/03/21	31/03/21
Deviation Code					
F	✓	✓	✓	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/03535/1	21/03535/3	21/03535/5	21/03535/6	21/03535/7
Client Sample No	1	1	1	1	1
Client Sample ID/Depth	WS105 0.20-0.60m	WS106 0.20-0.60m	WS107 0.20-0.60m	WS108 0.20-0.60m	WS109 0.20-0.60m
Date Sampled	31/03/21	31/03/21	31/03/21	31/03/21	31/03/21
Cyanide (total)	✓	✓	✓	✓	✓
Sulphide	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 21/03368/1

Amendments: Request for Additional Analysis

Envirolab Job Number: 21/03368
Issue Number: 2

Date: 29 April, 2021

Client: Sutcliffe
18-20 Harrington Street
Liverpool
L2 9QA

Project Manager: (Use) D Evans; D Bowen; A Tosh; W Baldwin; J Smith
Project Name: Cables Way Manchester Rd Prescott
Project Ref: 30259LG
Order No: 8564
Date Samples Received: 30/03/21
Date Instructions Received: 31/03/21
Date Analysis Completed: 27/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
% Moisture at <40C _A	16.3	-	15.9	10.7	3.9	17.1	6.0	% w/w	0.1	A-T-044
% Stones >10mm _A	1.0	-	<0.1	30.0	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.75	-	7.08	10.27	9.54	7.82	10.56	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	-	0.01	0.35	0.02	<0.01	0.21	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	400	-	830	3800	320	230	1600	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	-	<5	10	<5	<5	<5	mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	19	-	25	<5	<5	9	<5	mg/kg	5	A-T-029s
Organic matter _D ^{M#}	8.7	-	21.5	1.6	8.9	8.5	3.1	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	16	-	12	1	3	7	<1	mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	1.9	<1.0	<1.0	1.1	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	14.6	-	2.3	0.8	0.8	5.4	0.9	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	845	-	118	30	75	258	47	mg/kg	1	A-T-024s
Chromium _D ^{M#}	18	-	23	16	14	24	18	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	18	-	23	16	14	24	18	mg/kg	1	Calc
Lead _D ^{M#}	292	-	63	78	31	121	23	mg/kg	1	A-T-024s
Mercury _D	<0.17	-	<0.17	1.72	3.91	0.75	3.02	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18	-	20	11	5	20	12	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	1	<1	1	1	1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	114	-	69	209	117	142	47	mg/kg	5	A-T-024s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	Chrysotile	NAD	NAD	Chrysotile	NAD			A-T-045
Asbestos Matrix (microscope) _D	-	-	Loose Fibres	-	-	Loose Fibres	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	-	-	0.002	-	-	<0.001	-	% w/w	0.001	A-T-054

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	-	0.08	0.43	<0.01	<0.01	0.01	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	-	<0.01	0.02	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	-	0.12	0.56	<0.02	<0.02	0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	-	0.27	1.21	<0.04	0.08	0.06	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.06	-	0.31	1.25	<0.04	0.12	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	-	0.27	1.00	<0.05	0.12	0.06	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	-	0.19	0.58	<0.05	0.11	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	-	0.13	0.36	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	-	0.36	1.11	<0.06	0.13	0.09	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	-	<0.04	0.09	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	-	0.59	2.64	<0.08	0.18	0.15	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	-	0.06	0.32	<0.01	<0.01	0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.04	-	0.25	0.74	<0.03	0.14	0.06	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	-	0.05	0.20	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.05	-	0.54	2.24	<0.03	0.12	0.11	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	-	0.55	2.43	<0.07	0.17	0.13	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.15	-	3.77	15.2	<0.08	1.18	0.76	mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	1	<10	<5	<1	1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	<10	<5	<1	1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	-	1	<10	<5	5	2	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	2	-	1	20	<5	28	4	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	12	-	125	216	28	283	50	mg/kg	1	A-T-055s
Ali >C35-C44 _A	1	-	38	193	11	203	19	mg/kg	1	A-T-055s
Total Aliphatics _A	15	-	166	439	40	519	78	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	1	-	4	14	<5	2	2	mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	-	2	<10	<5	2	2	mg/kg	1	A-T-055s
Aro >C12-C16 _A	4	-	7	25	<5	17	4	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	4	-	13	53	<5	78	7	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	-	100	142	19	105	29	mg/kg	1	A-T-055s
Aro >C35-C44 _A	2	-	39	145	9	125	10	mg/kg	1	A-T-055s
Total Aromatics _A	18	-	165	387	28	331	54	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	33	-	332	823	68	849	132	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	23.52	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
% of total sample Paper >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	76.48	-	-	-	-	-	% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil)#	-	2.04	-	-	-	-	-	% w/w	0.03	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
% Moisture at <40C _A	15.9	-	10.7	7.8	3.4	-		% w/w	0.1	A-T-044
% Stones >10mm _A	5.7	-	28.2	53.1	<0.1	-		% w/w	0.1	A-T-044
pH _D ^{M#}	8.53	-	9.18	9.65	9.56	-		pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	-	0.06	0.05	<0.01	-		g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	570	-	720	310	<200	-		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	<1	<1	-		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	<0.2	<0.2	-		mg/kg	0.2	A-T-050s
Sulphide _A	8	-	<5	6	<5	-		mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	<5	-	<5	<5	<5	-		mg/kg	5	A-T-029s
Organic matter _D ^{M#}	10.8	-	2.2	1.0	1.6	-		% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	10	-	4	2	<1	-		mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	<1.0	<1.0	-		mg/kg	1	A-T-027s
Cadmium _D ^{M#}	5.8	-	1.2	0.7	<0.5	-		mg/kg	0.5	A-T-024s
Copper _D ^{M#}	407	-	276	47	7	-		mg/kg	1	A-T-024s
Chromium _D ^{M#}	23	-	12	6	7	-		mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	<1	<1	-		mg/kg	1	A-T-040s
Chromium (trivalent)	23	-	12	6	7	-		mg/kg	1	Calc
Lead _D ^{M#}	238	-	120	25	21	-		mg/kg	1	A-T-024s
Mercury _D	0.72	-	0.94	0.76	4.27	-		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	24	-	19	6	3	-		mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	<1	<1	1	-		mg/kg	1	A-T-024s
Zinc _D ^{M#}	185	-	82	49	25	-		mg/kg	5	A-T-024s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	NAD	NAD	NAD	-				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	N/A	N/A	-				A-T-045

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
PAH-16MS										
Acenaphthene _A ^{M#}	0.45	-	0.02	0.02	<0.01	-		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.24	-	0.05	0.03	0.02	-		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.48	-	0.19	0.12	0.07	-		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.52	-	0.24	0.19	0.06	-		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.49	-	0.20	0.17	0.05	-		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.33	-	0.15	0.12	<0.05	-		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.17	-	<0.07	<0.07	<0.07	-		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.56	-	0.23	0.14	0.08	-		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07	-	<0.04	<0.04	<0.04	-		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	1.13	-	0.39	0.20	0.17	-		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.25	-	<0.01	0.02	<0.01	-		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.41	-	0.18	0.15	0.04	-		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.39	-	<0.03	<0.03	<0.03	-		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.07	-	0.18	0.12	0.07	-		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	1.01	-	0.39	0.20	0.13	-		mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	7.58	-	2.22	1.48	0.69	-		mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	2	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	6	-	2	2	<1	-		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	158	-	51	45	2	-		mg/kg	1	A-T-055s
Ali >C35-C44 _A	82	-	35	23	<1	-		mg/kg	1	A-T-055s
Total Aliphatics _A	248	-	88	70	2	-		mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	-	2	<1	<1	-		mg/kg	1	A-T-055s
Aro >C10-C12 _A	2	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Aro >C12-C16 _A	7	-	6	2	1	-		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	19	-	15	4	<1	-		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	163	-	70	23	2	-		mg/kg	1	A-T-055s
Aro >C35-C44 _A	99	-	29	13	<1	-		mg/kg	1	A-T-055s
Total Aromatics _A	292	-	123	43	3	-		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	539	-	211	112	5	-		mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	45.56	-	-	-	28.86		% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
% of total sample Paper >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	54.44	-	-	-	71.14		% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil)#	-	2.65	-	-	-	2.43		% w/w	0.03	Calc-no stones

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Sutcliffe, 18-20 Harrington Street, Liverpool, L2 9QA

Project No: 21/03368

Project: Cables Way Manchester Rd Prescott

Date Received: 31/03/2021 (am)

Clients Project No: 30259LG

Cool Box Temperatures (°C): 18.7, 19.1, 18.8

Lab Sample ID	21/03368/1	21/03368/3	21/03368/4	21/03368/6	21/03368/8	21/03368/10	21/03368/11
Client Sample No	1	1	1	1	1	1	1
Client Sample ID/Depth	WS101 0.20-0.60m	WS104 0.40-0.80m	TP101 0.05-0.40m	TP103 0.45-0.70m	TP105 0.55-0.80m	TP106 0.00-0.20m	TP107 0.00-0.30m
Date Sampled	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21
Deviation Code							
F	✓	✓	✓	✓	✓	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/03368/1	21/03368/3	21/03368/4	21/03368/6	21/03368/8	21/03368/10	21/03368/11
Client Sample No	1	1	1	1	1	1	1
Client Sample ID/Depth	WS101 0.20-0.60m	WS104 0.40-0.80m	TP101 0.05-0.40m	TP103 0.45-0.70m	TP105 0.55-0.80m	TP106 0.00-0.20m	TP107 0.00-0.30m
Date Sampled	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21
Sulphide	✓	✓	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 21/03368
Issue Number: 1

Date: 15 April, 2021

Client: Sutcliffe
18-20 Harrington Street
Liverpool
L2 9QA

Project Manager: (Use) S Hale; D Bowen; A Tosh; W Baldwin; J Smith
Project Name: Cables Way Manchester Rd Prescott
Project Ref: 30259LG
Order No: TBC
Date Samples Received: 30/03/21
Date Instructions Received: 31/03/21
Date Analysis Completed: 15/04/21

Prepared by:


Melanie Marshall
Laboratory Coordinator

Approved by:


Sophie France
Client Service Manager

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
% Moisture at <40C _A	16.3	-	15.9	10.7	3.9	17.1	6.0	% w/w	0.1	A-T-044
% Stones >10mm _A	1.0	-	<0.1	30.0	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.75	-	7.08	10.27	9.54	7.82	10.56	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	-	0.01	0.35	0.02	<0.01	0.21	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	400	-	830	3800	320	230	1600	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Sulphide _A	<5	-	<5	10	<5	<5	<5	mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	19	-	25	<5	<5	9	<5	mg/kg	5	A-T-029s
Organic matter _D ^{M#}	8.7	-	21.5	1.6	8.9	8.5	3.1	% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	16	-	12	1	3	7	<1	mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	1.9	<1.0	<1.0	1.1	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	14.6	-	2.3	0.8	0.8	5.4	0.9	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	845	-	118	30	75	258	47	mg/kg	1	A-T-024s
Chromium _D ^{M#}	18	-	23	16	14	24	18	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Chromium (trivalent)	18	-	23	16	14	24	18	mg/kg	1	Calc
Lead _D ^{M#}	292	-	63	78	31	121	23	mg/kg	1	A-T-024s
Mercury _D	<0.17	-	<0.17	1.72	3.91	0.75	3.02	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	18	-	20	11	5	20	12	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	1	<1	1	1	1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	114	-	69	209	117	142	47	mg/kg	5	A-T-024s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	Chrysotile	NAD	NAD	Chrysotile	NAD			A-T-045
Asbestos Matrix (microscope) _D	-	-	Loose Fibres	-	-	Loose Fibres	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	-	0.08	0.43	<0.01	<0.01	0.01	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	-	<0.01	0.02	<0.01	0.01	<0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	-	0.12	0.56	<0.02	<0.02	0.02	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	-	0.27	1.21	<0.04	0.08	0.06	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.06	-	0.31	1.25	<0.04	0.12	0.06	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	-	0.27	1.00	<0.05	0.12	0.06	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	-	0.19	0.58	<0.05	0.11	<0.05	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	-	0.13	0.36	<0.07	<0.07	<0.07	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	-	0.36	1.11	<0.06	0.13	0.09	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	-	<0.04	0.09	<0.04	<0.04	<0.04	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	-	0.59	2.64	<0.08	0.18	0.15	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	-	0.06	0.32	<0.01	<0.01	0.01	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.04	-	0.25	0.74	<0.03	0.14	0.06	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	-	0.05	0.20	<0.03	<0.03	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.05	-	0.54	2.24	<0.03	0.12	0.11	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	-	0.55	2.43	<0.07	0.17	0.13	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.15	-	3.77	15.2	<0.08	1.18	0.76	mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	1	<10	<5	<1	1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	<10	<5	<1	1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	-	1	<10	<5	5	2	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	2	-	1	20	<5	28	4	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	12	-	125	216	28	283	50	mg/kg	1	A-T-055s
Ali >C35-C44 _A	1	-	38	193	11	203	19	mg/kg	1	A-T-055s
Total Aliphatics _A	15	-	166	439	40	519	78	mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	1	-	4	14	<5	2	2	mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	-	2	<10	<5	2	2	mg/kg	1	A-T-055s
Aro >C12-C16 _A	4	-	7	25	<5	17	4	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	4	-	13	53	<5	78	7	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	7	-	100	142	19	105	29	mg/kg	1	A-T-055s
Aro >C35-C44 _A	2	-	39	145	9	125	10	mg/kg	1	A-T-055s
Total Aromatics _A	18	-	165	387	28	331	54	mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	33	-	332	823	68	849	132	mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	0.02	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	23.52	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/1	21/03368/2	21/03368/3	21/03368/4	21/03368/5	21/03368/6	21/03368/7	Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1	1			
Client Sample ID	WS101	WS101	WS104	TP101	TP102	TP103	TP104			
Depth to Top	0.20	0.30	0.40	0.05	0.00	0.45	0.20			
Depth To Bottom	0.60	0.80	0.80	0.40	0.50	0.70	0.50			
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21			
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES	Solid			
Sample Matrix Code	4AE		6AE	2ABE	7	6AE	7			
% of total sample Paper >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	-	-	-	-	% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	76.48	-	-	-	-	-	% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil) [#]	-	2.04	-	-	-	-	-	% w/w	0.03	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
% Moisture at <40C _A	15.9	-	10.7	7.8	3.4	-		% w/w	0.1	A-T-044
% Stones >10mm _A	5.7	-	28.2	53.1	<0.1	-		% w/w	0.1	A-T-044
pH _D ^{M#}	8.53	-	9.18	9.65	9.56	-		pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	-	0.06	0.05	<0.01	-		g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	570	-	720	310	<200	-		mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	-	<1	<1	<1	-		mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	-	<0.2	<0.2	<0.2	-		mg/kg	0.2	A-T-050s
Sulphide _A	8	-	<5	6	<5	-		mg/kg	5	A-T-S2-s
Sulphur (elemental) _D ^{M#}	<5	-	<5	<5	<5	-		mg/kg	5	A-T-029s
Organic matter _D ^{M#}	10.8	-	2.2	1.0	1.6	-		% w/w	0.1	A-T-032 OM
Arsenic _D ^{M#}	10	-	4	2	<1	-		mg/kg	1	A-T-024s
Boron (water soluble) _D	<1.0	-	<1.0	<1.0	<1.0	-		mg/kg	1	A-T-027s
Cadmium _D ^{M#}	5.8	-	1.2	0.7	<0.5	-		mg/kg	0.5	A-T-024s
Copper _D ^{M#}	407	-	276	47	7	-		mg/kg	1	A-T-024s
Chromium _D ^{M#}	23	-	12	6	7	-		mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	-	<1	<1	<1	-		mg/kg	1	A-T-040s
Chromium (trivalent)	23	-	12	6	7	-		mg/kg	1	Calc
Lead _D ^{M#}	238	-	120	25	21	-		mg/kg	1	A-T-024s
Mercury _D	0.72	-	0.94	0.76	4.27	-		mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	24	-	19	6	3	-		mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	-	<1	<1	1	-		mg/kg	1	A-T-024s
Zinc _D ^{M#}	185	-	82	49	25	-		mg/kg	5	A-T-024s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	-	NAD	NAD	NAD	-				A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	-	N/A	N/A	N/A	-				A-T-045

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
PAH-16MS										
Acenaphthene _A ^{M#}	0.45	-	0.02	0.02	<0.01	-		mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.24	-	0.05	0.03	0.02	-		mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.48	-	0.19	0.12	0.07	-		mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.52	-	0.24	0.19	0.06	-		mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.49	-	0.20	0.17	0.05	-		mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.33	-	0.15	0.12	<0.05	-		mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.17	-	<0.07	<0.07	<0.07	-		mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.56	-	0.23	0.14	0.08	-		mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.07	-	<0.04	<0.04	<0.04	-		mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	1.13	-	0.39	0.20	0.17	-		mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.25	-	<0.01	0.02	<0.01	-		mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.41	-	0.18	0.15	0.04	-		mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.39	-	<0.03	<0.03	<0.03	-		mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.07	-	0.18	0.12	0.07	-		mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	1.01	-	0.39	0.20	0.13	-		mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	7.58	-	2.22	1.48	0.69	-		mg/kg	0.01	A-T-019s

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
TPH UKCWG										
Ali >C5-C6 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	2	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	6	-	2	2	<1	-		mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	158	-	51	45	2	-		mg/kg	1	A-T-055s
Ali >C35-C44 _A	82	-	35	23	<1	-		mg/kg	1	A-T-055s
Total Aliphatics _A	248	-	88	70	2	-		mg/kg	1	A-T-055s
Aro >C5-C7 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	2	-	2	<1	<1	-		mg/kg	1	A-T-055s
Aro >C10-C12 _A	2	-	<1	<1	<1	-		mg/kg	1	A-T-055s
Aro >C12-C16 _A	7	-	6	2	1	-		mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	19	-	15	4	<1	-		mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	163	-	70	23	2	-		mg/kg	1	A-T-055s
Aro >C35-C44 _A	99	-	29	13	<1	-		mg/kg	1	A-T-055s
Total Aromatics _A	292	-	123	43	3	-		mg/kg	1	A-T-055s
TPH (Ali & Aro >C5-C44) _A	539	-	211	112	5	-		mg/kg	1	A-T-055s
BTEX - Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	-	<0.01	<0.01	<0.01	-		mg/kg	0.01	A-T-022s
Forensic Description										
% of total sample Inert >10mm	-	45.56	-	-	-	28.86		% w/w	0.1	Calc-no stones
% of total sample Wood >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Vegetation >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Cloth >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Other Inert Material >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones

Envirolab Job Number: 21/03368

Client Project Name: Cables Way Manchester Rd Prescott

Client Project Ref: 30259LG

Lab Sample ID	21/03368/8	21/03368/9	21/03368/10	21/03368/11	21/03368/12	21/03368/13		Units	Limit of Detection	Method ref
Client Sample No	1	1	1	1	1	1				
Client Sample ID	TP105	TP105	TP106	TP107	TP108	TP108				
Depth to Top	0.55	0.30	0.00	0.00	0.00	0.50				
Depth To Bottom	0.80	0.80	0.20	0.30	0.40	1.00				
Date Sampled	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Solid	Soil - ES				
Sample Matrix Code	6AE		2AE	2AE	7					
% of total sample Paper >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Other Degradable Material >10mm	-	<0.10	-	-	-	<0.10		% w/w	0.1	Calc-no stones
% of total sample Fine Soil and Gravel <10mm	-	54.44	-	-	-	71.14		% w/w	0.1	Calc-no stones
Total Organic Carbon (Fine Soil)#	-	2.65	-	-	-	2.43		% w/w	0.03	Calc-no stones

REPORT NOTES

General

This report shall not be reproduced, except in full, without written approval from Envirolab.

The results reported herein relate only to the material supplied to the laboratory.

The residue of any samples contained within this report, and any received with the same delivery, will be disposed of six weeks after initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is completed.

Analytical results reflect the quality of the sample at the time of analysis only.

Opinions and interpretations expressed are outside the scope of our accreditation.

