

HOLLY MOUNT FARM BURY

PHASE 2 GEO-ENVIRONMENTAL INVESTIGATION, RISK ASSESSMENT AND REMEDIATION STRATEGY

Job Number: LKC 22 1142

Date: 20th March 2023

Client: Keystone Projects (Hawkshaw) Ltd



INCREASING LAND VALUE

LK
GROUP

INCREASING LAND VALUE



LK
GROUP

LK Consult Document Verification			
Site Address	Holly Mount Farm, Hollymount Lane, Tottington, Bury, BL8 4HP.		
Report Title	Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy		
Job Number	LKC 22 1142	Document Ref.	LKC 22 1142-B1-GI
Date Issued	20 th March 2023	Report Version	R0
Prepared By	Rachel Wylie	Reviewed By	Dr Paul Quimby Rachel Peart

Revision Record			
Revision No.	Date	Nature of Revision	Approved By

DISCLAIMER

This report has been prepared by LK Consult (LKC) who have exercised such professional skill, care and diligence as may reasonably be expected of a properly qualified and competent consultant, experienced in preparing reports of a similar scope.

However, to the extent that the report is based or relies upon information contained in records, reports or other materials provided to LKC, which have not been independently produced or verified, LKC gives no warranty, representation or assurance as to the accuracy or completeness of such information.

This report is issued on the condition that LKC will not be held liable for any loss arising from ground conditions between sampling points (i.e. boreholes/trial pits/hand augers/surface samples) which have not been shown by the sampling points or related testing carried out during the investigation, nor for any loss arising from conditions below the maximum depth of the investigation. Opinions on such conditions, where given, are for general guidance only.

This report is prepared solely for the benefit of Keystone Projects (Hawkshaw) Ltd. It may not be relied upon by, or submitted to a third party for their reliance for the purposes of valuation, mortgage, insurance and regulatory approval, until all invoices have been settled in full.

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

EXECUTIVE SUMMARY

Site Details

Site Location:	Southwest of Hollymount Lane, located in Greenmount, Bury. Centred at approximate National Grid Reference 377280E 414000N.
Site Area:	5,500m ² .
Current Land Use:	Former farm with outbuildings in a predominantly hardstood area.
Proposed Development:	Planning Application No. 68505: redevelopment for 4no. new dwellings (3 new build, 1 barn conversion) with car ports and two storey extension at side of existing farmhouse; associated landscaping; access works.
Purpose of Report:	Contamination and Geotechnical Assessment.

Preliminary Risk Assessment

PRA Details:	Undertaken by LKC in April 2022. Ref: LKC 22 1142-01.
History:	Onsite: Farmstead, Field boundary, Electricity Pylon. Surrounding Area: Watercourses, Reservoir, Filter and sewage beds, Burial ground.
Geology / Hydrogeology:	Artificial: No BGS recorded artificial. Superficial: Secondary Undifferentiated Aquifer in the northwest in Till (Diamicton). Secondary A Aquifer in the southeast in River Terrace deposits (sand and gravel). Bedrock: Pennine Lower Coal Measures. Secondary A Aquifer.
Mining:	Within the Coal Reporting Area and not within a Development High Risk Area.
Relevant Environmental Setting:	No recorded landfills. Potentially infilled ground identified. Un-named Brook 85m SW. No surface water or groundwater abstractions within 100m. Not within Source Protection Zone.
Preliminary Conceptual Model: PL=Pollutant Linkage	PL1 Direct Contact (Human Health): Moderate Risk (asbestos, metals, PAHs, Petroleum Hydrocarbons, other inorganic and organic contaminants, pesticides). PL2 Inhalation of Vapours: Moderate Risk (volatile contaminants). PL3 Gas: Moderate Risk (hazardous and ground gas). PL4 Controlled waters: Moderate Risk (mobile contaminants). PL5 Water Pipelines: Moderate Risk (organic contaminants).
Recommendations:	Site Investigation was recommended to further assess all the above pollutant linkages.