If results are in italic font they are associated with an AQC failure, these are not accredited and are unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

The Client Sample No, Client Sample ID, Depth to Top, Depth to Bottom and Date Sampled were all provided by the client.

Soil chemical analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:

Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis.

Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:

1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.

Secondary Matrix Codes:

A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal,

E = contains roots/twigs.

Key:

IS indicates Insufficient Sample for analysis.

US indicates Unsuitable Sample for analysis.

NDP indicates No Determination Possible.

NAD indicates No Asbestos Detected.

N/A indicates Not Applicable.

Superscript # indicates method accredited to ISO 17025.

Superscript "M" indicates method accredited to MCERTS.

Subscript "A" indicates analysis performed on the sample as received.

Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Sutcliffe, 18-20 Harrington Street, Liverpool, L2 9QA

Project No: 21/03368

Project: Cables Way Manchester Rd Prescott

Date Received: 31/03/2021 (am)

Clients Project No: 30259LG

Cool Box Temperatures (°C): 18.7, 19.1, 18.8

Lab Sample ID	21/03368/1	21/03368/3	21/03368/4	21/03368/6	21/03368/8	21/03368/10	21/03368/11
Client Sample No	1	1	1	1	1	1	1
Client Sample ID/Depth	WS101 0.20-0.60m	WS104 0.40-0.80m	TP101 0.05-0.40m	TP103 0.45-0.70m	TP105 0.55-0.80m	TP106 0.00-0.20m	TP107 0.00-0.30m
Date Sampled	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21
Deviation Code							
F	✓	✓	✓	✓	✓	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	21/03368/1	21/03368/3	21/03368/4	21/03368/6	21/03368/8	21/03368/10	21/03368/11
Client Sample No	1	1	1	1	1	1	1
Client Sample ID/Depth	WS101 0.20-0.60m	WS104 0.40-0.80m	TP101 0.05-0.40m	TP103 0.45-0.70m	TP105 0.55-0.80m	TP106 0.00-0.20m	TP107 0.00-0.30m
Date Sampled	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21	29/03/21
Sulphide	✓	✓	✓	✓	✓	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.



Job Number:	30259
Job Name:	Cables Way, Prescot
Proposed Land Use:	Commercial / Industrial
S.O.M.	6

	Below Limit of Detection
	Above Threshold
n/t	Not Tested
NAD	No Asbestos Detected

n/t		Not Tested		Sample ID		WS101	WS104	TP101	TP102	TP103	TP104	TP105	TP106	TP107	TP108	WS105	WS106	WS107	WS108	WS109
NAD		No Asbestos Detected		Depth Top		0.20	0.40	0.05	0.00	0.45	0.20	0.55	0.00	0.00	0.00	0.20	0.20	0.20	0.20	0.20
				Depth Bottom		0.60	0.80	0.40	0.50	0.70	0.50	0.80	0.20	0.30	0.40	0.60	0.60	0.60	0.60	0.60
				Date Sampled		29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	29-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21	31-Mar-21
Contaminant		Units		Threshold																
Arsenic (Total)		mg/kg	640	16	12	1	3	7	<1	10	4	2	<1	4	<1	2	8	4		
Boron (Soluble)		mg/kg	240000	<1.0	<1.0	1.9	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cadmium (Total)		mg/kg	190	14.6	2.3	0.8	0.8	5.4	0.9	5.8	1.2	0.7	<0.5	1.8	1.7	1.2	1.7	0.8		
Chromium III		mg/kg	8600	18	23	16	14	24	18	23	12	6	7	17	20	18	20	13		
Chromium VI		mg/kg	33	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper (Total)		mg/kg	68000	845	118	30	75	258	47	407	276	47	7	108	103	107	414	75		
Lead (Total)		mg/kg	2330	292	63	78	31	121	23	238	120	25	21	80	29	66	97	140		
Mercury (Total)		mg/kg	1100	<0.17	<0.17	1.72	3.91	0.75	3.02	0.72	0.94	0.76	4.27	1.66	<0.17	0.63	0.39	0.4		
Nickel (Total)		mg/kg	980	18	20	11	5	20	12	24	19	6	3	15	33	22	19	12		
Selenium (Total)		mg/kg	12000	<1	1	<1	1	1	1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1
Zinc (Total)		mg/kg	730000	114	69	209	117	142	47	185	82	49	25	61	87	119	96	122		
Cyanide (Total)		mg/kg	34	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenols (Total)		mg/kg	3200	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Organic matter		%	N/A	8.7	21.5	1.6	8.9	8.5	3.1	10.8	2.2	1	1.6	3.3	2.9	2.5	2.2	4.8		
Sulphate (Acid Soluble)		mg/kg	N/A	400	830	3800	320	230	1600	570	720	310	<200	650	<200	1100	610	790		
Sulphate as Water Soluble		g/l	N/A	0.04	0.01	0.35	0.02	<0.01	0.21	<0.01	0.06	0.05	<0.01	0.05	<0.01	0.04	0.06	0.02		
Sulphide		mg/kg	N/A	<5	<5	10	<5	<5	<5	8	<5	6	<5	<5	7	<5	<5	10		
pH		pH units	N/A	7.75	7.08	10.27	9.54	7.82	10.56	8.53	9.18	9.65	9.56	8.53	7.22	9.93	9	8.45		
Sulphur (Elemental)		mg/kg	N/A	19	25	<5	<5	9	<5	<5	<5	<5	<5	<5	20	<5	<5	<5	<5	<5
Asbestos																				
Asbestos in soil		N/A	N/A	NAD	Chrysotile	NAD	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	Chrysotile	NAD	NAD
Asbestos Matrix (microscope)		N/A	N/A	-	Loose Fibres	-	-	Loose Fibres	-	-	-	-	-	-	-	-	-	Loose Fibres	-	-
ACM - Suitable for Water Absorption Test?		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Asbestos in soil % composition		% w/w	0.001	n/t	0.002	n/t	n/t	<0.001	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	0.006	n/t	n/t
TPH Suite																				
TPH (Total)		mg/kg	N/A	33	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Aliphatic		mg/kg	N/A	15	166	439	40	519	78	248	88	70	2	57	<1	239	42	76		
>C5 to C6 aliphatic		mg/kg	12000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C6 to C8 aliphatic		mg/kg	40000	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C8 to C10 aliphatic		mg/kg	11000	<1	1	<10	<0.1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
>C10 to C12 aliphatic		mg/kg	47000	<1	<1	<10	<5	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
>C12 to C16 aliphatic		mg/kg	90000	<1	1	<10	<5	5	2	2	<1	<1	<1	<1	<1	<1	8	<1	1	
>C16 to C35 aliphatic		mg/kg	1800000	14	126	236	n/t	311	54	164	53	47	2	33	<1	112	26	40		
>C35 to C44 aliphatic		mg/kg	1800000	1	38	193	11	203	19	82	35	23	<1	24	<1	119	15	34		
Total Aromatic		mg/kg	N/A	18	165	387	28	331	54	292	123	43	3	546	<1	173	44	80		
>C5 to C7 aromatic (Benzene)		mg/kg	86000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C7 to C8 aromatic (Toluene)		mg/kg	180000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>C8 to C10 aromatic		mg/kg	17000	1	4	14	<5	2	2	2	2	<1	<1	<1	<1	2	<1	1		
>C10 to C12 aromatic		mg/kg	34000	<1	7	25	<5	17	4	7	<5	<1	<1	2	<1	2	<1	<1	<1	<1
>C12 to C16 aromatic		mg/kg	38000	4	13	53	<5	78	7	19	6	2	1	46	<1	10	6	3		
>C16 to C21 aromatic		mg/kg	28000	4	100	142	19	105	29	163	15	4	<1	184	<1	25	9	11		
>C21 to C35 aromatic		mg/kg	28000	7	39	145	9	125	10	99	70	23	2	296	<1	68	21	43		
>C35 to C44 aromatic		mg/kg	28000	2	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
Aliphatic + Aromatic EC >44-70		mg/kg	N/A	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t	n/t
BTEX Suite																				
benzene		mg/kg	90	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
toluene		mg/kg	180000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
ethylbenzene		mg/kg	27000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
M&P Xylene		mg/kg	30000	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
O-Xylene		mg/kg	33000	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PAH Suite																				
naphthalene		mg/kg	1100	<0.03	0.05	0.2	<0.03	<0.03	<0.03	0.39	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.26	<0.03	<0.03	<0.03
acenaphthylene		mg/kg	100000	<0.01	<0.01	0.02	<0.01	0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
acenaphthene		mg/kg	100000	<0.01	0.08	0.43	<0.01	<0.01	0.01	0.45	0.02	0.02	<0.01	0.04	<0.01	0.38	0.04	0.07		
fluorene		mg/kg	71000	<0.01	0.06	0.32	<0.01	<0.01	0.01	0.25	<0.01	0.02	<0.01	0.03	<0.01	0.27	0.02	0.05		
phenanthrene		mg/kg	23000	0.05	0.54	2.24	<0.03	0.12	0.11	1.07	0.18	0.12	0.07	0.24	<0.03	2.57	0.32	0.64		
anthracene		mg/kg	540000	<0.02	0.12	0.56	<0.02	<0.02	0.02	0.24	0.05	0.03	0.02	0.06	<0.02	0.63	0.09	0.16		
fluoranthene		mg/kg	23000	<0.08	0.59	2.64	<0.08	0.18	0.15	1.13	0.39	0.2	0.17	0.41	<0.08	4.61	0.8	1.58		
pyrene		mg/kg	54000	<0.07	0.55	2.43	<0.07	0.17	0.13	1.01	0.39	0.2	0.13	0.39	<0.07	4.92	0.8	1.55		
benzo(a)anthracene		mg/kg	180	<0.04	0.27	1.21	<0.04	0.08	0.06	0.48	0.19	0.12	0.07	0.17	<0.04	2.01	0.4	0.81		
chrysene		mg/kg	350	<0.06	0.36	1.11	<0.06	0.13	0.09	0.56	0.23	0.14	0.08	0.23	<0.06	2.22	0.47	0.9		
benzo(b)fluoranthene		mg/kg	45	<0.05	0.27	1	<0.05	0.12	0.06	0.49	0.2	0.17	0.05	0.23	<0.05	2.08	0.52	0.87		
benzo(k)fluoranthene		mg/kg	1200	<0.07	0.13	0.36	<0.07	<0.07	<0.07	0.17	<0.07	<0.07	<0.07	0.1	<0.07	0.79	0.19	0.36		
benzo(a)pyrene		mg/kg	35	0.06	0.31	1.25	<0.04	0.12	0.06	0.52	0.24	0.19	0.06	0.26	<0.04	2.09	0.51	0.89		
dibenzo(ah)anthracene		mg/kg	3.6	<0.04	<0.04	0.09	<0.04	<0.04	<0.04	0.07	<0.04	<0.04	<0.04	<0.04	<0.04	0.2	0.05	0.09		
benzo(ghi)perylene		mg/kg</																		

Appendix B – Gas Protection Membrane Specification & Membrane Validation Proforma

Protech GM Super

GAS PROTECTION

• HIGH RISK CHARACTERISTIC SITES •

REGULATIONS COMPATIBILITY TABLE

	CIRIA 665 CHARACTERISTIC SITUATION 2	CIRIA 665 CHARACTERISTIC SITUATION 3-6	BS8485 CHARACTERISTIC SITUATION 2	BS8485 CHARACTERISTIC SITUATION 3-6	BRE 211 RADON	NHBC AMBER 1	NHBC AMBER 2 & RED
METHANE	✓	✓	✓	✓	N/A	✓	✓
CARBON DIOXIDE	✓	✓	✓	✓	N/A	✓	✓
RADON	N/A	N/A	N/A	N/A	✓	N/A	N/A

DESCRIPTION

Protech GM Super is a high performance proprietary reinforced gas barrier, that incorporates a 12 micron aluminium foil layer, for maximum protection against ground-borne gases. This has been specifically designed to conform with the latest guidance documents. Due to its unique composition, the membrane is extremely robust and flexible and, therefore, easy to install on site. The membrane also provides protection from damp when placed below the slab and, therefore, there is no need to install a separate DPM.

SPECIFICATION

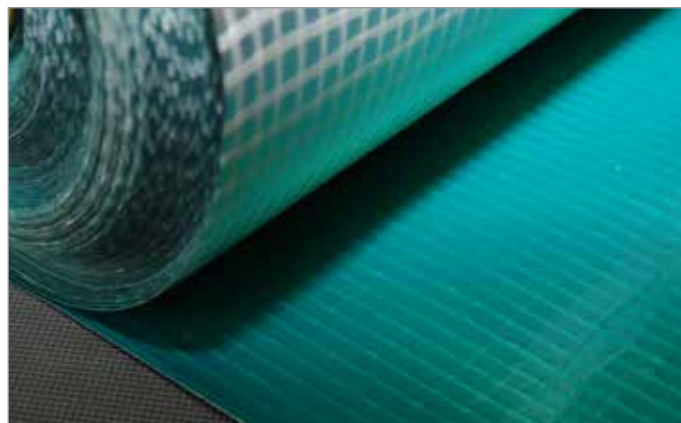
CIRIA C665, BS8485:2015 & Local Authority Ground Gas Handbook recommended that gas membranes are specified on the basis of the 'need to survive' construction, i.e. use one that is puncture and tear resistant.

Thickness should not be the main determinant of the suitability of a membrane for a particular site, although it can indirectly influence some key performance parameters.

In practise, because of the nature of construction sites, the durability, survivability and robustness of membranes are equally important than purely permeability to gas.

Protech GM Super incorporates a reinforced grid to ensure that maximum protection is achieved when installed to manufacturers' instructions.

The need for high quality workmanship during installation should not be under-estimated. The health and safety of the occupants of the building is dependent on its satisfactory performance. If installed incorrectly or damaged during the construction process, the membrane is rendered ineffective and will fail to provide adequate protection against the ingress of ground gas or vapours.



TYPICAL PROPERTIES

Roll Length	50m
Width	2m
Weight	370g/m ²
Thickness	0.4mm
Colour	Green / Silver
Methane Permeability (ISO 15105-1)	≤ 0.1 ml/day/m ²

REQUIRED ACCESSORIES

- Protech GM Super Starter Band (1m x 50m)
- Protech GM Tape
- Protech GM Tophats
- Protech SAGM (Self Adhesive Gas Membrane)
- Protech GM Flashing Strip
- Protech GM Super Corner Units
- Protech GM Primer
- Protech GM 3mm Protection Board
- Protech GM Protection Fleece
- Protech I25

VENTING

On sites where venting is required, our Provoid Venting System should be used. We can provide design advice for both passive and active venting systems to suit individual site requirements.





Visual Inspection of Gas Protection Measures

Site Name:	Gas characteristic situation:
Job Number:	Type of development and building/block checked: residential/commercial/other
Date:	Building description:
Visit by:	Foundation type: suspended floor/raft/other
Weather at time of inspection:	Gas protection type: passive/active

No.	Item	Comments (see notes)
1 Gas membrane		
1.1	Condition if sub-grade and underside of gas membrane	
1.2	Gas membrane type	
1.3	Gas membrane condition	
1.4	Joining tape product	
1.5	Lapping design	
1.6	Laps. Welds and joints seals	
1.7	Service entries seals	
2 Passive venting		
2.1	Sub-floor void	
2.2	External wall airbricks	
2.3	Internal sleeper walls	
2.4	External vent trenches/ducts	
3 Active venting		
3.1	System details	
Additional Notes:		

Notes: inspection checklist

1.1	Underside of gas membrane	Check that the sub grade does not contain rough/uneven surfaces, is appropriately clean and that there are no hard/sharp objects. That protective sand blinding or geotextile (if specified) is present and meets the design criteria.
1.2	Gas membrane type	Manufacturer and product specification, gauge, colour, brand/name, material batch/roll numbers, storage arrangements (protected from dirt/damage?)
1.3	Gas membrane condition	Open punctures, tears, rips, stretching? Excessive footprints/evidence of traffic? Presence of debris? Repairs? Signs of weakness such as raised or sunken indentations? Protection plan in place to restrict access to lain gas membrane?
1.4	Joining tape product	Product type, brand, thickness, material, width, colour? Use of double sided tape?
1.5	Lapping design	Joints lapped and sealed in accordance with manufacturer's requirements/specification? Minimum overlap insured? Sections taped twice?
1.6	Laps and joints sealed	Welds complete? Appropriate joining/double sided tape used?
1.7	Service entries sealed	Top hats seal arrangements fixed around service entries? Use of Jubilee clips?
2.1	Sub-floor void	Is a check possible? Void former? Gravel (type/specification)? Height of void space? Is it clear?
2.2	External wall airbricks	Numbers, size, positions as design drawing?
2.3	Internal sleeper walls	Ventilation holes (honeycomb brickwork/pipe crossings?) – size, spacing, location in accordance with design?
2.4	External vent trenches/ducts	Located and constructed in accordance with design drawings? If open-topped gravel – gravel type/presence of fines? If pipe or other vent, check position and construction for functionality and absence of blockages. Ability of void former to withstand bearing of the superstructure?
3.1	Active venting	Type of air supply: mechanical, natural, combined? Location/condition/number of fans and vents? Location and size of inlets? Provision of air-cleaning devices and air heaters? Supply and exhaust ductwork? Alarm provision/installation? Gas monitoring system in under-floor void?

Photographs

No.	Description

The gas protection measures inspected:	a Are acceptable and comply with the specification
	b Are acceptable but attention is drawn to issues related to item no.
	c Are not acceptable due to issues related to item no.

Name:**Signature:****Date:**

Appendix C – Council Validation Requirements

ENVIRONMENTAL PROTECTION ACT 1990

CONTAMINATED LAND INSPECTION STRATEGY

REVISED MARCH 2014

Version:	3.0
Approved by:	Deputy Chief Executive in Consultation with Corporate and Customer Services Cabinet
Date formally approved:	10 October 2014
Document Author:	Keith Dooley
Name of responsible service:	Environmental Health and Consumer Protection
Review date:	April 2019
Target audience:	Council-Wide

KMBC DOCUMENT CONTROL PAGE

TITLE	Title: Contaminated Land Inspection Strategy Document Type: Statutory Requirement Version Number: 3.0 Brief Summary: This document sets out the manner in which KMBC proposes to implement its contaminated land inspection duties under part 2A of the Environmental Protection Act 1990
ORIGINATOR	Document Author and Job Title: Keith Dooley (Scientific Officer) Responsible Directorate: Environmental Health and Consumer Protection
FORMAL APPROVAL	Approved by: Deputy Chief Executive in Consultation with Corporate and Customer Services Cabinet Date approved: 10 October 2014
REVIEW	Review Date: April 2019 Responsibility of: Environmental Health and Consumer Protection
SUPERSEDES	Supersedes: Contaminated Land Inspection Strategy (Version 2, 2004) Description of Amendments: Update reflects changes in the statutory guidance issued by DEFRA in 2012 and updates on progress made since the 2004 revision.
POLICY DEPENDENCIES	Link to other Council documents: Council Strategic Outcomes: Indicate which strategic outcome (s) the policy will contribute towards. The 10 strategic outcomes are: • Quality infrastructure and environment • People are protected from risks that can affect their health and wellbeing

	KMBC DOCUMENT CONTROL PAGE (2) Continued
Equality Impact Assessment	All council policies should undergo an Equality Impact Assessment (EIA). Information on completing an EIA is available on BERTHA. If you require any help to complete an EIA, contact the Corporate Equalities team. Equality Impact Assessment is complete: Yes ☒ No ☐ Date complete: 20.03.14
Risk Assessment	A risk assessment template is available on BERTHA. If you require any help to complete the assessment, contact the Corporate Risk Manager. Policy has been risk assessed: Yes ☐ No ☒ Date complete:
TRAINING/ AWARENES S RAISING	Training / awareness raising required to fully implement document: Yes ☐ No ☐ If no please state why: If yes indicate the date of training / awareness raising: Training provided by:
POLICY LIBRARY	Once formally approved the document should be posted onto the Policy Library on the council intranet. Please send the policy through to the Policy, Impact & Intelligence Team for uploading. Date Posted:

Contents	Page
Executive Summary	
1.0 Introduction	7
1.1 General Policy	7
1.1.1 Local Authority Policies	7
1.1.2 Liverpool City Region Context	10
1.1.3 Government Objectives	10
1.2 Regulatory Context	10
1.2.1 Background and Definition	10
1.2.2 Role of Knowsley Council	13
1.2.3 Role of the Environment Agency	13
1.2.4 Role of Enforcing Authorities	14
1.2.5 Principles of Risk Assessment	14
1.2.6 Strategic Approach to Inspection	14
1.2.7 Consideration of Socio-Economic Effects	15
1.3 Development of the Strategy	15
1.4 Objectives of the Strategy Document	16
2.0 Characteristics of the Metropolitan Borough of Knowsley	17
2.1 Geographical Location	17
2.2 Size and population distribution	17
2.3 Land Owned by Knowsley Council	18
2.4 Current Land Use Characteristics	18
2.5 Protected Locations	19
2.6 Key Property Types	19
2.7 Known Information on Contamination	19
2.8 Current and Past Industrial History	20
2.9 Broad Geological and Hydrogeological Characteristics	20
2.9.1 Solid Geology	22
2.9.2 Superficial Geology	24
2.9.3 Local hydrogeology and use of groundwater resources	25
2.10 Surface Waters	26
2.11 Natural Contamination	27
2.12 Action already taken to deal with Land Contamination	27
3.0 Overall Aims of the Strategy	29
3.1 Aims of the Strategy	29
3.2 Objectives and Milestones	29
4.0 Priority Actions And Timescales	30
4.1 Priorities	30
4.2 Timescales	30
4.3 Measuring Progress	30

5.0 Procedures	31
5.1 Introduction	31
5.2 Information Collection	31
5.3 Merseyside Contaminated Land Management System	31
5.4 Information Evaluation	31
5.5 Prioritisation Methodology	32
5.6 Additional considerations	34
5.7 Site Specific Risk Assessment and Guideline Values	34
5.8 Human Health	34
5.9 Controlled waters	35
5.10 Other receptors	36
 6.0 Programme for Inspections	
6.1 Criteria for Selecting Individual Sites for Inspection and Activities	37
6.2 Timetable	37
6.3 Arrangements for Carrying out Detailed Inspections	37
6.4 Inspection Using Statutory Powers of Entry	38
6.5 Site Specific Liaison	38
6.6 Health and Safety Procedures	39
6.7 Inspection of Potential Special Sites	39
6.8 Arrangements for the appointment of consultants/contractors	40
 7.0 Internal management arrangements for inspection and identification	41
7.1 Responsibilities of Internal Services	41
 8.0 Information Management	43
8.1 Information and complaints	43
8.2 Confidentiality	43
8.3 Voluntary provision of information	43
8.4 Arrangements for Access to Information	43
8.4.1 Public Register	43
8.4.2 Information Requests	44
 9.0 Interaction with Other Regimes	
9.1 The Planning Regime and Development Control	45
9.2 Integrated Pollution Control and Pollution Prevention Control	45
9.3 The Environmental Damage (Prevention and Remediation) Regulations 2009	46
9.4 Waste Management Licensing System	46
9.5 Statutory Nuisance	47
9.6 Water Resources Act 1991	47
9.7 Radioactive contamination of land	47
9.8 Other Regimes	47

10.0 Communication	49
10.1 Statutory Consultees	49
10.2 Owners, occupiers and other interested parties	49
10.3 Risk communication	49
10.4 Trans-boundary Contaminant Linkages	49
10.5 Risk Summaries	50
10.6 Written Statements	50
11.0 Review Mechanisms	
11.1 Triggers for Reviewing Decisions	51
11.2 Review of the Inspection Strategy	51

Figures

Figure 1	Location of the Metropolitan Borough of Knowsley
Figure 2	Map showing solid geology
Figure 3	Map showing drift geology

Appendices

Appendix I	Current and Past Industrial History
Appendix II	Objectives and Timescales
Appendix III	Sources of Information
Appendix IV	Prioritisation methodology
Appendix V	Revised Merseyside EAS Key Codes and Hazard Rankings
Appendix VI	Statutory and Non-Statutory Bodies

References and Bibliography

Executive Summary

In common with other areas, Knowsley has a legacy of land contamination arising from industrial development and other related operational practices.

Under contaminated land provisions contained within Part 2A of the Environmental Protection Act 1990, the Council has a duty to inspect its area to identify land which meets the statutory definition of contaminated land and ensure that it is managed in an appropriate manner.

This legislation adopts the “suitable for use” approach in order to ensure that remedial action is taken only where contamination presents an unacceptable risk to human health or the wider environment assessed in the context of the current use and circumstances of the land.

This Strategy document sets out the manner in which Knowsley Metropolitan Borough Council proposes to implement its inspection duties under Part 2A. It describes the framework within which land which merits detailed individual inspection will be identified in a rational, ordered and efficient manner, identifying the most serious and pressing problems first and concentrating resources on the areas where contaminated land is most likely to be found.

The identification and remediation of contamination within the Borough will be a long and continuous process. The speed of progress during the implementation of this strategy will be dependent on the resources available.

The Borough Council has the primary regulatory role in the implementation of Part 2A but wherever necessary the Council will work in partnership with others, particularly the Environment Agency which has a key supporting role and a number of specific regulatory functions under the contaminated land regime.

Through implementation of the Strategy the Council's aims are:

- to adopt a strategic risk based approach to the periodic inspection of the Borough to identify land which presents unacceptable risks to human health or the wider environment;
- to ensure that available resources are effectively targeted;
- to ensure that all those affected by, and involved in, the inspection process have the same clear understanding of the rationale for inspection, how this will be carried out and over what timescale;
- by effective communication of the authority's intentions, to encourage voluntary action by polluters or other appropriate persons; and
- to assist regeneration and improvement of the environment through effective links with wider Council and Regional policies.

Key objectives and timescales for meeting the above aims have been set out within the strategy document.

It is recognised that sites where urgent action is required may be identified at any time; these will be dealt with as a priority as they arise.

This third revision of the strategy follows the revision of the Contaminated Land Statutory Guidance published in 2012 by Defra (Department of the Environment, Food and Rural Affairs). This review reflects the changes in legislation and guidance and reports on the progress made.

CONTAMINATED LAND INSPECTION STRATEGY

1.0 INTRODUCTION

1.1 General Policy

1.1.1 Local Authority Policies

This Contaminated Land Inspection Strategy (CLIS) has been prepared within the context of wider Council strategies, programmes and policies. These include:

Current Policies

- Emerging Knowsley Local Plan Core Strategy (expected adoption in late 2014 / early 2015)
- Unitary Development Plan (adopted June 2008)
- Strategy for Knowsley “The Borough of Choice” (January 2013)
- Corporate Plan 2013-2016
- Enforcement Policy (adopted April 2007)
- Environmental Policy (adopted September 2009)

Knowsley Local Plan and Unitary Development Plan (UDP)

The Knowsley Local Plan contains the statutory planning policies for the borough, which will guide investment and development. The Local Plan is strategically linked to the Strategy for Knowsley. The current adopted plan for Knowsley is the Replacement Unitary Development Plan (2006) which will remain in place until the formal adoption of the emerging Local Plan document, with a number of policies saved beyond this date until replaced upon adoption of the subsequent Local Plan: Site Allocations and Development Policies document

A number of policies in the UDP relate to land contamination issues and these are “saved” policies in the emerging Local Plan Core Strategy. The planning regime is the most widely used means of managing and regulating land contamination and therefore these policies have a direct influence on the Inspection Strategy.

Policy ENV5: Contaminated Land

1. New development will not be permitted if there is existing contamination on the site which could, as a result of the proposed development, place the occupiers or users of the development, ecological systems, the water environment or surrounding land uses at unacceptable risk.
2. Where there is evidence that a site may be unacceptably affected by contamination, proposals shall be accompanied by a site investigation report and schedule of remedial measures.

3. Where remedial measures are necessary then a verification report must be submitted before the development is brought into use to demonstrate that remedial work has been satisfactorily completed.
4. Where ongoing monitoring and risk assessment are necessary, reports must be submitted to the Council on an agreed basis. The developer must undertake any further investigations or remedial measures which the risk assessment shows to be required.

Policy ENV6: Landfill Gas

1. Development on former landfill sites, or within 250 metres of current or former landfill sites will only be permitted, where the applicant can clearly demonstrate that there is no risk from the generation or migration of landfill gas or other hazardous substances, or that satisfactory measures can be taken to counter any possible hazard either to the development site or other receptors.
2. Residential development will not be permitted where active gas control measures are necessary.
3. Where remedial measures are necessary a verification report must be submitted before the development is brought into use to demonstrate that remedial work has been satisfactorily completed.
4. Where ongoing monitoring and risk assessment are necessary, reports must be submitted to the Council on an agreed basis. The developer must undertake any further investigations or remedial measures which the risk assessment shows to be required.

The Strategy for Knowsley “The Borough of Choice and Knowsley Council Corporate Plan 2013-2016

The Contaminated Land Inspection Strategy is presented in the context of the Council's Corporate Plan, which sets out the Council's vision, values, strategic aims and priorities.

The Corporate Plan sets out 10 strategic outcomes that will assist in delivering the Strategy for Knowsley, which is the overarching plan to make Knowsley the 'Borough of Choice'

1. Empowered, resilient, cohesive communities.
2. Safe, attractive, sustainable neighbourhoods.
3. **Quality infrastructure and environment.**
4. Residents are empowered to realise their economic potential.
5. Knowsley has the conditions in place to support sustainable business growth.
6. Improved outcomes for our most vulnerable young people.

7. Everybody has the opportunity to have the best health and wellbeing throughout their life.
8. **People are protected from risks that can affect their health and wellbeing.**
9. More people look after themselves and support others to do the same.
10. Children get the best possible start in life and have opportunities to reach their potential.

Land contamination has significant impacts on the environment, health and the economy. These policy areas are therefore key considerations in developing and implementing the Strategy.

Enforcement Policy (adopted April 2007)

The Council has adopted an enforcement policy which sets out the principles of good enforcement. It is consistent with Central Government's Enforcement Concordat. The Cabinet Office published the Concordat and this sets out what businesses and others being regulated can expect from enforcement officers employed by Local Authorities and other agencies. Knowsley has adopted the Concordat into existing policy thereby committing themselves to good enforcement policies and procedures, which contribute to best value.

The Concordat's main principles are:

- Openness;
- Helpfulness;
- Consistency;
- Proportionality;
- Agreed Standards of Service;
- Access to complaint process.

Any enforcement action carried out under the Part 2A regime as a result of this Inspection Strategy will be in accordance with the Enforcement Policy.

Environment Policy (adopted April 2009)

The Environment Policy sets out the Council's policy on environmental issues and the following policy statements are relevant to contaminated land and implementation of this Inspection Strategy.

- *Policy Statement 10:* We will take action to minimise the pollution of land, air and water by Council activities.
- *Policy Statement 11:* We will fulfil our statutory responsibilities to monitor levels of pollution in the air and drinking water and meet inspection requirements for contaminated land and polluting industrial processes.

- *Policy Statement 12:* We will take action to reduce the pollution of land, air and water by those within our influence, using legal powers where appropriate against those who damage the environment.
- *Policy Statement 17:* We will seek resources to restore derelict and disused land and buildings in urban areas for beneficial use.

1.1.2 Liverpool City Region Context

Owing to the extent and severity of contamination in areas of Merseyside, the Merseyside Districts (Knowsley, Sefton, St. Helens, Wirral and the City of Liverpool) and Halton have a history of working together to address the issue of contaminated land strategically. A Contaminated Land Officers Group (CLOG) was established in 1991 which acts to progress strategic initiatives, exchange information and seek uniform approaches to dealing with contaminated land issues across Merseyside and Halton.

Knowsley is part of the Liverpool City Region with the neighbouring Boroughs of Sefton, St. Helens, Wirral, Halton and the City of Liverpool. Tackling the historic legacy of contaminated land through the regeneration process is a sub-regional priority. Its importance is being flagged up through joint working arrangements at the sub-regional level including:

- Liverpool City Region Combined Authority (from 01/04/14);
- The Local Enterprise Partnership (LEP);
- City Region Growth Strategy (LEP);
- EU Investment Plan 2014-2020 (LCR EU Structural and Investment Funds Strategy 2014-2020);
- Local Nature Partnership.

1.1.3 Government Objectives

The overarching objectives of the Government's policy on contaminated land and the Part 2A¹ regime are:

- To identify and remove unacceptable risks to human health and the environment.
- To seek to ensure that contaminated land is made suitable for its current use
- To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.
- For Part 2A to be used only when no appropriate alternative solution exists. For example, redevelopment of the land through the planning process.

1.2 Regulatory Context

1.2.1 Background and Definition

¹ Defra (2012) Environmental Protection Act 1990: Part 2A Statutory Guidance

Part 2A of the Environmental Protection Act 1990, inserted by Section 57 of the Environment Act 1995, introduced a new regime for the identification and remediation of contaminated land. The contaminated land regime is set out in primary legislation, Statutory Guidance provided by the Secretary of State and Regulations. The responsibility for administering and enforcing these provisions lies with the local authorities and Environment Agency, but also involves input from several other organisations.

Part 2A adopts the “suitable for use” approach in order to ensure that remedial action is only taken where contamination presents an unacceptable risk to human health or the wider environment assessed in the context of the current use and circumstances of the land. Liability for the remediation of contaminated land is to be established, where feasible, in accordance with the polluter pays principle. The regime incorporates a risk-based approach to assessing the significance of contamination and provides the statutory definition of contaminated land.

Under Part 2A contaminated land is defined as:

“Any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that;

- (a) Significant harm is being caused or there is a significant possibility of such harm being caused; or*
- (b) Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused.”*

The Council must follow the guidance provided by the Secretary of State in applying the above definition for the identification and determination of contaminated land.

It should be noted that all future references to contaminated land within the strategy document, unless otherwise stated, refer to the statutory definition shown above.

It is important to note that the statutory definition of contaminated land does not necessarily include all land where contamination is present. Land which does not fall within the statutory definition of contaminated land, may be subject to contamination relevant in the context of other regimes. For example, land may contain substances with the potential to cause harm if the use of the land is changed. Indeed, the planning regime will continue to be the most widely used method of regulating land contamination. Part 2A is intended to deal with the legacy of contamination that is not progressed through the Planning Regime.

Under Part 2A the starting point should be that land is not contaminated land unless there is reason to consider otherwise. Only land where unacceptable risks are clearly identified after a risk assessment has been undertaken in accordance with the Statutory Guidance should be considered as meeting the Part 2A definition of contaminated land.

Significant Harm and Significant Possibility of Significant Harm to Human Health (SPOSH)

Section 78A(4) defines “Harm” as meaning harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property. However, the term significant is not defined in the 1990 Act; guidance on the assessment of significance is provided within the Statutory Guidance.

This guidance states that the local authority should consider any decision on whether land is contaminated in the context of the broad objectives of the regime and Government policy. In deciding whether land is contaminated land on the basis of SPOSH, the guidance places contaminated sites into four categories as detailed below. The guidance also highlights that as the decision is a positive legal test the starting assumption should be that land does not pose a significant possibility of significant harm unless there is reason to consider otherwise.

Category 1 sites are those where the Local Authority considers that there is an unacceptably high probability, supported by robust scientific based evidence that significant harm would occur if no action is taken to stop it.

Category 2 these are sites where there is a strong case for considering that the risks from the land are of sufficient concern in respect of a significant possibility of significant harm, with all that this might involve. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.

Category 3 these are sites where the strong case described in Category 2 does not exist, and therefore the legal test for significant possibility of significant harm is not met. This may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted as it is recognised that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose.

Category 4 sites are those where there is no or low risk that the land poses a significant possibility of significant harm. This would include land where no relevant contaminant linkage has been established, where there are only normal levels of contaminants in soil, where contaminant levels do not exceed relevant generic assessment criteria (GACs), or other relevant technical tools or advice that may be developed in the future.

1.2.2 Role of Knowsley Council

The primary regulatory role under Part 2A rests with the local authorities, reflecting existing functions under the statutory nuisance regime and complementing their role as the local planning authority. Enforcing authorities should seek to use Part 2A only where no appropriate alternative solution exists. In outline the statutory duties of the local authority under the Part 2A regime are:

- to prepare and review its strategy at least every five years;
- to inspect the Borough from time to time to identify contaminated land;
- to determine whether any particular site meets the statutory definition of contaminated land;
- to establish whether sites should be designated as “Special Sites” and thus become the responsibility of the Environment Agency;
- to act as enforcing authority for all contaminated land which is not designated as a “Special Site”, for which the Environment Agency will be the enforcing authority;
- to transfer Special Sites to the Environment Agency;
- to consult the Environment Agency on sites where there is pollution of controlled waters and the local authority considers that the land meets the description of a special site;
- to maintain a public register of sites for which a remediation notice has been served, or where a remediation statement or declaration has been published;

1.2.3 Role of the Environment Agency

The Environment Agency has a key supporting role to local authorities, involving provision of information and advice, and a number of specific regulatory functions. In summary, the Environment Agency has seven principal roles with respect to contaminated land under Part 2A:

- Custodians of date (website) and provision of information in response to specific requests;
- to assist local authorities in identifying contaminated land, particularly in cases of water pollution;
- to provide site specific guidance to local authorities on contaminated land with specific reference to water pollution;
- to undertake inspections of Special Sites at request and on a priority basis;
- to act as enforcing authority for any land designated as a Special Site;
- to maintain a register of Special Sites remediation;
- to publish periodic reports on the State of Contaminated Land.

Special Sites are a particular category of contaminated land for which the Environment Agency rather than the local authority is the enforcing authority for the purposes of the Part 2A regime. The descriptions of the types of land which are required to be

designated as Special Sites are set out in The Contaminated Land (England) Regulations 2012.

1.2.4 Role of Enforcing Authorities

Enforcing authorities have four main tasks:

- a. To establish who should bear responsibility for the remediation of the land;
- b. To decide, after consultation, what remediation is required and ensure that should remediation takes place either through agreement or by serving a remediation notice. In certain circumstances the local authority may need to undertake the remediation;
- c. Where a remediation notice is served or the local authority carries out the work, to determine who should bear what proportion of costs for the work; and
- d. To record certain prescribed information regarding regulatory actions on a public register.

1.2.5 Principles of Risk Assessment

The approach adopted in the UK to the assessment and management of contaminated land is based on the principles of risk assessment. These principles also underlie the legislative requirements of Part 2A. The approach is based on the source-pathway-receptor relationship or contaminant linkage. For there to be a risk there must be a source of contamination, one or more receptors that could be harmed and pathways along which the contaminants can reach the receptors. Without a source-pathway-receptor contaminant linkage, there is no risk and the land in question cannot be determined to be contaminated land. The purpose of remediation of contaminated land is therefore to break the contaminant linkages by removing or treating the contaminant, removing or blocking the pathway or removing or protecting the receptor.

Receptors are defined within the Statutory Guidance as ‘something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters.’ Relevant types of receptors relating to ecological system effects and property effects are listed with Tables 1 and 2 of the Statutory Guidance.

The Part 2A regime is aimed at dealing with cases where the risk is sufficient, given the existence of a contaminant linkage or linkages, to justify remedial action without waiting for any future development of the land. The regime is therefore complementary to considerations under the planning system where contaminated land or the possibility of it (both in terms of the statutory definition and in its wider context) is considered as a material planning issue.

1.2.6 Strategic Approach to Inspection

Statutory Guidance requires that local authorities adopt a strategic approach to the inspection of their areas for the identification of contaminated land.

This document, adopted by Knowsley Council, sets out how the Council intends to implement the inspection duties required by Part 2A, taking into consideration local circumstances. The document provides the framework by which land which merits detailed individual inspection may be identified in a rational, ordered and efficient manner, identifying the most serious and pressing problems first.

1.2.7 Consideration of Socio-Economic Effects, Cost Benefits etc.

The Council will use its judgment to strike a reasonable balance between dealing with risks associated with contaminated land and the benefits of remediating land to remove or reduce those risks. The potential impacts of regulatory intervention including financial costs, property blight and burdens on affected people will be taken into consideration.