Ground Investigation Work Undertaken

Date of Investigation:	14 th to 15 th February 2023.
Intrusive Investigation Work Undertaken:	5no. window sample boreholes (WS101-WS105). 7no. mechanically excavated trial pits (TP101-TP107).
Monitoring Wells:	Installed in WS101, WS103, WS104 and WS105.
Soil Sampling:	10no. samples tested for metals, speciated PAHs, pH, sulphate, asbestos and SOM. 1no. sample tested for metals, speciated PAHs, cyanide, pH, sulphate, asbestos, phenol, TPHCWG, BTEX, MTBE, VOCs, SVOCs and SOM. 1no. sample tested for metals, speciated PAHs, cyanide, pH, sulphate, asbestos, phenol, TPHCWG, BTEX, MTBE and SOM. 1no. sample tested for TPHCWG, BTEX, MTBE and SOM. 3no. samples tested for pesticides.
Groundwater Sampling:	3no samples tested for metals, speciated PAHs, cyanide, pH, sulphate, hardness, phenol, TPHCWG, BTEX and MTBE.
Monitoring:	1no. groundwater sampling visit.
Insitu Geotechnical Testing:	SPTs, pocket penetrometers, shear vanes.
Laboratory Geotechnical Testing:	5no. Atterberg Limits (plasticity). 3no. samples tested for BRE SD1 short suite.
Other Work:	3no. Soakaway Tests with trial pits.

Ground Conditions and Geotechnical Assessment

General Ground Conditions	Allowable Bearing Capacity (ABC)	Anticipated Foundation Type	Other Considerations
Made Ground (including ash) to between 0.50m and 2.70mbgl. Slight hydrocarbon odour noted in WS103 at 1.50 – 2.50mbgl. Natural strata comprised of predominantly cohesive superficial deposits of CLAY with horizons of SILT and GRAVEL to the completion depths investigated. Perched groundwater pockets encountered between 1.00m and 3.50mbgl	Undrained shear strength within natural cohesive strata of 39kPa at 1.50mbgl and a conservative 50kPa at 2.00mbgl, return an ABC of 67kN/m² and 86kN/m² respectively for strip foundations and a Factor of Safety of 3.	Given the depths of Made Ground and variable strengths of the shallow cohesive deposits, strip foundations would need to be founded upon a uniform stratum and as that is unlikely to be achieved, consideration should be given to either a ground improvement or raft solution.	Consideration of effects of trees also needs to be considered. Temporary supports of excavations will be required. Detailed design should be carried out by structural engineer. Concrete Requirements DS1-AC-1 across most of the site. DC2-AC2 at the location of TP106. Permeability tests of the shallow soils all failed and it is considered that soakaways are not likely to be suitable on site.

Contamination Risk Assessment

The table below shows a summary of the risk assessments undertaken for each pollutant linkage, the revised conceptual model and recommendation for either remediation and / or further investigation.

Pollutant Linkage		Risk	Recommendations
1	Contaminants posing a risk to site users via dermal contact, ingestion and inhalation (of soil, dust, fibres and home-grown produce).	Moderate	- Moderate risk as elevated metals (lead) identified in the made ground across the site which could come into contact with site users in gardens / soft landscaping areas. - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
		Moderate (Localised)	- Localised moderate risk for ACM (amosite) identified in 1no. location, in the southeast of site, where deeper fill material (including potential demolition rubble was present). - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
		Low	- No elevated levels of hydrocarbons identified. No pesticides detected during investigation. Low risk assumed. - Recommendation: No remediation required
2	Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	- No elevated concentrations identified across the site. Highest PID reading=0.3ppm. Low risk assumed. - Recommendation: No remediation required.
3	Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate	- No gas monitoring undertaken as part of the investigation. Based on variable depth of made ground (0.5-2.7mbgl), risk from hazardous gas is considered possible, but not significant. Moderate risk assumed. - Recommendation: In lieu of no gas monitoring precautionary gas protection measures in line with CS2 / Amber 1 recommended.
		Low	- <1% homes of homes above action level. - Recommendation: No remediation required.
4	Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Low	- No elevated contaminants (metals, PAHs and hydrocarbons) identified in ground water samples. Low risk assumed. - Recommendation: No remediation required.
5	Organic contaminants posing a risk to water pipes.	Low	- No elevated contaminants (organic) identified. Low risk assumed. - Recommendation: UU risk assessment to be undertaken. As a precaution barrier piping may be required subject to further assessment.

Material onsite (from samples tested) can be classified as NON-HAZARDOUS WASTE

Recommendations and Remedial Strategy

The table below shows the remediation and validation requirements for the site. This information should be documented in a Site Completion Report for submission to the Local Authority.

PL	Remediation Requirements	Validation Requirements
ALL	<u>Watching Brief during Earthworks Inspections / post demolition / Unexpected Contamination</u> The relevant contractors should be briefed that during development works at the site should any unusual ground conditions and / or visual or olfactory evidence of contamination (including asbestos containing material) be encountered at the site, LKC and the Local Authority should be informed, and further assessment of the material may be required. LKC recommend that a consultant be present during the removal of any slabs (post demolition). This is recommended to confirm ground conditions below the current buildings	Log of work undertaken including photographs. Details of any sampling undertaken and validation of any potential additional remedial work.
1	<u>Environmental Cover System</u> <i>Where shallow made ground is present it may be removed to natural strata and no depth specific environmental cover system will be required.</i> Where made ground remains an environmental cover system is recommended across the site. The environmental cover system should be as follows: Private Back Gardens: 600mm thick environmental cover system comprising: Either 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 500mm comprising clean inert fill and sufficient topsoil for a growing medium. Or geotextile membrane and at least 600mm comprising clean inert fill and sufficient topsoil for a growing medium. Private Front Garden / Shared Landscaping: 450mm thick environmental cover system comprising: Either 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 350mm comprising clean inert fill and sufficient topsoil for a growing medium. Or geotextile membrane and at least 450mm comprising clean inert fill and sufficient topsoil for a growing medium. The subsoil layer can be replaced by additional topsoil. A diagram of a typical environmental cover system is shown in Appendix I.	Measuring depth of environmental cover system using a staff and providing photographic evidence. Photographic evidence of the granular physical break or geotextile layer will also be collected. Chemical validation of imported soils: See Table 9-2.
3	<u>Gas Protection Measures (Precautionary)</u> In line with CS2 / Amber 1 as per UK guidance This is likely to / should include: • Passive subfloor or active subfloor ventilation system. • Methane and carbon dioxide resistant membrane installed as per manufacturer's instructions. • Ventilation of confined spaces within the building. • Well-constructed reinforced suspended, raft or cast in situ ground slab. • Minimum penetration of ground slab by services. • All joints and penetrations to be sealed. Depending on the type of building and foundation design the protection measures can vary. The gas	Supply and review of foundation designs. Photographic evidence of sub-floor void, ventilation and suitably sealed gas membrane. Validation of gas protection measures should be in line with CIRIA 735.