The Council will take into account the following, as appropriate:

- The likely indirect and direct health benefits and impacts of regulatory intervention;
- Benefits of reducing or removing the risk posed by contamination;
- Risks from contaminants being mobilised during remediation;
- Stress related health effects that may be experienced by affected people;
- Whether health benefits outweigh health impacts;
- An estimate of what remediation may involve;
- How long remediation would take;
- The benefits of remediation;
- Whether the benefits outweigh the financial and economic costs;
- Any impacts on local society or environment from taking action.

Consideration will be given to the various benefits and costs of taking action, with a view to ensuring that the regime produces net benefits taking account of local circumstances.

1.3 Development of the Strategy

In the development of this strategy Knowsley Council has adopted a joint working approach with two adjacent Merseyside Districts, Sefton and St Helens. Production of the strategy was undertaken by the Merseyside Environmental Advisory Service (Merseyside EAS), with support from internal teams.

Merseyside EAS will assist Knowsley Council officers in progressing the implementation of the Strategy.

The approach adopted is considered to be the most efficient and cost effective means of meeting the Council's statutory obligation to produce and publish the Contaminated Land Inspection Strategy.

The strategy has been developed in accordance with relevant legislation and guidance and with reference to wider Council policies.

This third version of the strategy has been produced to take into account the revised Statutory Guidance and to update the document as appropriate.

1.4 Objectives of the Strategy Document

The primary objectives of this document are:

- To meet the requirement to produce and publish a Contaminated Land Inspection Strategy;
- To set out the framework within which Knowsley Council intends to implement the inspection duties of the Council under Part 2A and demonstrate compliance with the Statutory Guidance;
- To set out clearly and concisely how the inspection for contaminated land will be undertaken such that all those affected by, and involved in, inspection have the same clear understanding of the rationale for inspection, how this will be carried out and over what timescale;
- To identify how this regime will interact with other regulatory regimes relevant to the management of land contamination and how the Council proposes to conduct liaison both internally and with external agencies and individuals;

2.0 CHARACTERISTICS OF KNOWSLEY METROPOLITAN BOROUGH

2.1 Geographical Location

Knowsley Metropolitan Borough is adjoined by the Metropolitan districts of St Helens, Sefton and Liverpool and the districts of Halton and West Lancashire.

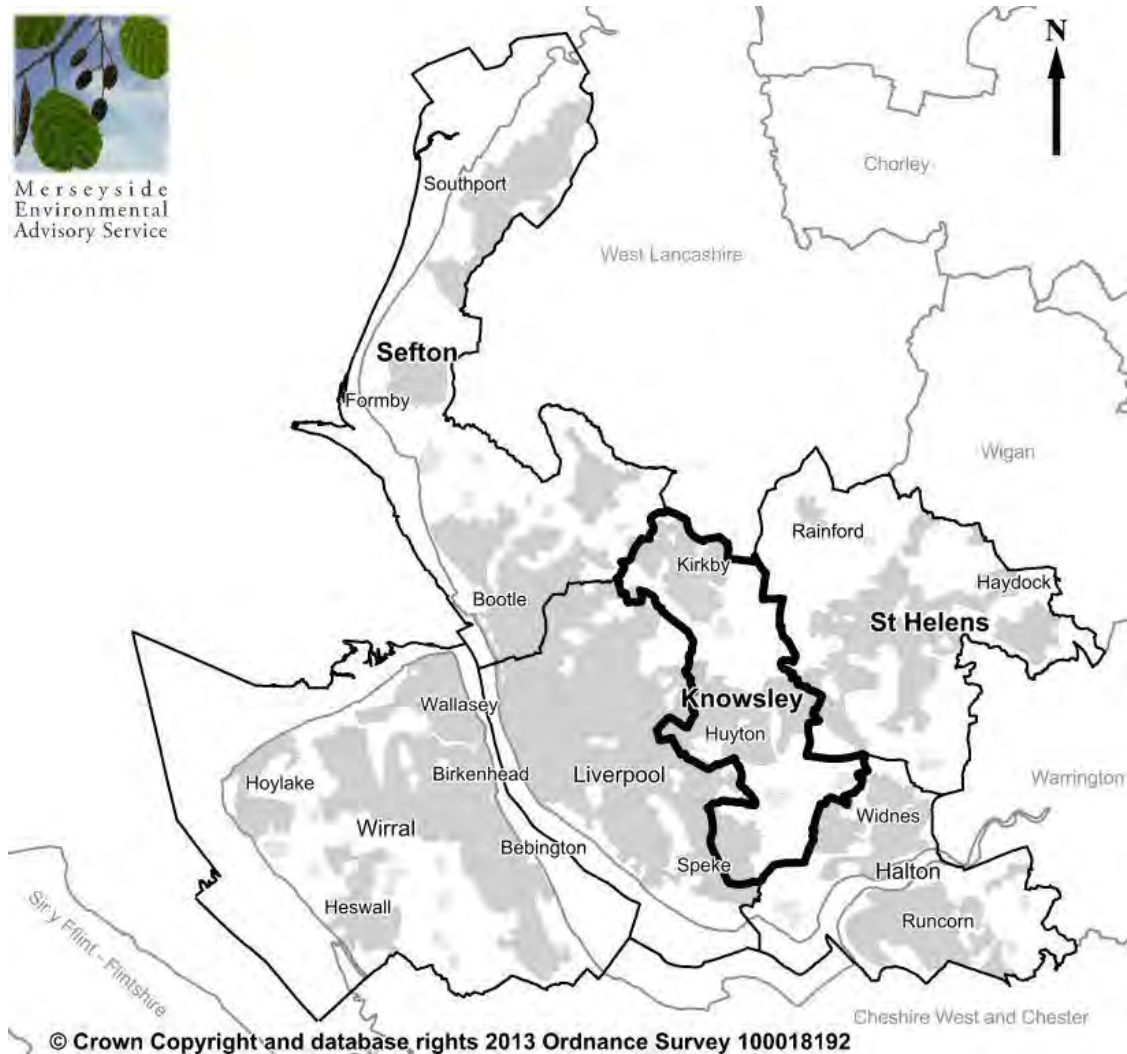


Figure 1: Map showing Knowsley and the surrounding areas

2.2 Size and population distribution

The Borough is thirteen miles long from north to south and six miles wide from west to east and has a total area of 86.5 km².

Knowsley has a population of 145,900 (2011 census).

The main centres of population are Huyton with Roby, Prescott, Kirkby, Halewood, Cronton, Whiston Tarbock, Knowsley Village and Stockbridge Village.

2.3 Land Owned by Knowsley Council

The Council has a large and varied portfolio of publicly owned land in its stewardship held by a number of Services. Land formally held by the Department of Housing and Environmental Health has now passed to Knowsley Housing Trust (KHT).

This land includes in excess of 1000 hectares of public parks, playing fields/public open space, and a number of allotments. Approximately 17,000 former Council owned dwellings are now under the control of KHT. Other land in the Council's stewardship includes schools, public buildings, car parks, administrative buildings, industrial land, potential development sites, depots and other plots of land.

It is recognised that some of the Council's land may be contaminated due to its historical land use. These potentially contaminated sites will be risk assessed in accordance with the prioritisation strategy and will be treated in the same way as any other site of potential contamination and will be addressed according to its prioritisation rankings.

Care will be taken to maintain appropriate records and to give clear reasons for decisions. So far as possible, a consistent approach will be taken between significant contaminant linkages for which the Council is liable and linkages for which others are liable.

It is anticipated that potential disputes may particularly arise where the authority is called upon to apportion the costs of remediation between itself and other appropriate persons. The authority cannot delegate this responsibility. However, where appropriate the Council may seek advice from an independent party and publish that advice.

2.4 Current Land Use Characteristics

Over half of the Borough area lies in the Merseyside Green Belt, a significant proportion of which is highly productive farmland.

The main areas of industrial/commercial land use are Knowsley Industrial and Business Parks at the north of the Borough, Jaguar Land Rover at the south of the Borough and in the central area Huyton Business Park, Whiston Enterprise Park and Prescott Business Park to the south west of Prescott.

Predominantly residential areas include: Whiston, the north of Halewood, Huyton with Roby, much of Prescott, Kirkby, Cronton, Tarbock, Knowsley Village and Stockbridge Village.

2.5 Protected Locations

- 1 Local Nature Reserves (LNR) designated under The National Parks and Access to the Countryside Act 1949 (Section 21);
- 66 Local Wildlife Sites (Sites of Biological Interest);
- 6 Geological Sites; and
- 2 Ancient Woodlands.

2.6 Key Property Types

The Borough has a rich heritage of archaeological sites, there are:

- 121 Listed Buildings;
- 15 designated Conservation Areas; and
- 1 Grade II Historic Park and Garden at Knowsley Hall.

Archaeological information for approximately 2000 sites in Knowsley is held on the Historic Environment Record (HER). This record is held and maintained by Merseyside Environmental Advisory Service and updated as new information comes to light. There are currently no scheduled ancient monuments in Knowsley.

2.7 Known Information on Contamination

The Council holds some information on contamination in the District. As part of this Inspection Strategy all internal sources of information were identified, catalogued and reviewed and specific details recorded on the Contaminated Land Information Management System. Information was also obtained from the sources listed below. This allows for efficient access to appropriate information during the various stages of the implementation of this Inspection Strategy.

- Site investigation reports, primarily submitted as part of the development control process. Planning records form a valuable resource. In addition, investigations have been carried out by or on behalf of the Council, including investigations undertaken through the Part 2A process.
- Waste Management Sites
- Environmental Permit Sites
- Information provided by the Environment Agency and other regulatory bodies
- Locations of Petrol Station Sites

- Metals Survey
- Land Regeneration Database
- BGS information

2.8 Current and Past Industrial History

The following provides a summary of the key issues associated with the borough's industrial past. A more detailed description of the industrial history of the borough can be found within Appendix I.

Summary of Potential Issues

The most significant influences in terms of the legacy of **potential** contamination are considered to be:

- the deposition of various waste materials which occurred throughout the Borough. Waste Disposal Sites including extensive sites such as Stadt Moers, Coopers Moss and Kirkby Moss and smaller sites elsewhere within the Borough; many of the excavations resulting from the extraction industries, for example sandstone quarries and clay extraction, have been infilled through disposal of industrial and domestic wastes particularly from the 1950s onwards; prior to the formal regulation of waste disposal industrial waste tended to be disposed of within and around the curtilage of factory premises; land reclamation works, for example infilling of former ponds and drainage improvement in areas of moss land.
- the former use of Knowsley Industrial Park as a Royal Ordnance Factory (ROF) during the Second World War. The ROF was operational between 1940 and 1946. During its operational phase, the ROF site manufactured various types of munitions and arms.
- the wide diversity of industries developed on pre- and post- war industrial estates of Knowsley, Kirkby, Huyton and Halewood and in the industrial areas, for example, Prescott.
- cable manufacture and associated processes.
- former Railway Land (tracks and ancillary land).

2.9 Broad Geological and Hydrogeological Characteristics

The geology of the Borough is shown on the following geological maps:

- Geological Survey of Great Britain (England and Wales) Wigan Sheet 84, 1:50 000 Solid Edition, 1977;
- Geological Survey of Great Britain (England and Wales) Runcorn Sheet 97, 1:50 000 Solid Edition, 1980;

- British Geological Survey, North West England and North Wales, Sheet 53°N - 05°W, Solid Geology, 1:250 000, 1997;

Extracts from the relevant geological mapping are provided in Figures 2 and 3 below.

2.9.1 Solid Geology

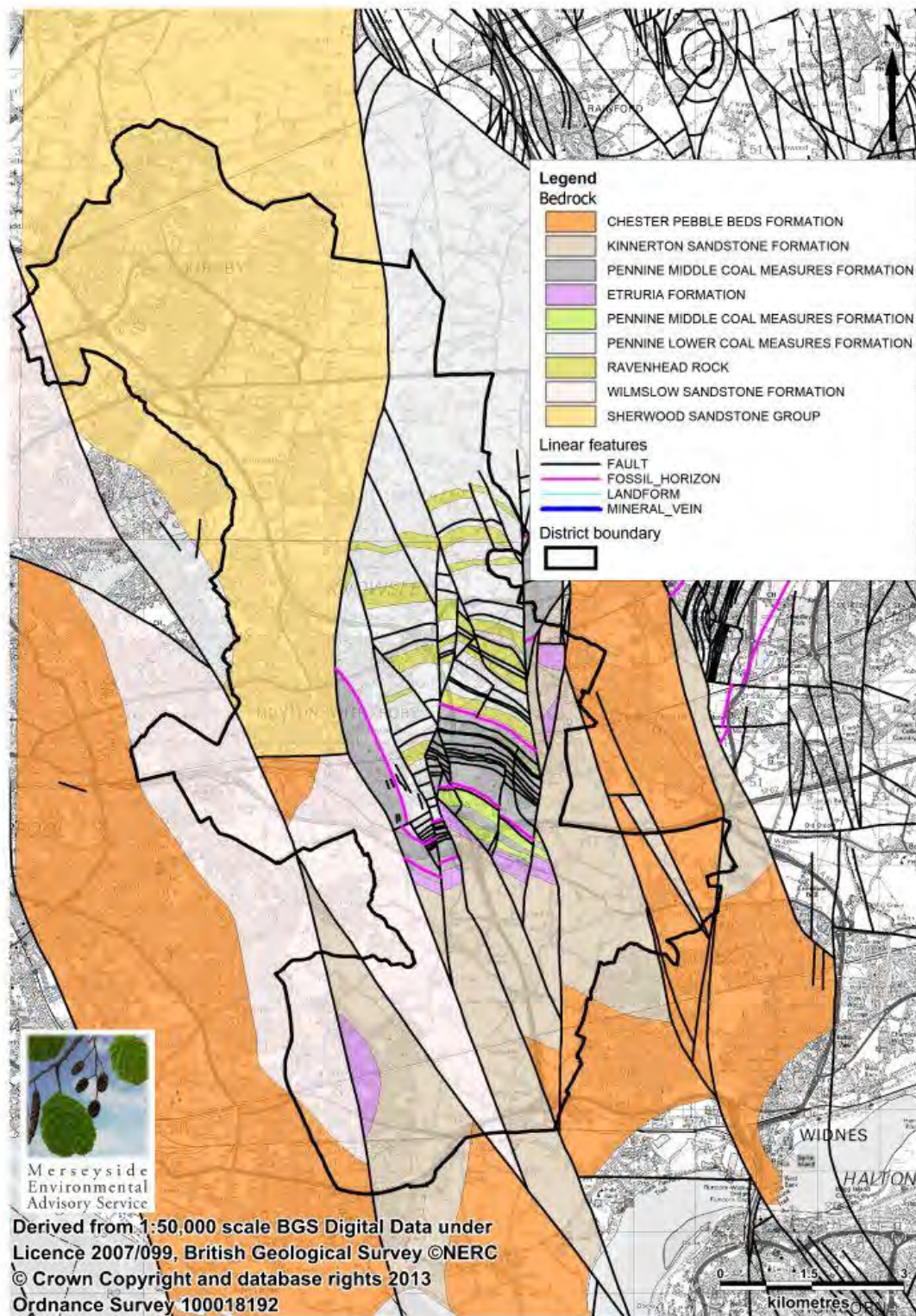


Figure 2: Map showing Solid Geology

The solid geology of Knowsley consists predominantly of sandstones of the Sherwood Sandstone Group, covering the majority of the lower third and western half of the Borough. The remainder is located in the north and east and this consists of occasionally minimal coal seams from the Coal Measures. There are also isolated areas of sandstone and mudstone of the Warwickshire Group and other sandstones within the Borough. The Coal Measures underlie central and eastern parts of the Borough.

2.9.2 Superficial Geology

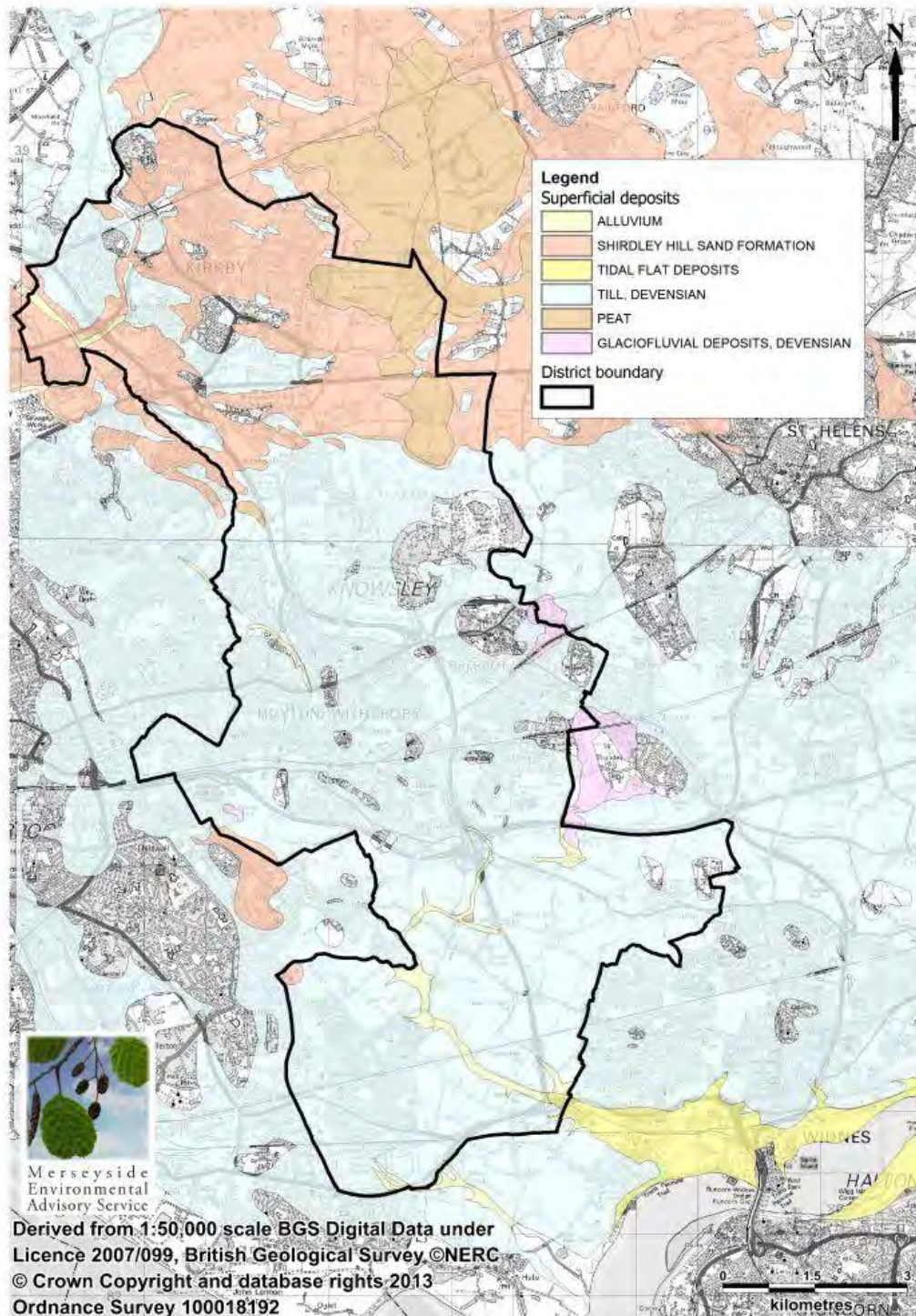


Figure 3: Map showing Superficial Geology

With the exception of a few areas of outcrop, the solid geology of the Borough is overlain by a variable thickness of drift deposits.

Glacial Till (boulder clay) covers the majority of the Borough, varying in thickness from 0-30metres. To the north of the Borough, the poor drainage of the glacial till has favoured the development of extensive areas of peat moss at Kirkby and towards Simonswood.

A widespread belt of windblown sand covers the underlying glacial deposits and bedrock over parts of the northern area of the Borough.

Small areas of peat deposits are present in the northern parts of the borough and alluvium deposits occur in the river valley of the River Alt and various brooks.

2.9.3 Local Hydrogeology and Use of Groundwater Resources

A number of water bearing units occur within the area giving rise to a range of aquifers both within the bedrock and superficial deposits. Generally, across north Merseyside, groundwater levels are rising with implications for potential pollution.

Principal Aquifers

The principal aquifer within the Borough is the Permo-Triassic Sandstone (including the Sherwood Sandstone Group) which underlies the majority of the Borough. The sandstone forms part of a larger outcrop comprising the Liverpool and Ormskirk aquifer unit.

Groundwater within the Liverpool and Ormskirk aquifer is heavily exploited for both public and industrial use with many abstractions located within and adjacent to Knowsley boundary. Concentrations of abstractions are located to the south and east of the Borough, around Whiston, Cronton and Halewood, and also to the north around Kirkby and Knowsley Village. Collectively, the source protection zones² for the sources cover virtually the entire sandstone outcrop in Knowsley Borough. Historical over-abstraction resulted in falling groundwater levels, although over the last two decades there has been a significant reduction in the actual abstraction with associated recovery. The groundwater also supports numerous small-scale licensed and unlicensed abstractions, provides baseflow to the River Alt and discharges to the River Mersey estuary.

The sandstones are generally covered in a complex series of superficial drift deposits, with glacial boulder clay being the most widespread type of drift. However, the drift is often thin and sandy and there are localised exposures of sandstone. Where low permeability drift deposits are thickly developed they will inhibit aquifer recharge and therefore decrease the vulnerability of the aquifer to pollution from surface activities. However, where drift deposits are thin, absent or sandy the vulnerability of the groundwater to pollution will be increased.

² Source Protection Zones provide additional protection for water sources. They are designated zones around public water supply abstractions and other sensitive receptors that signal there are particular risks to the groundwater source they protect.

Secondary A Aquifers

Secondary A aquifers within the Borough boundaries are dominated by rocks of Carboniferous age, comprising the Coal Measures, with locally developed permeable unconsolidated drift (superficial) deposits.

The Coal Measures underlie central and eastern parts of the Borough, around Huyton, Prescott and Knowsley Safari Park, and are surrounded to the west, south and east by the principle aquifer outcrop. There is also an isolated Coal Measures outcrop in the south of the area to the west of Halewood. The majority of the groundwater flow in the solid rock will be concentrated as fissure flow within the sandstone units of the Coal Measures. These units can be considered as individual minor aquifers separated by low permeability shale/mudstone units. However, a major influence on groundwater movement is likely to be the presence of old coal workings within the Coal Measures of the Borough. These can give rise to complex and rapid groundwater flow. Groundwater levels in the higher permeability units will be variable and may reach ground level giving rise to springs.

Superficial deposits are found throughout the area overlying the solid rocks beneath. Much of the area is covered with glacial boulder clay but to the north of Knowsley most of the drift outcrop is blown sand. Less extensive deposits include alluvium along Ditton Brook and limited deposits of glacial sand and gravel around Prescott. These deposits often occur as complex or mixed drift sequences and, where permeable, can be classified as minor aquifers in their own right and have some potential for localised exploitation. Although these deposits may reduce the vulnerability of the underlying aquifer, where present, they should be considered as capable of transmitting water to it.

2.10 Surface Waters

The main river within the central and northern area of the Borough is the River Alt. This rises in Huyton and flows in a north westerly direction 28 Km to its tidal limit at Hightown, in the Metropolitan Borough of Sefton.

In Knowsley, the tributaries of the River Alt include Croxteth Brook, Knowsley Brook, Simonswood Brook and Kirkby Brook. In the upper reaches of its catchment the River Alt drains highly urbanised and industrialised areas and is canalised in places along its length.

Water quality in the upper reaches of the Alt is generally poor, although since 1994 water quality has generally improved. Most noticeably, this has been through a reduction in the total length of watercourse with poor or bad water quality. With the exception of Simonswood Brook downstream of the confluence with Kirkby, where the water quality is classified as poor, the water quality in the tributaries of the Alt that lie within the Borough is classified as fair.

Towards the south of the Borough, the main watercourse is Ditton Brook, which drains south/south-east to the River Mersey. Ditton Brook rises as Prescott Brook in the built up area of Prescott. Below the confluence with Netherley Brook, where the stream becomes canalised, it becomes Ditton Brook. The other watercourses that make up the Ditton Brook catchment within Knowsley include Dog Clog Brook and Halewood Brook. These watercourses have, in general, poor water quality.

The Water Framework Directive (WFD) provides the mechanism to return all water bodies to Good Ecological Status. In Knowsley this is being implemented via the North West River Basin Management Plan (NWRBMP). This sets out a number of objectives and actions to alleviate pressure on water bodies. Through the WFD and the NWRBMP, plans and actions have been highlighted to return water bodies to good ecological status.

2.11 Natural Contamination

Defra and the British Geological Survey have produced Technical Guidance sheets for normal levels of contaminants in English Soils. Natural Background Concentrations (NBC) have been established for seven contaminants including contributions from both natural and diffuse anthropogenic sources, based on samples which have been collected systematically across England. NBCs for the Knowsley area will be taken into account when considering the significance of contaminant concentrations under the Part 2A regime. Recent guidance suggests that NBCs can be used as a line of evidence along with other criteria (e.g. site investigation data and risk assessments) to decide whether land is contaminated land as defined by Part 2A.

There are considered to be a number of potential areas of concern, regarding natural contamination in Knowsley; these are, natural methane released from underground coal workings and peat deposits and radon gas. Radon is a natural radioactive gas. Geology is the most important factor controlling the source and distribution of radon. Within Knowsley, there is a moderate radon potential over the central eastern part of the Borough coinciding with the Carboniferous Westphalian Rocks; the radon potential of the remainder of the Borough is low. The production of methane from underground coal workings and peat deposits will be an additional consideration in contaminated land site investigations and assessments.

2.12 Action already taken to deal with Land Contamination

Knowsley has been very active in the field of land reclamation; regeneration activities began in the early 1980s. The Council has achieved much in its aim of removing the blight of derelict land. Inevitably such land reclamation activities have also had a significant impact on the remediation of contaminated land.

Because of the history associated with development in Knowsley it is likely that there is an extensive contamination problem in parts of the Borough. Despite already having reclaimed a significant quantity of land it is acknowledged that there is now much land that may eventually require further treatment as a result of the redefining of contamination. Addressing ground contamination is thus considered to be an important priority for any land regeneration programme.

The majority of action taken to date to deal with land contamination within the Borough has been development led. Details of the activities undertaken will generally be held by the Planning Services; access mechanisms will be put in place through effective use of the Information Management System.

The council has also supported and advised companies and organisations that have carried out site investigations and remediation on a voluntary basis. Reactive work has also been undertaken in response to identified problems.

3 OVERALL AIMS OF THE STRATEGY

3.1 Aims of the Strategy

Through implementation of this Strategy the Council's aims are:

- to adopt a strategic risk based approach to the periodic inspection of the Borough for the purposes of identifying land which presents unacceptable risks to human health or the wider environment. Further, that such inspections are undertaken in an appropriate order, in compliance with the Statutory Guidance and in accordance with good practice;
- to ensure that available resources are effectively targeted;
- to ensure that all those affected by, and involved in, the inspection process have the same clear understanding of the rationale for inspection, how this will be carried out and over what timescale;
- by effective communication of the authority's intentions, to encourage voluntary action by polluters or other appropriate persons;
- to promote regeneration, improvement of the environment through effective links with wider Council and Regional policies;

Throughout the implementation of the inspection strategy, priority will be given to the identification of unacceptable risks to human health. Risks to other receptors will be assessed in consultation with internal departments and external organisations as appropriate.

3.2 Objectives and Milestones

Within the broad aims of the Strategy, the Council has identified a number of specific objectives which it aims to undertake within certain timescales. The identification of definitive timescales for the entire inspection process is not possible as it will be highly dependent on the number and type of cases identified and available resources. Table 1 in Appendix II identifies ongoing work areas and where possible, anticipated timescales.

Sites where urgent action is required may be identified at any stage during the implementation of the inspection strategy and therefore detailed inspections may be carried out on some areas of land before the preliminary inspection of the Borough is complete. The need to take action on such sites may influence the rate of progress in the overall programme.

Within the implementation of this strategy, to achieve the Council's overall aims, there is a need for a flexible approach, addressing the sites which present the most serious risks as quickly as possible whilst balancing the requirement to assess the entire Borough area with available resources.

4.0 Priority actions and timescales

4.1 Priorities

Within the overall strategic approach to the inspection of the Borough, the Council has identified the following priorities:

- **Identification of unacceptable risks to Human Health**
Sites causing or which pose an imminent risk of harm will be dealt with as a priority.
- **Sites causing significant harm or significant pollution of controlled waters**
Sites which are causing or pose an imminent risk of harm or water pollution may be identified at any point in the inspection process. Such sites will be dealt with as a priority.
- **Assessment of sites identified by other regulatory bodies**
As directed by the Statutory Guidance, the activities of and information gathered by other regulatory bodies will be taken into account when considering relative priorities.
- **Assessment of land currently or formerly owned or occupied by the Borough Council**
One of the key underlying principles of the strategic approach is that sites should be dealt with in an order appropriate to the apparent seriousness of the potential harm or pollution. The Council recognises that there may be sites within the Borough for which it may have particular responsibilities, through current or former ownership. The Council will seek to identify such land as soon as practicable. Such land will be dealt with in order of priority relative to all potential sites in the Borough.
- **Assessment of land allocated for sensitive uses within the emerging Knowsley Local Plan and adopted UDP.**

4.2 Timescales

It is difficult to formulate a definitive timetable for the overall inspection process; indicative timescales and progress to date are presented in Appendix II. The timescales, where stated, should be considered broad estimates.

4.3 Measuring Progress

Performance targets for delivery of Part 2A are set within the Environmental Health and Consumer Protection Service Plan and performance against targets are measures on an annual basis.

5.0 Procedures

5.1 Introduction

The key stages of the strategic inspection of the borough are listed below. Further details relating to each of the key stages are provided in Sections 5.0 and 6.0 below.

- Information collection
- Information evaluation
- Prioritisation
- Risk Assessment
- Programme for carrying out detailed inspections

5.2 Information Collection

Information will be obtained by the Contaminated Land Team from a variety of sources, which include internal Services, other regulatory bodies and external organisations. The identification of further sources of information is an on-going process; further datasets and information sources may, therefore, be identified in the future. The list of sources of information consulted are included within Appendix III.

5.3 Merseyside Contaminated Land Information Management System

The Council has developed a GIS based Contaminated Land Information Management System (CLIMS) in partnership with other members of the Merseyside Contaminated Land Officers Group (CLOG) with technical input and support from the Merseyside Information Service (MIS) / Mott Macdonald. The use of a common system across Merseyside provides significant advantages for data sharing and resulted in economies of scale in system development and support.

The CLIMS comprises a computer application developed in MapInfo which has the capability to capture, hold, analyse and display all the information required to implement the inspection duties of the Council. Further details on Information Management are presented in Section 8.0.

5.4 Information Evaluation

The primary aim of the information evaluation procedure is to enable the Council to identify areas of land which merit detailed inspection and to prioritise them such that they may be dealt with in an appropriate order.

In keeping with the aim of maintaining consistency on a Merseyside basis the Council, in partnership with other members of the Merseyside Contaminated Land Officers Group and the Merseyside Information Service, developed information evaluation and risk prioritisation procedures utilising CLIMS.

5.5 Prioritisation Methodology

A summary of the approach and general principles to be adopted is set out below. Figures 1 to 3 (Appendix IV) comprise the Development, Surface Water and Groundwater algorithms respectively used within the prioritisation methodology.

The aim of the methodology is to identify areas of land which could pose a threat to human health or the environment and subsequently to prioritise these areas such that further more detailed investigations and assessments may be planned in a systematic and efficient way. The approach is based on recognised good practice and guidance³.

The initial prioritisation procedure within CLR 6 (Part I Assessment) has been extended to include consideration of a wider range of receptors, as required by the Statutory Guidance and adapted to allow for classification and prioritisation of both the source and receptor datasets.

The methodology is based on the source-pathway-receptor (contaminant linkage) approach to contaminated land risk assessment. Potential contaminant linkages are identified through assessment of the spatial correlation between potential contamination sources and receptors. The correlation may be one of coincidence (occupying the same space) or influence (within an assumed or known zone of influence).

Information on pathways will be obtained as part of the information collection process. However, since pathways will often be difficult to accurately define in the absence of detailed site investigation information, the initial prioritisation procedure will rely on the confirmation of two parts of the contaminant linkage, the source and receptor(s). The prioritisation methodology may be further refined to take account of pathways in the future should suitable datasets become available.

The first stage in the procedure was to collect and classify both source and receptor datasets. The source and receptor datasets are those identified in Tables 1 and 2 (Appendix III). Part of this stage involved the digitization of contaminative land uses from OS base mapping for use within CLIMS and this work is now complete; the datasets will be refined, added to and/or modified as new relevant datasets are identified.

With regard to classification of source datasets, three priority classes (High, Medium and Low) have been identified based on the likelihood of contaminative substances being present at concentrations which may result in 'significant harm' being caused or may result in pollution of controlled waters.

The classes have been established using formalised professional judgement based on the potentially contaminative land uses considered. Particular reference has been made

³ Contaminated Land Research Report No. 6 London: Department of the Environment (1995)
Prioritisation and Categorisation Procedure for Sites which may be Contaminated

to work undertaken by Paul Syms of Sheffield University⁴ the Department of the Environment Industry Profiles⁵ and the classification of contaminating industries as outlined in the 1991 DOE Consultation Paper on Public Registers of contaminative uses⁶.

The classes have been incorporated into a definitive keycode list (maintained by Merseyside EAS) of the relative risks associated with potentially contaminating industries for use within CLIMS. Those industries not listed in the sources referenced above have been categorised within the keycode list based upon a comparison with industries of similar polluting potential. The keycode list is presented in Appendix V.

With regard to classification of receptors, the highest priority is given to the assessment of risks to human health. Risks to all receptors required by the Statutory Guidance will, however, be addressed in an order appropriate to the apparent seriousness of the potential harm or pollution. The methodology adopted thus allows resources to initially be concentrated on the sites that pose the greatest risk to human receptors.

Application of the prioritisation model places sites in one of three groups. Sites are placed into Group A, B or C in accordance with the highest grouping from each of the algorithms (Development, Surface Water and Groundwater). Sites placed in Group A (the highest priority sites) are subject to further more detailed assessment first, followed by sites in Group B, and then those in Group C (the lowest priority sites).

Within each group the GIS system automatically allocates a 'Hazard Ranking' number of 1 to 48 which further prioritises sites for further more detailed assessment. The Hazard Ranks used within the prioritisation process are also presented in Appendix V.

The outcome of the information evaluation procedure is a prioritised list of sites where it is possible that a contaminant linkage exists. Further work in the form of a detailed inspection (which may include detailed desk study, site walkover, limited sampling or intrusive investigation and site specific risk assessment) will generally be needed to determine whether or not the land actually appears to be contaminated land. The first stage of any further assessment is the collation and assessment of additional relevant information. This review can lead to the refinement of the initial prioritisation. Arrangements for carrying out detailed inspections and criteria for selecting individual sites are detailed in Section 6.0.

Determination of the need for and the degree of site inspection is based on available information. Any further information obtained, either through liaison with the site owner or through site inspection, will be assessed through the information evaluation procedures. The prioritisation factor may then be revised accordingly. The precise

⁴ Paul Syms, Desk Reference Guide to Potentially Contaminative Uses, IVSA (1999)

⁵ Department of the Environment, Industry Profiles, 47 Volumes, DOE (1996)

⁶ Department of the Environment, Public Registers Of Land Which May Be Contaminated A Consultation Paper, DOE (1991)

nature of the detailed assessments varies from site to site depending on the specific circumstances.

5.6 Additional Considerations

When evaluating the coincidence of sensitive receptors with known potential areas of contamination, to establish the likelihood of land meriting detailed inspection, consideration is given to any actions which have already been taken to deal with contamination. Any additional information that specific remediation or further remedial action has taken place by landowners, the local authority or others is taken into account.

When considering relative priorities, the Council takes account of the activities and information gathered by other regulatory bodies for example the Environment Agency in respect of issues relating to controlled waters and Natural England with respect to protected habitats. To this end, site specific advice is sought from other regulatory bodies as appropriate.

If during the course of information evaluation it becomes apparent that actual harm or pollution of controlled waters is being caused the Council will initiate procedures for determining that land is contaminated land.

This methodology may be updated in the light of the future publication of relevant best practice guidance.

5.7 Site Specific Risk Assessment and Guideline Values

The Council take a risk-based approach to the assessment and identification of contaminated land.

There are a number of methodologies available for assessment of the potential health and environmental impacts of land contamination including those described below. Decisions on the most suitable technique or range of techniques are determined on a site specific basis.

The Council will ensure that risk assessment models and guideline values are suitable for the purpose for which they are being used and are appropriately applied.

5.8 Human Health

Methodologies and guidance values available for estimation of potential risks to human health include the following.

Contaminated Land Exposure Assessment (CLEA) Framework

A revised version of the CLEA framework was published by the Environment Agency in January 2009 with the aim of helping in the assessment of potential risks to human health from long-term exposure to soil contamination.

The Environment Agency has also published new Soil Guideline Value (SGV) reports and associated TOX reports for eleven substances; further reports are anticipated in the future. As new TOX reports are issued using the new approach, the relevant existing reports will be withdrawn.

The updated guidance documents are intended to provide regulators, developers, land owners and other interested parties with relevant, appropriate, authoritative and scientifically based information and advice on the assessment of risks arising from the presence of contamination in soil.

It is important to note the Health Criteria Values (which describe the level at which long term human health exposure to chemicals in soil is tolerable or poses minimal risk) and SGVs do not represent the trigger for an unacceptable intake; they are based on minimal risks to health. SGVs represent trigger values above which there might be a significant possibility of significant harm (SPOSH), with the significance linked to the margin of exceedence, the duration and frequency of exposure and other site and contaminant specific factors that the enforcing authority may wish to take into account. In all cases further investigation and evaluation of risk will be required.

Other Generally Accepted Guidelines

In addition to CLEA guidelines reference may also be made to other accepted sources including:-

- Occupational exposure levels issues by the Health and Safety Executive;
- Environment Agency site specific pollution prevention guidelines from authoritative sources;
- Guidance issued by the Construction Industry Research and Information Association (CIRIA);
- Other risk assessment tools such as, RBCA, RISC and SNIFFER.

5.9 Controlled Waters

R & D Publication “Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources”

The Council will seek the advice of the Environment Agency when assessing risks to controlled waters. It is understood that the Agency would wish to see the R&D Publication “Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources”⁷ used as the framework for assessing the

⁷ Environment Agency (1999) Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources. R&D Publication 20.

need for remediation. The Consim Model has been developed by the Environment Agency as a tool to assist in such assessments.

In the case of surface waters, the Environment Agency will seek to protect existing water quality and have particular regard to Environmental Quality Standards. In cases where pollution of surface waters is occurring, the Environment Agency will seek to improve water quality.

5.10 Other Receptors

The Council will work with the relevant specialist organisations (including Natural England, Building Control Departments, English Heritage, the Food Standards Agency and Defra) when assessing the risks to ecological, animal, crop and building receptors to achieve consistent application of the regime.

6.0 PROGRAMME FOR INSPECTIONS

6.1 Criteria for Selecting Individual Sites For Inspection and Activities

Site inspection will be considered for areas of land where it is identified that a possible contaminant linkage exists. The primary objective of the inspection of land is to collect sufficient information to determine whether or not the land appears to be contaminated land, in accordance with the Statutory Guidance on determination. A secondary objective of inspection is to identify any contaminated land which is required to be designated a special site.

Determination of the need for and the degree of site inspection will be based on available information. Any further information obtained, either through liaison with the site owner or through site inspection, will be assessed with reference to the procedures set out within this strategy and appropriate technical guidance.

6.2 Timetable for inspection

Inspection will be undertaken as part of a rolling programme subject to annual review.

Sites where urgent action is required may be identified at any stage during the implementation of the inspection strategy. The need to take action on such sites may influence the rate of progress in the overall programme.