	protection measures will be detailed and approved with the Local Authority once the foundation design has been confirmed.	
5	Potable Water Pipes It is recommended that a Water Pipeline Assessment is undertaken once the location and depth of potable water pipes are known.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.
<u>Grubbing Out of In-Ground Structures</u> It is recommended that in-ground structures are grubbed out as part of the groundworks.		
<u>Re-use of site won material</u> To ensure material is compliant with appropriate waste regulations, any site won material re-used onsite should be in recourse to appropriate exemptions. A U1 and T5 exemption should be registered. This will allow the following to be used onsite or brought in for use onsite (refer to guidance for types of waste that can be used): 5,000 tonnes (c. 2,500m³) <u>treatment</u> of crushed concrete / stone. 1,000 tonnes (c. 500m³) <u>use of</u> non-hazardous soil. 5,000 tonnes (c. 2,500m³) <u>use of</u> clays, sand, gravel, brick, concrete, stone etc. 50,000 tonnes (c. 25,000m³) <u>use of</u> bituminous material to be used in roadways. A Materials Management Plan (MMP) with recourse to the CL:AIRE Code of Practice may be required if volumes exceed exemption limits. This must be registered before material movement starts onsite. If an MMP is required, this needs to be registered by a Qualified Person (QP) and there must be 'certainty of use' for any material re-used onsite or exported to site to ensure there is no 'sham recovery'. For all the above material will need to be tested at the rate and analytical suites presented in Table 9-2.		
<u>Asbestos Management Plan</u> Due to the presence of asbestos containing material, it is recommended that additional precautions are taken during site clearance, earthworks and construction in the area of concern. The presence of asbestos in the made ground at the site presents a potential risk of generation of airborne fibres if this material is disturbed, such as for excavations to construct new foundations. This risk can be managed by careful procedures and site monitoring to reduce the risk of airborne fibres, and it is recommended that an appropriate 'Asbestos Management Strategy' is developed and adopted for all intrusive ground works which disturb the made ground in the area of concern. This should be carried out in line with CIRIA C733. This may include asbestos awareness training for all site staff, provision of suitable personal and respiratory protective equipment and air monitoring. With regards to cement bound asbestos, this can be handpicked, doubled bagged and disposed of appropriately to a licenced landfill. Guidance on removing asbestos cement is described in HSE (2012). If ACM is identified in soil arisings then soil should be placed directly into covered skips and disposed of at a suitable licenced landfill, after further testing to quantify the extent of asbestos contamination of the soils. It should be considered that blue asbestos is notifiable and must be removed by a licenced contractor.		
<u>Health and Safety Considerations</u> In working with, removing or treating any contaminating material it is important that any potential risks associated with the actual site works are mitigated by good environmental management of the site during the remedial phases. Standard health and safety precautions (as per HSE guidance) should be adopted by all workers involved with site enabling and construction works.		
<u>Asbestos Survey</u> A Pre-Demolition and Major Refurbishment Asbestos Survey should be undertaken, and any ACMs removed and properly disposed of, prior to the demolition of the existing buildings, by a suitably qualified professional.		

As asbestos has been identified within the soils on site, it is also recommended that an Asbestos Management Plan is adopted during construction work.

The remediation recommended in the table above should be validated to ensure it has been carried out appropriately. This should be documented in a Completion / Validation Report and submitted to the Local Authority for completion.

CONTENTS

EXECUTIVE SUMMARY	iv
1 Introduction	1
1.1 Background	1
1.2 Site Details	1
2 Review of Previous Work.....	2
2.1 Phase 1 Preliminary Risk Assessment (PRA).....	2
3 Ground Investigation	4
3.1 Site Investigation Design and Methodology	4
Well Installations	4
3.2 Sampling Protocol	4
3.3 Gas Monitoring.....	6
3.4 Site Investigation Scope.....	7
3.5 Geotechnical Testing.....	7
3.6 Soakaway Tests.....	7
4 Ground Conditions.....	9
4.1 Geology – Generalised Sequence.....	9
4.2 Groundwater	10
4.3 In-Situ Geotechnical Testing	11
4.4 Geotechnical Laboratory Testing.....	12
5 Geotechnical Assessment.....	14
5.1 Proposed Development.....	14
5.2 Summary of Ground Conditions	14
5.3 Site Preparation	14
5.4 Foundation Conditions and Bearing Capacity.....	15
5.5 Recommendation	17
5.6 Ground Floor Slabs	17
5.7 Pavement Construction	18
5.8 Drainage	18
5.9 Concrete Durability.....	18
5.10 Excavations.....	18
5.11 Construction Activity and Inspection.....	19
6 Generic Risk Assessment	20
6.1 Introduction	20
6.2 Soil Risk Assessment.....	20