There is a need for a flexible approach to inspection; sites which present the most serious risks will be addressed as quickly as possible whilst balancing the requirement to assess the entire Borough area with available resources.

6.3 Arrangements for Carrying Out Detailed Inspection

Detailed inspection may include any or all of the following:

- The collation and assessment of documentary information, or other information from other bodies;
- A site visit for the purposes of visual inspection and, in some cases, limited sampling;
- Intrusive site investigation of the land involving the sampling and analysis of soils and/or groundwater.

Investigations will be undertaken in accordance with the Statutory Guidance and appropriate technical procedures. The nature and degree of investigation will be determined on a site specific basis. However, in all cases the principles and practices contained within Defra and Environment Agency sponsored technical guidance and other good practice publications will be adopted.

In conducting site investigations, all reasonable precautions will be taken to avoid harm, water pollution or damage to natural resources or features of historical or archaeological interest; the advice of appropriate regulatory authorities will be sought.

In accordance with recognised good practice, appropriately phased site investigations will be undertaken. If at any stage the results of such investigations demonstrate that there is no longer a reasonable possibility that a contaminant linkage exists, no further detailed inspection will be undertaken with respect to that contaminant linkage.

6.4 Inspection using statutory powers of entry

Under Section 108 of the Environment Act 1995, the Council has been granted powers of entry to carry out detailed inspections. Such inspections are termed “inspections using statutory powers of entry”.

Before carrying out any inspection using statutory powers of entry the Council will be satisfied, on the basis of available information that;

- In the case of site reconnaissance (visual inspection and/or limited sampling) there is a reasonable possibility that a pollutant linkage exists. Any sampling will be limited to that necessary to verify the pollutant linkages already identified; and
- In the case of intrusive investigation, that it is likely that both contaminants and receptors are present.

The Council will not carry out any inspection using statutory powers of entry which takes the form of an intrusive investigation if:

- It has already been provided with detailed information which provides an appropriate basis upon which the Council can determine, in accordance with Statutory Guidance, whether or not the land is contaminated land; or
- A person offers to provide appropriate information within a reasonable and specified time and then provides it within the agreed timescale.

Further details on site specific liaison are set out below.

6.5 Site Specific Liaison

The Council will endeavour, where possible, to consult owners, occupiers and other interested parties to establish whether appropriate information already exists on the condition of the land or whether such information could be made available. Where information is provided by third parties, it will be assessed to determine its adequacy.

Prior to any inspection being carried out, the Council will inform owner(s)/occupier(s) of the land and any other relevant persons that an inspection is required to take place. At this stage, details will be provided on what inspection entails and the indicative timescale for the investigation.

The permission of the owner(s)/occupiers of the land will be requested, in writing, to enter the land for purposes of detailed inspection under Part 2A. The letter will advise the owner(s)/occupier(s) of the powers conferred on the local authority under Section 108 of the Environment Act 1995 in the event that permission is not granted.

Section 108 (6) provides that, except in an emergency, if the premises to be inspected are residential, or if the inspection necessitates the use of heavy equipment, at least seven days notice will be given, unless there is an immediate risk to human health or the environment. In an emergency, these powers of entry can be exercised forthwith.

General liaison and communication strategies are set out in Section 10.0.

6.6 Health and Safety Procedures

Prior to conducting any detailed inspections consideration will be given to the potential health, safety and environmental hazards which may arise. Risk assessments will be undertaken to identify any potential hazards and precautions will be taken to control the associated risks to an acceptable level.

Appropriate health and safety procedures will be adopted to protect both site investigation personnel and the general public. Good practice guidance will be followed and relevant legislative requirements will be met in full.

6.7 Inspection of Potential Special Sites

Before authorising or carrying out any inspection consideration will be given to whether, if the land were found to be contaminated land, it would meet any of the descriptions of land given in the Contaminated Land (England) Regulations 2006 as requiring to be designated a Special Site.

Where there is evidence to suggest that a particular site would be designated a Special Site, if identified as contaminated land, the Environment Agency will be asked to undertake the detailed inspection.

The Environment Agency has set out the procedures to be adopted in the Environment Agency's Part 2A EPA (1990) (England) Process Handbook.

Before undertaking any detailed inspection, the Environment Agency will satisfy itself that it agrees that the site is a potential Special Site and that the requirements of the Statutory Guidance have been met. Where necessary, the Council will authorise a person nominated by the Agency to use the powers of entry conferred by Section 108 of the Environment Act 1995. The same conditions for using statutory powers of entry apply as for detailed inspection undertaken by the Council as detailed above.

If the Environment Agency agrees that a particular site is a potential Special Site it will provide notification in writing. The Environment Agency will, subject to the statutory

conditions for detailed inspection having been met, undertake the inspection on behalf of the Council.

Following inspection, information on the condition of the land and an opinion on whether significant contaminant linkages are present will be provided to the Council. Determining whether land appears to be contaminated land is the sole responsibility of the Council; this also applies where the detailed inspection is undertaken by the Environment Agency.

If the Environment Agency disagrees that a particular site is a potential Special Site it will provide notification in writing giving reasons.

6.8 Arrangements for the Appointment of Consultants/Contractors

At various stages in the implementation of this Strategy it may be necessary to appoint specialist consultants and contractors.

The Council has existing procedures for procuring such works and these will be utilised, where necessary. It is considered vital that any such works are well specified and managed.

7.0 INTERNAL MANAGEMENT ARRANGEMENTS FOR INSPECTION AND IDENTIFICATION

7.1 Responsibilities of Internal Services

The responsibilities within the Council for inspection and identification are as follows:

Environmental Health and Consumer Protection Service

The Environmental Health and Consumer Protection Service has the lead role in the implementation of the Contaminated Land Inspection Strategy assisted by Merseyside EAS.

In co-operation with other Council Services and external agencies as appropriate, the Environmental Health and Consumer Protection Service is responsible for all aspects of the implementation of the Contaminated Land Inspection Strategy; these include:

- Information collection and evaluation and prioritisation
- Liaison and communication;
- Carrying out detailed inspections;
- Identification and determination of contaminated land and Special Sites;
- Collation and recording of site investigation information;
- Reviewing decisions and the Strategy;
- Carrying out any necessary enforcement actions;
- Production and maintenance of the Public Register;
- Remediation of contaminated land;
- Production and making arrangements for, serving remediation notices;
- Managing and providing information.

Planning Services

Planning Services deal with planning applications for development where issues of land contamination must be considered. The majority of contaminated land issues are currently addressed through the planning regime, where contamination is a material planning consideration. Any remediation agreed as a planning condition will be dealt with under planning controls and not under Part 2A.

Legal Services

Legal Services will provide legal advice on the complex and wide ranging issues arising from the implementation of the Part 2A regime, including:

- Interpretation of legislation
- Exclusion from, and apportionment of, liability for remediation
- The recovery of costs of remediation and the relief from hardship
- Compensation to third parties for granting rights of entry

- Grounds of appeal against remediation notices, and procedures relating to such appeals
- Advice with regard to Council owned land and other land where the Council may be an appropriate person.

Merseyside Environmental Advisory Service

Merseyside Environmental Advisory Service will be responsible for providing technical and procedural advice and support in the implementation of the Strategy.

Other Services of the Council and all land owning Services of the Council, will be involved at various stages as providers of information and/or advice and through current or former land ownership.

8.0 INFORMATION MANAGEMENT

8.1 Information and Complaints

Complaints regarding contaminated land will be dealt with through the Council's existing procedures. Investigating officers will undertake appropriate actions and enquiries considered necessary to resolve any complaint having regard to Service procedures, statutory requirements and professional judgement.

The appropriate level and nature of further investigation will be determined on a case by case basis and will be dependent on a number of factors including; the nature of the complaint; the initial findings; the amount of information already available and an assessment in the context of the overall inspection programme.

Anonymous complaints or information provided anonymously will be evaluated by an investigating officer. Appropriate action will be taken on the basis of the merits of the information received.

8.2 Confidentiality

All complainants will be asked to provide details of their name and address which will remain confidential. There are circumstances where certain information may be required to be made public, for example, during the course of formal legal action. This issue would be discussed in detail prior to taking any such formal action.

8.3 Voluntary Provision of Information

If a person or organisation voluntarily provides information relating to contaminated land that is not directly affecting themselves, their families or their property, this will not be treated as a complaint. The information provided will be recorded and if appropriate allocated to an investigating officer. Investigating officers will take whatever actions and enquiries they consider necessary to follow up such information having regard to service procedures, statutory requirements and professional judgement.

8.4 Arrangements for Access to Information

8.4.1 Public Register

The regime provides for a public register, but only of land in respect of which a remediation notice has been issued, or where a remediation statement or declaration has been published. This information will be available for public inspection subject to any exclusions, for example, on the grounds of national security or commercial confidentiality. The details of information to be included on the Public Register are set out in The Contaminated Land (England) Regulations 2006.

The Public Register is available for inspection at The Huyton One Stop Shop on Monday to Friday between the hours of 9.00 am and 5.00 pm. The Public Register is currently held in paper and electronic form.

8.4.2 Information Requests

Requests made for access to information relating to the inspection process, for example, information on whether land has been inspected/details of any site investigation reports and condition of the land, will be dealt with in accordance with procedures for environmental information requests under the Environmental Information Regulations 2004 and the Council's Freedom of Information Policy.

9 Interaction with other Regimes

There are a number of other regulatory regimes, in addition to Part 2A, which are relevant in the context of the management of land contamination. The Council will liaise with the appropriate regulatory authority where there is potential overlap with the Part 2A regime.

9.1 The Planning Regime and Development Control

Under the Town and Country Planning legislation, the Council's Planning Service already considers the potential implications of contamination when developing planning policy and when it is considering individual applications for planning permission. The planning process will continue to be the primary mechanism to assess risks and set appropriate remediation requirements, on the basis of both the current and proposed land use.

Government policy for dealing with land affected by contamination under the planning system is set out in the National Planning Policy Framework (NPPF).

The NPPF (at Para. 121) states that planning policies and decisions should ensure that:

- The site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;
- After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990 and adequate site investigation information, prepared by a competent person, is presented.

Under the Building Regulations 2000, the Council's Building Control Section (or private sector Approved Inspectors) will also specify measures to be taken during construction, to protect buildings and future occupants from the effects of contamination. Guidance on such requirements is given in Approved Document C (Site Preparation and the Resistance to Contaminants and Moisture), 2004 Edition.

9.2 Pollution Prevention and Control (PPC) –The Pollution Prevention and Control Act 1999 and The Pollution Prevention and Control Regulations 2000 (now incorporated into the framework of the Environmental Permitting Regulations 2010)

A site condition survey must be undertaken prior to receiving a permit to operate as Part A processes under the Environmental Permitting regime.

Sites regulated under the Environmental Permitting regime, which become contaminated will generally be regulated under this power⁸. The Council is precluded from serving a remediation notice if it appears that the powers of the relevant enforcing authority under The Pollution Prevention and Control Regulations can be used. There may, however, be situations where Part 2A powers are needed.

Land determined to be contaminated land which is subject to regulation under the Environmental Permitting regime, where the installation is designated for central control (that is by the Environment Agency), is required to be designated as a Special Site.

An exception to the above is that historical contamination present prior to the permit being issued is dealt with under Part 2A powers.

9.3 The Environmental Damage (Prevention and Remediation) Regulations 2009 (SI 2009 No. 153)

The Environmental Damage Regulations 2009 came into force on 1st March 2009, they implement the European Environmental Liability Directive 2004/35/EC. They are based on the polluter pays principle requiring those responsible to prevent and remedy damage.

The regulations only apply where the environmental damage and the activity that caused it has occurred or requires preventing after the regulations came into force and they only apply to operators of economic activities.

Environmental Damage has a specific meaning within the regulations and it only refers to damage to land, water and ecosystems.

Local authorities are the enforcing authority in relation to damage to land; the damage must result in a significant risk of adverse effects on human health. DEFRA have released non Statutory Guidance entitled *The Environmental Damage (Prevention and Remediation) Regulations 2009, 2nd Update* November 2009.

Operators of economic activities should be aware that pollution of land may incur a liability under both the Environmental Damage Regulations 2009 and Part 2A of the EPA 1990.

9.4 Waste Management Licensing System

The Environment Agency currently license and manage waste management activities under Part II of the Environmental Protection Act 1990. There are three potential areas of interaction between the Part 2A regime and the waste management licensing regime:

- where significant harm or pollution of controlled waters occurs due to a breach of a site license under Part II of the Environmental Protection Act 1990. In this case, Part

⁸ Environmental Permitting Regulations (England and Wales) 2010

2A does not apply unless the harm or pollution is attributable to a cause other than a breach of a license;

- where the contamination results from an illegal deposit of controlled waste; and
- where certain remediation processes on contaminated land may fall within the licensing requirements of the Part II regime.

In the above circumstances, the Council is precluded from serving a remediation notice under Part 2A to remedy the harm or pollution of controlled waters; the Environment Agency has power to act under the waste management licensing regime in these cases.

9.5 Statutory Nuisance

The Part 2A regime replaced the statutory nuisance regime for dealing with nuisance that consists of, or is caused by land “being in a contaminated state”. The definition of “land in a contaminated state” covers all land where there are substances in, on or under the land which are causing harm or where there is a significant possibility of such harm being caused.

The statutory nuisance regime will continue to apply to the effects of deposits of substances on land which gives rise to offence to human senses, for example odours.

9.6 Water Resources Act 1991

This Act gives the Environment Agency powers to prevent or remedy pollution of controlled waters by using Works Notices. There is significant potential for overlap between these powers and the Part 2A regime. The appropriate application of either regulatory regime will need to be determined after consultation between the Local Authority and the Environment Agency.

9.7 Radioactive contamination of land

The 2012 Statutory Guidance does not apply to radioactive contamination of land. Radioactive contaminated land is covered by separate Statutory Guidance. In the event that land is affected by both radioactive and non-radioactive contaminants both sets of Statutory Guidance will apply, and the Council will what is a reasonable course of action having due regard for the relevant primary legislation and advice from the Environment Agency.

9.8 Other Regimes

There are a number of other regimes which may have implications for land contamination or which may overlap with Part 2A, these include:

- Food Safety (Part I of the Food and Environment Protection Act 1985)
- Health and Safety (Health and Safety at Work Act 1974 and the Construction (Design and Management) Regulations 2007 (SI 2007 No.320)

- Landfill Tax (The Finance Act 1996) and The Landfill Tax (Amendment) Regulations 2009
- The Control of Major Accident Hazards Regulations 1999

In all cases, the Council will liaise with the appropriate regulatory authority where there is potential overlap of interests with the Part 2A regime.

10 COMMUNICATION

10.1 Statutory Consultees

The Council will continue to maintain effective communication arrangements with appropriate statutory bodies. A list of the statutory consultees is contained within Appendix VI.

10.2 Owners, occupiers and other interested parties

There are a number of stages within the implementation of this strategy where it will be necessary, for the Council to liaise with site owners, occupiers and other interested parties. These include:

- during the inspection process;
- notification of the determination of contaminated land⁹;
- prior to the serving of a remediation notice¹⁰;
- when designating Special Sites.

Throughout the implementation of the Part 2A regime, it is the Council's intention to encourage voluntary action to secure the remediation of contaminated land. This approach requires effective communication with owners, occupiers and other parties. Where possible, Council officers will seek the co-operation of landowners and occupiers in carrying out their duties.

The Council recognises the importance of making decisions about contaminated land matters that are accepted by the community and are both defensible and transparent. A communications strategy will be developed and implemented for individual sites being investigated under Part 2A. Input will be obtained from relevant sources including Public Health England and the Environment Agency.

If necessary the findings of any inspection will be communicated to the affected community and consultations undertaken on the best way to achieve the successful remediation of the contaminated land problem.

10.3 Risk Communication

Under Part 2A, the Council will be determining the presence of contaminated land using a risk based approach. Decisions on contaminated land may often be very complex and in many cases impact on a variety of stakeholders.

Public acceptance of any decisions made is very important if contaminated sites are to be managed effectively. Effective risk communication is thus an essential element in the implementation of this strategy.

⁹ Section 78B(3) and Section 78B(4) of Part 2A Environmental Protection Act 1990

¹⁰ Section 78H(1) of Part 2A Environmental Protection Act 1990

The Council also recognises the importance of the need to prevent needless anxiety and planning blight. A balance will, therefore, need to be achieved concerning when and to whom information is given.

The Council will consult with Public Health England on site specific cases regarding health advice to be provided to residents.

Reference will be made to the SNIFFER publication, “Communicating Understanding of Contaminated Land Risks”¹¹ when developing any specific risk communication strategy for individual sites.

10.4 Trans-boundary Contaminant Linkages

Contaminant linkages may exist across Knowsley’s administrative boundaries. Knowsley has mutual boundaries with the Metropolitan Borough of Sefton, Metropolitan Borough of St Helens, the Borough of Halton, the City of Liverpool and the District of West Lancashire.

Where this situation arises, the Council will work with the neighbouring authority to agree a mutually acceptable method of assessing and, if necessary, remediating the site, with reference to appropriate legislation¹² and Statutory Guidance.

10.5 Risk summaries

Knowsley will produce a risk summary for land where the authority considers it is likely that the land may be determined as contaminated land. The risk summary should explain the authority’s understanding of the risks and must be understandable to all members of the public. The risk summary will be produced prior to the formal determination of land as contaminated land.

10.6 Written statements

Where the authority has inspected land and found little or no evidence to determine the land as contaminated land, a written statement will be produced to document formally that the land does not meet the definition of contaminated land under Part 2A, to minimize unwarranted blight.

¹¹ Scotland & Northern Ireland Forum For Environmental Research (SNIFFER) Communicating Understanding of Contaminated Land Risks (May 2010)

¹² Section 78X(2) Part 2A Environmental Protection Act 1990

11 REVIEW MECHANISMS

11.1 Triggers for Reviewing Decisions

There will inevitably be situations where changes in the condition or circumstances of the land or the surrounding environment may necessitate a review of the previous inspection findings for a particular area. A number of such triggers have been identified and are set out below.

Triggers for the Review of Inspection Decisions include:

- Significant changes in legislation;
- Proposed changes in the use of the surrounding land;
- Unplanned changes in the use of the land;
- Unplanned events (e.g. localised flooding, fires, spillages) where the consequences cannot be dealt with through other relevant environmental protection legislation;
- Reports of localised health effects which appear to relate to a particular area of land;
- Response to information or complaints from members of the public, businesses or voluntary organisations;
- Information from other statutory bodies, landowners or occupiers and other relevant interested parties;
- Changes in national guidance relating to specific types of site or contaminant.

The Local Authority will reconsider any determination that land is contaminated land if it becomes aware of further information which it considers significantly alters the basis for its original decision. The local authority will then decide whether to retain, vary or revoke the determination.

11.2 Review of the Inspection Strategy

The strategy will be periodically reviewed as a working document at least every five years. Revised versions of the Strategy will be available for viewing on the Council's website. Hard copies will also be available from Environmental Health and Consumer Protection Service on request.

Appendix I

Current and Past Industrial History

Current and Past Industrial History

The following provides a brief overview of the industrial history of the Borough and in particular describes the nature and scale of activities which may have caused land contamination. Given the great diversity of industries which have operated at various locations in the Borough it is not possible to discuss in detail all industries known to have been established; this section aims to identify the main influences in terms of the potential legacy of land contamination.

General Overview

The following provides a brief overview of the industrial history of the Borough and describes the nature and scale of activities which may have given rise to land contamination. Given the diversity of industries which have operated at various locations in the Borough it is not possible to discuss in detail all industries known to have been established; this section aims to identify the main influences in terms of the potential legacy of land contamination.

The main source of employment for many centuries in Knowsley was agriculture. The area retained its mainly agricultural character until well into the nineteenth century. A wide range of craft industries were also undertaken, operated on a domestic and workshop basis. Gradually, however, other industries developed to provide local employment. With the exception of Prescot, which has industrial roots from as early as the fourteenth century, most of the industrial development in Knowsley has taken place during the twentieth century.

Improvements in transport, based initially on the turnpike roads and later the railways, were of particular importance in the historical development of the area. Historically, the main industries within Knowsley included numerous collieries, the extraction of other minerals (including, gravel, marl, clay and sandstones and pebble beds), wire manufacture, watch making and potteries. Other forms of manufacturing were also present together with brewing, town gas production and iron working. Further details on the main industrial influences within the Borough are provided below.

There was rapid expansion from the end of the Second World War up to the 1960s in the area currently served by KMBC. In terms of industrial development and new house building, this was a period of sustained growth. Much of this economic activity, however, was dependent on the branch plants of major companies. Consequently, Knowsley was hit very hard during the recession of the 1970s and early 1980s when many firms closed such plants.

In recent years the economy has diversified and today, whilst manufacturing remains a dominant employer. The majority of companies are in the service sector. Knowsley has a thriving business community with small and medium sized companies and national and international companies located within the Borough. Industrial sectors represented include automotive, aerospace, chemical; engineering; electronics; food and drinks,

textiles; energy and a range of hi-tech companies and financial and professional services.

Knowsley Industrial Park is one of the largest industrial parks in Europe containing over 1000 companies providing one of the largest concentrations of development land and existing industry in Merseyside.

There are two Part A2 and 29 Part B permitted processes within the Borough area, Potential areas of overlap between the Part 2A regime and Environmental Permitting are described in Section 9.2.

Overview of Main Historical Industries

Potteries

The establishment of a number of potteries in the fourteenth century, the earliest recorded in the region, was to provide an important stimulus to Prescott. Pottery making was an important element in the economy of Prescott until the middle of the nineteenth century and was also practised on a smaller scale in surrounding townships including Whiston.

Prescot town plans dating from the early eighteenth century indicate the presence of six pottery works using local white and red clays. The kilns were centred on the Eccleston Street area. The Ordnance Survey map of 1848 showed three potteries still in operation.

Whiston was also known for its pottery manufacture; the earliest reference being in the late eighteenth century. The main area for industry was in the west of the township leading into Huyton Quarry.

A group of pits in Knowsley Park (Mill Pits, Crow Pits and Wilton's Pits) are known to have been used in the past for clay extraction for the pottery industry.

Whilst pottery manufacture was widespread within Merseyside region in the eighteenth century the industry gradually declined and had largely died out by the mid nineteenth century.

Watch making and Tool Making

A notable feature in Britain's industrial development was the increased output of a wide variety of iron goods. Some of the Merseyside region's most important products were small products such as watches, small tools and nail making.

Domestic working of metals in small workshops or houses was a major industry in south west Lancashire from the sixteenth century onwards. Prescott and the surrounding villages have a long history in the manufacture of files and other small tools used particularly in the watch making industry.

Watch making was established in the town in the seventeenth century and developed rapidly through the eighteenth century. During the eighteenth and nineteenth centuries,

Prescot and its vicinity supplied many of the firms in the main cities with movements and watch making tools.

In the late 1800s some of the older metal goods industries experienced a fairly rapid decline. In Prescot some watch parts and tools continued to be made and from the 1890s one watch factory, the Lancashire Watch Company tried to compete with mass production methods but eventually this closed in 1910. Its successor, the Prescot Mechanism Company, carried on for another 60 years.

Cronton was renowned in the sixteenth century for its array of tool-workshops and inherited a similar reputation in the watch making industry to Prescot.

Smaller industries, for example in Whiston, included file and tool makers who provided items for the clock and watch industry in Prescot.

Cable Manufacture and Associated Activities

Cable manufacture and associated processes, for example copper and aluminium refining, has a long established history in Knowsley and in particular Prescot, dating back to the late 1800s.

The industry still plays an important role as an employer within the locality.

Manufacturing

A wide diversity of manufacturing industries have existed and continue to operate in the Borough, including the motor car production, engineering and metallic industries, motor and electrical appliance manufacture, machinery tools, food, pharmaceuticals, chemicals, pesticides and plastics manufacture.

Industrial and commercial activities were and continue to be largely centred on the areas of Knowsley Industrial Park developed on the site of the former Royal Ordnance Factory, Knowsley Business Park, Huyton Industrial Park/Whiston Enterprise Park, Halewood industrial area and parts of Prescot.

Coal Mining

Mining activities were predominantly centred on the townships of Prescot, Whiston, Tarbock and Huyton situated on the south western extent of the South Lancashire Coalfield.

The accessibility of the rich seams of coal close to the surface, which was mined from the early sixteenth century, provided an important impetus for the development of the Borough, particularly Prescot. The main mine was at Prescot Hall. Much of the coal produced was destined for Liverpool and coal mining in the town continued to prosper until the construction of the Sankey Canal in 1767 enabled to use of other sources of coal. Coal from the Prescot area was also carried by sea from Halebank and Ditton during the 17th and 18th Century.

The township of Whiston is also historically linked with coal mining, the first reference to which appeared in 1521. Many shafts were sunk around the area including those at Carr

Colliery of 1760s; Whiston Colliery of 1802 (closed 1890); Halsnead Colliery of 1802 (closed 1895) and Cronton Colliery which was begun in 1913 and closed in 1984. The collieries made good use of branch lines constructed for ease of transportation to a widening market.

In the late nineteenth century, the site of the former Whiston Colliery was developed. It opened as Tushingham Metallic Brick Works manufacturing bricks made from a mixture of local clay and shale until its closure in the early 1970s. The land was then used as a landfill site by the then Merseyside County Council and on completion of landfilling became public open administered by the Council.

Coal mining continued as a major industry in the area during the early nineteenth century (the 1st Edition Ordnance Survey Map records nine major collieries in the Prescott area) but during the latter half of the century many mines were worked out particularly those in Tarbock and Prescott.

Quarrying and Extractive Industries

In addition to coal mining, other extractive industries in the Borough involved the digging of a range of materials including gravel, clay, marl and peat and the quarrying of sandstone and shale.

Documentary evidence of stone quarrying in Knowsley dates back to the early sixteenth century. The two areas which seem to have been amongst the earliest to be exploited were Copt Holt in Whiston and Pex Hill in Cronton. By the time the 1st Edition Ordnance Survey was made in the mid nineteenth century there were substantial quarries extracting sandstone in Cronton, Huyton, Kirkby, Knowsley, Roby, Tarbock and Whiston.

The digging of clay for bricks and their firing occurred in the eighteenth and nineteenth centuries. During the nineteenth century there was a move towards larger more specialised brick production, sites are known in Tarbock, Knowsley and Whiston.

The digging of marl for use as a fertiliser was practised by local farmers.

Landfill

The deposition of a variety of waste materials has taken place in a number of locations, for example the infilling of excavations, land reclamation works, pre- and post- licensing landfill sites. These include the very substantial areas of Stadt Moers, Coopers Moss and Kirkby Moss as well as less widespread but deeper sites such as Holt Quarry, Whiston.

Additionally, numerous agricultural ponds were infilled using waste materials in the 1950s to 1980s, and streams culverted or diverted, with the channels backfilled with waste materials.

Former Railway Land

A number of the railways which ran through the Borough are no longer used and in some areas track has been removed. For example, following discontinued use of the old Cheshire Lines Railway and the removal of the track from two sides of the Halewood Triangle Junction, land was purchased from British Rail in 1982 for the development of the Halewood Triangle Country Park, opened in 1986.

Appendix II

Objectives and Timescales

Table 1: Objectives and Timescales

Objective	Provisional Timescale/Target	Action	Output/Record	Possible Consultation (as required)
Development of Information Management System (IMS) • Input Module • Output Module • Analysis Module • Database	• Complete • Complete • Complete • Complete	• Subject to further development as necessary	• IMS with required functionality	• MIS • CLOG
Collection of appropriate Information on Sources, Pathways and Receptors	• Collection complete	• Update and review as new information becomes available	• Up to date records stored in GIS	• Council Departments • Statutory Bodies • Others
Establishment of areas of land currently/previously owned or occupied by the Council	• Data collection complete. • Information stored in GIS format and held by Asset Management	• Update and review as new information becomes available	• Up to date records stored in GIS	• Council Departments • Current owners, occupiers and other interested parties
Establishment of efficient liaison and information exchange mechanisms (i) Internal (ii) External	• Established and on-going	• Develop and implement procedures for liaison and information exchange – see Communication Section 10.0		• Statutory Bodies • Council Departments • Owners • Occupiers • Other Interested Parties • Wider community

Objective	Provisional Timescale/Target	Action	Output/Record	Consultation
Evaluation of information – initial screen	• Complete	• See Prioritisation Methodology Section 5.5 • Includes land currently or previously owned/occupied by the Borough Council	• Sites allocated into group A,B or C for development, surface water and groundwater receptors, then allocated into the highest overall group.	• MIS • Environment Agency • Other statutory bodies
Further Evaluation to sub-prioritise groupings from initial screen – High and Medium Priority Sites	• Complete	• See Prioritisation Methodology Section 5.5 • Includes land currently or previously owned/occupied by the Borough Council	• Sites sorted in the order development receptor group, surface water receptor group, • Record on IMS and related files	• Statutory Bodies • Council Departments • Owners • Occupiers • Other Interested Parties • External contractors

Objective	Provisional Timescale/Target	Action	Output/Record	Consultation
Programme Detailed Inspections	• Continued support for site inspection and remediation under planning regime of voluntary work. • For sites where urgent action is needed-immediate and on-going.	• See Programme for Inspection Section 7.0	• Justifications • Inspection of Special Sites conducted by Environment Agency	• Statutory Bodies • Council Departments • Owners • Other Interested Parties
Commence Detailed Inspections	• Continued support for site inspection and remediation under planning regime of voluntary work. • For sites where urgent action is needed-immediate and on-going. • Inspection of urgent sites may be required at any time in the process	• See Programme for Inspection Section 6.0	• Determination whether site is contaminated land or not • Appropriate details on file/IMS • Appropriate details on Register	• Statutory Bodies • Council Departments • Owners • Occupiers • Other Interested Parties • External Contractors

APPENDIX III

Sources of Information

Table 2: Information on Receptors

Receptor	Land Use Type	Sources of Information include:
Human Beings	- Allotments - Residential with gardens - Residential without gardens - Schools or nurseries - Recreational/Parks, Playing Fields, Open Space - Commercial or Industrial	- UDP - OS maps - MIS data - Internal Departments
Ecological Systems and other protected locations	- SSSIs - National Nature Reserves - Marine Nature Reserves - Areas of special protection for birds - European sites - SAC, SPAs - Candidate SACs and SPAs - Ramsar Sites - Local Nature Reserves -	- UDP - MIS - Merseyside EAS - Natural England
Property (buildings)	- Ancient Monuments - Buildings	- English Heritage - Merseyside Sites and Monuments Record (SMR) - EAS - UDP
Property (Other e.g. crops and livestock)	Agricultural land Allotments Forestry areas Other open spaces, rivers lakes etc	- MAFF - Food Standards Agency - Agricultural Land Classification maps are held by EAS - Forestry Commission
Controlled Waters	- Surface waters - Drinking Water Abstractions - Source Protection Zones - Abstractions (including licensed, unlicensed, potable and non-potable) - Groundwaters – Major Aquifers - Bathing Water Designations - Fisheries Designations - Shellfishery Designations	- OS map data (except culverts) - Environment Agency - Environment Agency - Environment Agency/Environmental Health - Environment Agency - Environment Agency - Environment Agency - Environment Agency

Table 3: Information on Sources

Information Type	Sources of Information include:
Historical Mapping	Ordnance Survey/Landmark
Potentially Contaminative Land Uses (digitised polygons)	EAS/Internal Departments
Site Investigation Reports	Environmental Health/Planning/other Council Departments/NHBC/SMR
Previous Planning History	Planning
Part A and Part B processes	Internal Departments/ Environment Agency
Petrol Stations	Fire Brigade/Internal departments
Pre-licensing Landfill Sites	Environment Agency/Planning/ Environmental Health
Waste Management Licences	Environment Agency
Landfill Database	Environment Agency
Potentially Contaminated Sites Known to the Environment Agency	Environment Agency
Location of Sites Registered Exempt under Schedule 3 paragraphs 9 & 19 of the Waste Management Licensing Regulations 1994	Environment Agency
Location of Sites Registered Exempt under Schedule 3 paragraph 45 of the Waste Management Licensing Regulations 1994 (Exempt Scrap Yards)	Environment Agency
Location of Waste Management Sites that have been surrendered	Environment Agency
Information on Sites affecting/potentially affecting surface waters	Environment Agency
Information on Sites affecting/potentially affecting groundwaters	Environment Agency
Sites Registered under Alkali, & Works Regulations Act 1906	Environment Agency
Quarrying Records	Planning/EAS
Natural Contamination	British Geological Survey/Soil Survey and Land Research Group/Imperial College, London
Aerial Photographs	EAS
Trade Directories	Public Record Office and Local Libraries/SMR
Historical Land Use – specific sites	Merseyside Chief Officers
Agricultural Land Classification Survey	MAFF

Table 4: Information on Pathways

Information Type	Sources of Information include:
Geology	British Geological Survey
Mining Data	British Geological Survey/Coal Authority/Mineral, Valuer/County Record Offices/
Hydrology	Environment Agency/ Ordnance Survey
Controlled Waters	Environment Agency/Environmental Health/OS map data (except culverts)

Note: A number of the data sources fit more than one category, for example geological information may provide information on both “pathways” and “sources”.

Appendix IV

Prioritisation Methodology

Figure 1: Part I Assessment- Development

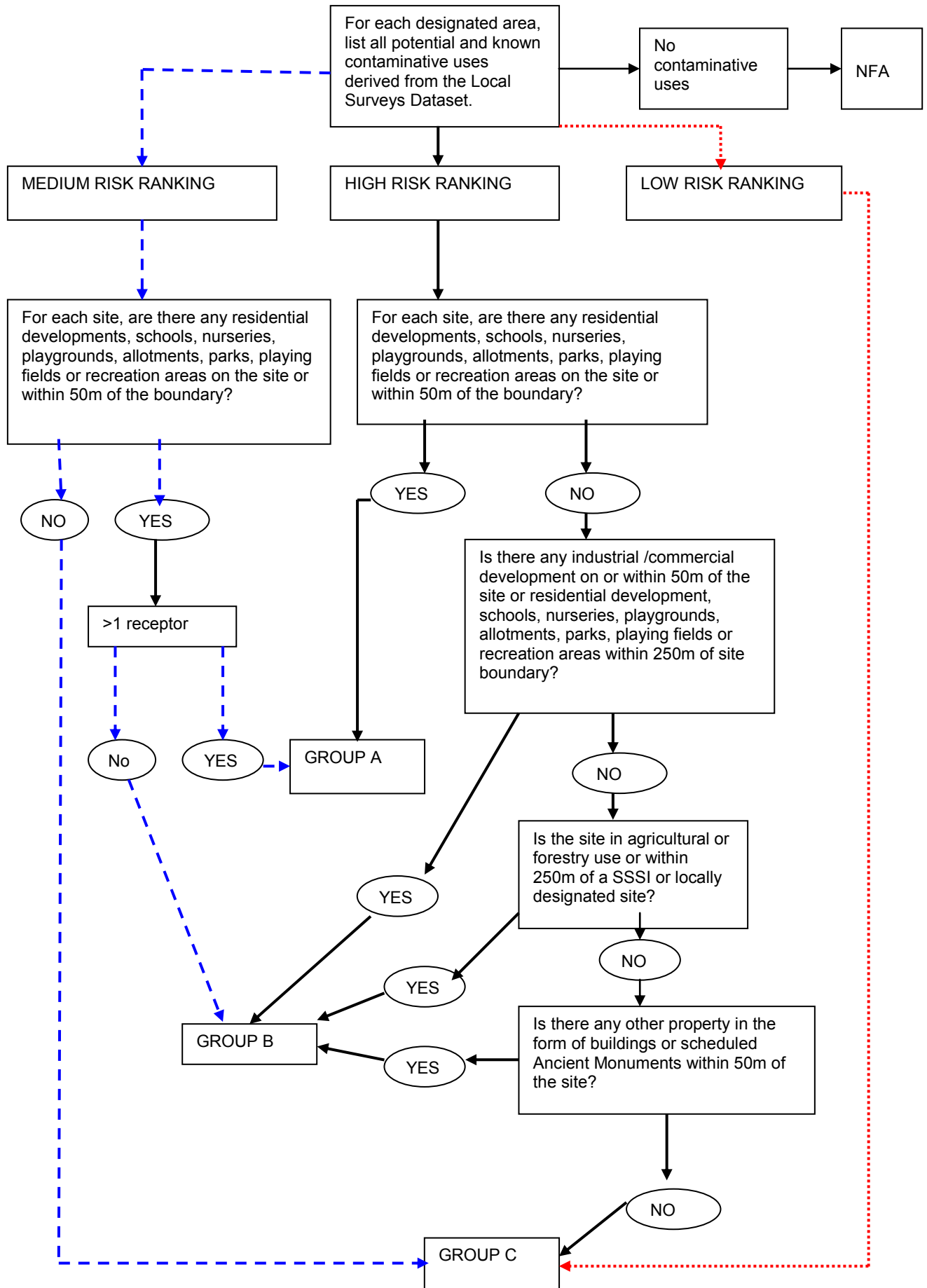


Figure 2: Part I Assessment- Controlled Surface Waters

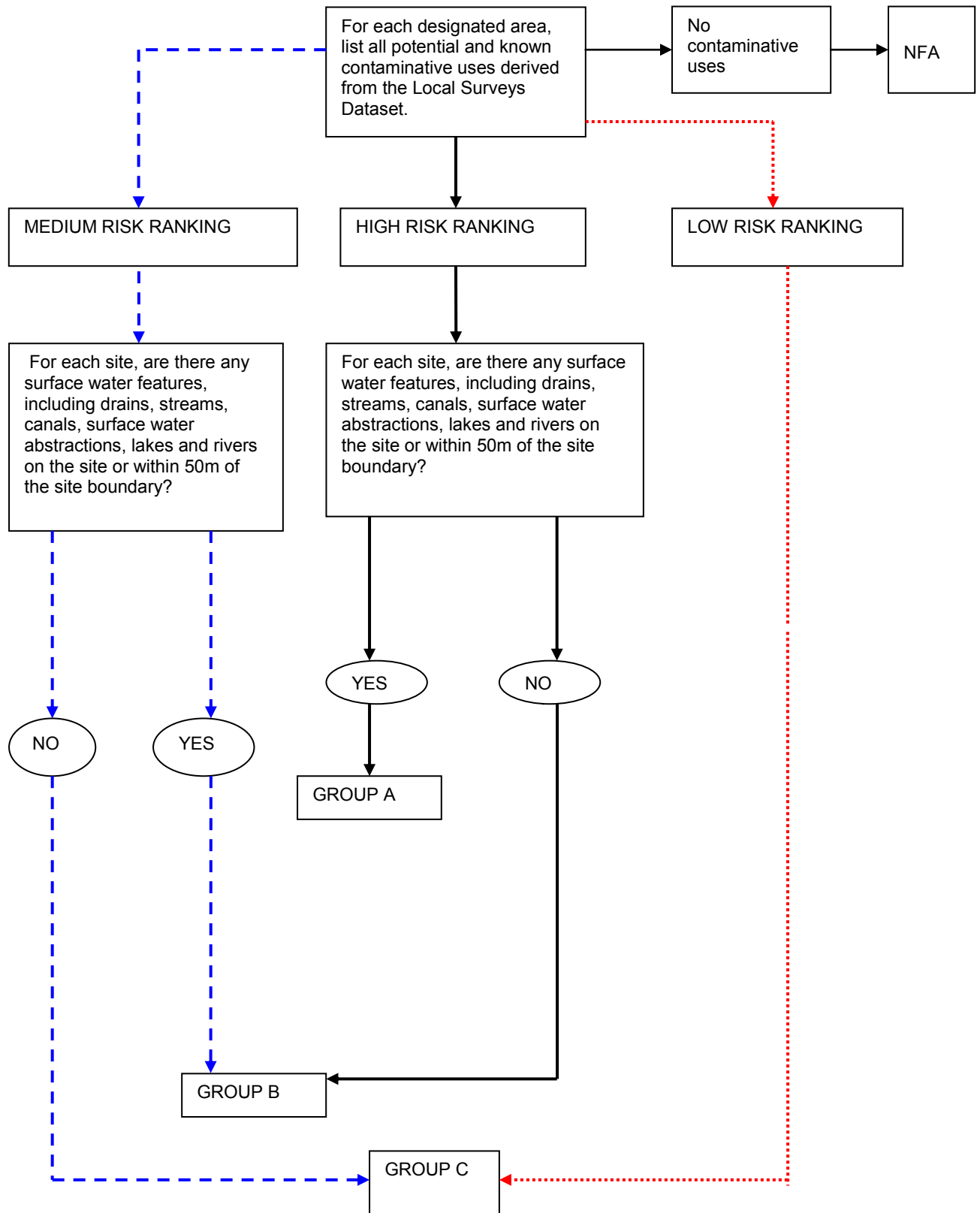
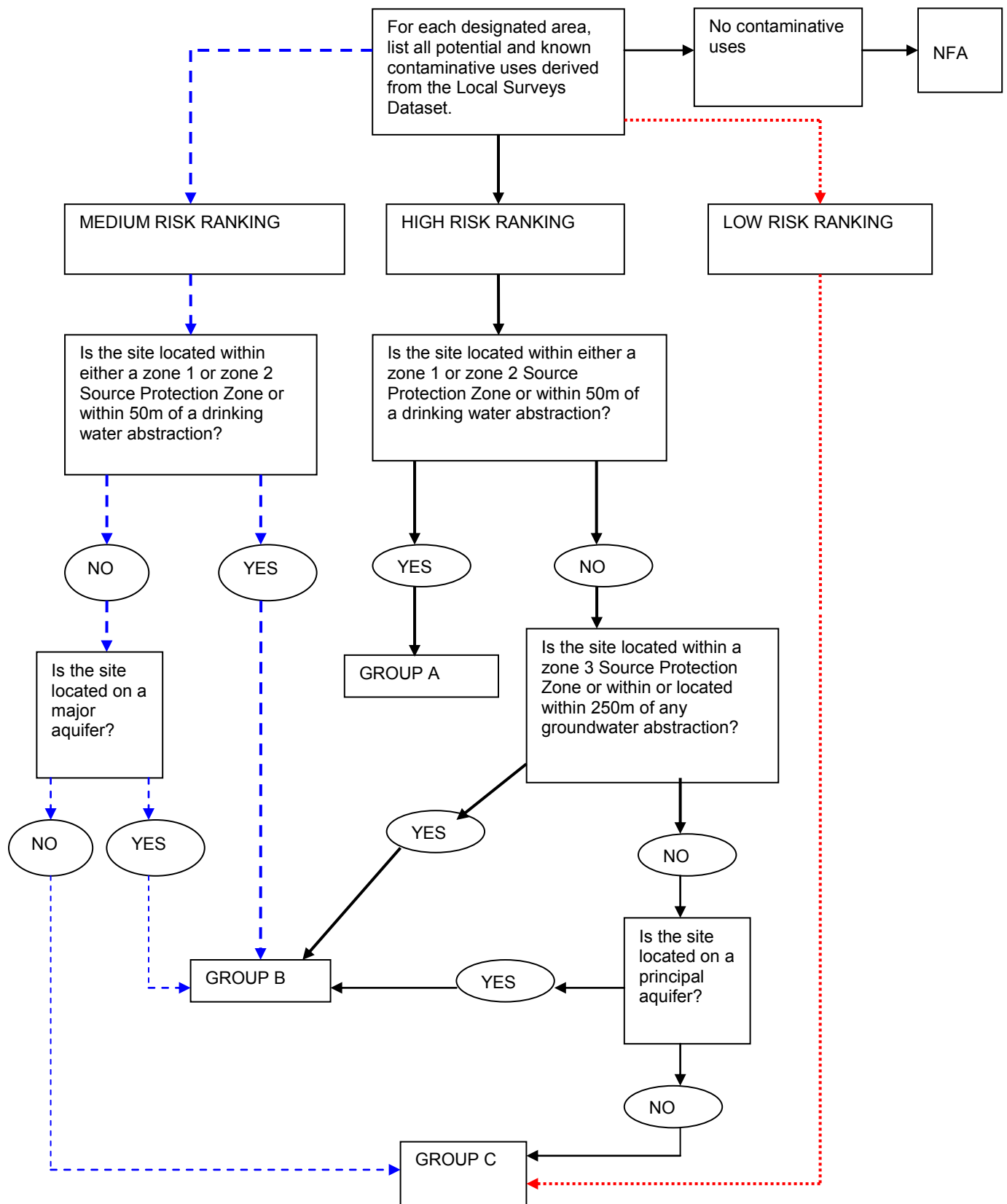


Figure 3: Part I Assessment- Controlled Ground Waters



Appendix V

Revised Merseyside EAS Key Codes and Hazard Rankings

Revised Merseyside EAS Key Codes and Hazard Rankings

Keycodes	Revised Hazard Rankings based on professional judgement with reference to Syms (1999) index of Perceived Risk as agreed by the CLOG Sub (Sub Group on 28/05/02	Descriptions	Revised Priority Classifications based on professional judgement as agreed by the CLOG (Sub) Sub Group on 19/04/02 with reference, where appropriate to work undertaken by Syms, Pickford and Landmark
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HIGH

AS	1	Asbestos Manufacture and use.	HIGH
CH	2	Manufacture of cosmetics, manure, fertilizers & pesticides, detergents, oil, organic-based pharmaceuticals, other incl. glues, gelatines, recording tapes, photographic film	HIGH
RA	3	Storage, processing or disposal of radioactive material	HIGH
GA	4	Gasworks, coke works, coal carbonisation and similar sites. Production of gas from coal, lignite, oil or other carbonaceous material other than waste	HIGH
XI	5	Incinerators-waste management operations	HIGH
XL	5	Landfill waste-the deposit of waste in, on or above land	HIGH
DT	5	Drum and tank cleaning	HIGH
BU	5	Burial of diseased livestock	HIGH
DE	5	Premises housing surface cleaning and degreasing operations	HIGH
OR	6	Oil Refining Petrochemical production and storage.	HIGH
OL	6	Major oil & petrol storage (not including refining or production) and all gasometers which are not in gasworks	HIGH
TA	7	Tar, bitumen, linoleum, vinyl and asphalt works.	HIGH
DY	8	Dye & pigments	HIGH
PA	8	Paints, varnishes, printing inks, mastics, sealants & creosote	HIGH
AB	9	Animal slaughtering and basic processing	HIGH
AN	9	Animal by-products (i.e. animal parts) e.g. soap, candles & bone works	HIGH
TY	9	Tannery, leather goods and skinnery	HIGH
HM	10	Heavy product manufacture-rolling & drawing of iron,	HIGH

		steel & ferroalloys-includes major Tube Works	
FY	10	Furnaces & Metal processing/casting/forges/smelting-Ferro and Aluminium Alloys-Manganese Works, Slag Works & Blacksmiths.	HIGH
PL	10	Electro-plating, Galvanising & Anodising	HIGH
MG	11	Civilian manufacture & storage of weapons, ammunition, explosives & rockets, incl. ordnance	HIGH
MD	11	All Military Establishments incl. Firing Ranges (if not specified as Civilian)	HIGH
SP	12	Recycling of metal waste incl. scrap yards and car breakers	HIGH
TR	13	Timber treatment.	HIGH
MA	14	Manufacturing of engines, building & general industrial machinery, incl. nuts & bolts, gas fittings, wire rope/cable and ordnance accessories	MEDIUM
HT	14	Manufacturing & repair incl. (i)ships (ii)aerospace (iii) rail engines and rolling stock	MEDIUM
LT	14	Manufacture of cars, lorries, buses, motorcycles & bicycles	MEDIUM
MP	15	Constructional steelwork, metal structures & products & building materials	MEDIUM
RB	16	Natural and Synthetic Rubber Products incl. tyres and rubber products	MEDIUM
BK	17	Manufacture of clay bricks & tiles, including assoc. activities e.g. brickfields, also solitary kilns (other than limekilns)	MEDIUM
CR	17	Tableware & other ceramics	MEDIUM
CE	17	Concrete, cement, lime & plaster products, also includes solitary lime kilns	MEDIUM
CC	18	Coal storage/depot	MEDIUM
MN	18	Areas of mining and single or a group of shafts other than coal, or not specified-incl. levels, adits, etc. Also areas assoc. with Mineral Railways	MEDIUM
CY	18	Coal mining. Areas include assoc. surface activities in area but not including spoil heaps or coal mine shafts (<i>this is an EAS modification</i>)	MEDIUM
PT	18	Extraction of alluvial sediments (sand, clay, marl and gravel)	MEDIUM
QU	18	Quarrying of all stone (incl. limestone, gypsum, chalk & slate) and ores, includes all opencast mining & slant workings also slate/slab works, flint works, stone yards	MEDIUM
ML	18	Abrasives, and products (not including Asbestos)	MEDIUM
PW	19	Electricity generation and distribution, incl. large Transfer Stations	MEDIUM
PR	20	Pulp, paper & cardboard manufacture	MEDIUM
PD	20	Paper, card, etc. products (e.g. packaging)	LOW
NW	20	Printing of newspapers	MEDIUM
PN	20	Printing other than News Print	MEDIUM

GL	21	Flat glass and glass products manufacture	MEDIUM
SW	22	Sewerage, septic-tanks, effluent-incl. all filter beds	MEDIUM
SL	22	Storage treatment or disposal of sludge including sludge from water treatment works	MEDIUM
XT	23	Waste transfer stations	MEDIUM
GG	24	Repair & sale of (i) cars & bikes (ii) parts (iii) motorway services	MEDIUM
DP	25	Transport Depot, Road Haulage, Corporation Yards, Commercial vehicle fuelling.	MEDIUM
FU	26	Sale of automotive fuel	MEDIUM
RL	27	Rail sidings, Yards, Rail Wharf, Goods Depot, Station etc.	MEDIUM
RW	28	Railway Tracks-up to 4 tracks wide or 30m.	MEDIUM
MR	29	Mineral Railways also known as 'Tramways' or inclines- incl. urban passenger 'Tramways'	MEDIUM
WR	30	Insulated wire & cable for electrical/telephone purposes	MEDIUM
BT	30	Batteries, accumulators, primary cells, electric motors, generators & transformers	MEDIUM
HE	30	Manufacturing of distribution, telecomms, medical, navigation, metering & lighting	MEDIUM
LE	30	Computers, office machinery, business/industrial electrical goods	MEDIUM
HS	30	Manufacturing of electrical and electronic appliances	MEDIUM
TX	31	Natural and man-made textile manufacture and products including Hemp rope and linoleum	MEDIUM
LY	32	Laundries & dry cleaning (larger scale not usually "high street")	MEDIUM
OF	33	Outfalls incl. Warm water, industrial effluent, etc. unless directly attached to other feature e.g. end of sewer pipe	MEDIUM
WK	33	Factory & Works-use not specified	MEDIUM
PS	34	All plastic goods, incl. building, packaging, tubing, moulding and extrusion, fibre glass and fibre glass resin and products, excluding the manufacture of Tar, Bitumen & Asphalt	MEDIUM
DK	35	Boat-building, wharf and quays, cargo/transport handling facilities - marine or inland	MEDIUM
FD	36	Major food processing includes large Dairies. Exceptionally large scale Corn/Flour milling	MEDIUM
AF	36	Manufacture of pet foods or animal foodstuffs	MEDIUM
AP	37	Air & space transport	MEDIUM
WD	39	Sawmills and manufacture of wood products (excluding treatment).	MEDIUM
FL	39	Areas 'Liable to Flood'-shown as point features central to flooding area	MEDIUM

			LOW
GV	40	Cemetery, modern burial grounds and grave yards	LOW
HP	41	Must be assoc. with relevant industry-incl. spoil & slag-use symbology and assoc. features to identify heap boundary (except for colliery spoil heap- <i>this is an EAS modification</i>)	LOW
DM	41	Demolition of building, plant or equipment used for any of the activities in the schedule	LOW
DG	41	Disturbed ground >200m in one dimension	LOW
AR	42	Air Shafts	LOW
CS	42	Coal mine shafts	LOW
WA	43	Drainage ditches are often identified by straight parallel lines creating a boundary line of a field or fields	LOW
WC	43	Canals are often identified by OS text (e.g. Leeds & Liverpool Canal)	LOW
WO	43	All other water features on the site incl. marshes, wells, springs, sluices, reservoirs, dams, cisterns etc.	LOW
WP	43	Surface ponds often located within a field surrounded by trees	LOW
WS	43	Surface streams are often identified by irregular parallel lines and an arrow to show directional flow of the stream	LOW
WV	43	Rivers are often identified by OS text (e.g. River Mersey)	LOW
ES	44	Electricity sub-station	LOW
LB	45	Various-technical & environmental testing & analysis	LOW
HL	46	All Hospitals including sanatoriums but not lunatic asylums	LOW
BW	47	Brewing and malting	LOW
DL	47	Spirit distilling & compounding	LOW
PP	48	Above ground pipelines other than sewerage	LOW
PT		Extraction of alluvial sediments (sand, clay, peat, marl and gravel) (not used as conflicts with QU QUARRY- <i>this is an EAS modification</i>)	*
RF		Refuse and waste disposal incl. Incinerators & sanitary depot (not uses as not sufficient detail- <i>this is an EAS modification</i>)	*

APPENDIX VI

Statutory and Non-Statutory Bodies

Table 5: Statutory and non-statutory consultees

Organisation	Contact
*Environment Agency (South Area)	South Area Contact
*Environment Agency (Central Area)	Central Area Contact
*Natural England	Ecologist (Merseyside)
*English Heritage	Land Use Planner
*Ministry of Agriculture Fisheries and Food	Policy Advisor (Contaminated Land)
*Food Standards Agency	Contaminants Division
Health & Safety Executive	Health and Safety Officer (Merseyside)
Railtrack	Environmental Manager
United Utilities	Project Manager (Contaminated Land)
British Gas	Director
Lattice Properties Holding Limited	Construction Manager
MANWEB Mersey Region	Safety and Environment Manager
British Telecom	Notice Handling Centre
St Helens & Knowsley Hospitals	Department of Estates Management
St Helens and Knowsley Health Authority	Director of Public Health
Prescot Parish Council	The Secretary
Halewood Town Council	The Secretary
Whiston Town Council	The Secretary
Knowsley Parish Council	The Secretary
Tarbock Parish Council	The Secretary
Cronton Parish Council	The Secretary
Cheshire County Council	County Planning Officer
Lancashire County Council	County Planning Officer
Sefton MBC Liverpool City Council St Helens MBC Wirral MBC Halton Borough Council West Lancashire District Council	Neighbouring Authorities Contaminated Land Officers
Merseyside Emergency Planning Unit	Manager
Merseyside Waste Disposal Authority	Acting Director and Treasurer
Mersey Waste Limited	Manager
The Coal Authority	Operations Manager
Defence Estates Organisation	Land Disposal Manager
Merseyside Chamber of Commerce	Building and Environment Committee
National House Building Council	Head of Engineering
British Waterways	Supervisor (Merseyside)
Groundwork Trust	Acting Strategic Manager (East)
Forestry Commission	Director
Mersey Forest	Director
NFU Mutual	Agency Office
Halewood SRB	Manager
Huyton SRB	Manager
Northwood SRB	Manager
Objective One Secretariat	Government Office for Merseyside
Knowsley Business Resource Centre	Head of Economic Development
Government Office Northwest	Director of Planning

The House Builders Federation	Director
National Museums and Galleries on Merseyside	Merseyside Archaeological Officer

Organisation	Contact
QVC	Director
Dams International Limited	Director
Delphi Delco Automatic Systems	Director
News International Papers Limited	Director
Contract Chemicals Limited	Director
TRW Aeronautical Systems	Director
Pirelli	Director
BICC Cables Ltd	Director
Ford Motor Company Ltd	Director
Ford/Jaguar Motor Company	Director
BASF Coatings and Inks	Director
First Choice Concrete	Director
NW Fencing and Concrete Products	Director
Orion Paints	Director
Sonae (UK) Ltd	Director
Kodak Ltd Chemical Manufacturing Division	Director
Stackright Building Systems	Director
Conix UK Limited	Director
Tarmac	Director
Tricolour Gibbon	Director
Balfour Beatty Construction Ltd	Director
Major Landowners	

*denotes Statutory Consultee

Note: The consultees listed above were consulted on the first version of the Inspection Strategy.

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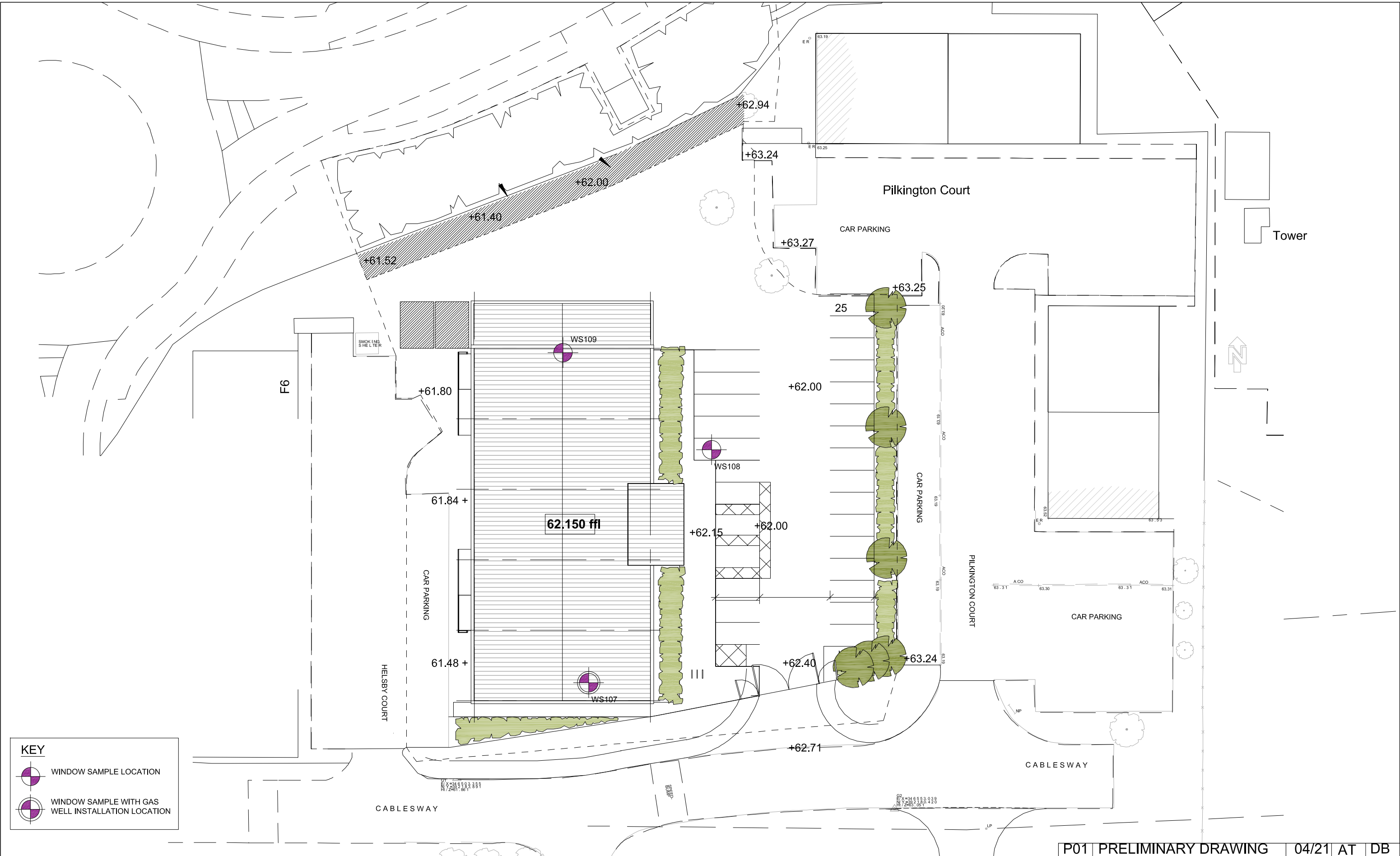
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