6.3	Gas Risk Assessment	24
6.4	Controlled Water Assessment	24
6.5	Additional Risk Assessments	25
6.6	Revised Contamination Conceptual Model	25
7	Waste Disposal Assessment	27
8	Conclusions	28
8.1	Geotechnical	28
8.2	Contamination Assessment	29
9	Recommendations and Remedial Strategy	30
9.1	Remediation and Validation Recommendations	30
9.2	Validation of Subsoil / Topsoil	32
9.3	Site Completion Report	33

FIGURES

Figure 1:	Site Location and Boundary Plan
Figure 2:	Proposed Development Plan
Figure 3:	Site Investigation Location Plan

APPENDICES

Appendix A:	Risk Matrix
Appendix B:	Profile Logs
Appendix C:	Certificate of Analysis – Soil
Appendix D:	Certificate of Analysis – Groundwater
Appendix E:	Certificate of Analysis – Geotechnical
Appendix F:	Soakaway Test Results
Appendix G:	Generic Assessment Criteria Values
Appendix H:	HazWaste Online Sheets
Appendix I:	Environmental Cover System

1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by Keystone Projects (Hawkshaw) Ltd to carry out a Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy for Holly Mount Farm, Bury. The investigation was undertaken in support of a planning application (reference number 68505) to develop the site for residential use.

The following work has previously been undertaken:

- » Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: LKC 22 1142, dated 8th April 2022).

This investigation has been undertaken to confirm the ground conditions below the site and to allow a contamination and geotechnical assessment to be undertaken.

The investigation will aim to confirm the risks of the potential pollutant linkages identified in the PRA and recommend further assessment / remediation, as required.

1.2 Site Details

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

Site Location	Southwest of Hollymount Lane, located in Greenmount, Bury. Centred at approximate National Grid Reference 377280E 414000N.
Approximate Area	5,500m ² .
Topography	140 metres Above Ordnance Datum (AOD). Site slopes towards to the southwest.
Current Site Use	Former farm with outbuildings in a predominantly hardstood area.
Purpose of Report	Planning.
Planning Ref.	68505.
Proposed Development	Redevelopment for 4no. new dwellings (3 new build, 1 barn conversion) with car ports and two storey extension at side of existing farmhouse; associated landscaping; access works.

Table 1-1: Summary of site details.

2 Review of Previous Work

2.1 Phase 1 Preliminary Risk Assessment (PRA)

A PRA report (Ref: LKC 22 1142, dated 18th April 2022) has previously been undertaken by LKC.

Table 2-1 summarises the site details, historical review, environmental settings and site reconnaissance.

Main Historical Features	Onsite: Farmstead, Field boundary, Electricity Pylon. Surrounding Area: Watercourses, Reservoir, Filter and sewage beds, Burial ground.
Geology / Hydrogeology	Artificial: No BGS recorded artificial. Superficial: Secondary Undifferentiated Aquifer in the northwest in Till (diamicton). Secondary A Aquifer in the southeast in River Terrace deposits (sand and gravel). Bedrock: Pennine Lower Coal Measures. Secondary A Aquifer.
Landfills / Infilled Ground	No recorded landfills. Potentially infilled ground identified.
Site Walkover	Residential land use with several barns and farm buildings present on site. Site slopes to the southwest with a groundcover of mostly hard stood but some grassed areas present. Temporary oil tank on site and empty IBC also noted in the east. No evidence of staining and noted to be on concrete. The risk was considered low. Services present on site. Access possible in most areas with drilling rig and excavator.

Table 2-1: Summary of site details, historical review, environmental settings and site reconnaissance.

The Preliminary Contamination Conceptual Site Model (PCCSM) produced in the PRA is provided in Table 2-2.

Each pollutant linkage is described along with an assessment of the risk based upon guidance on probabilities and consequences outlined in CIRIA C552¹. The risk matrix is provided in Appendix A.

Due to the minor consequence associated with the phytotoxic effect to flora (i.e. loss of plants in a landscaping scheme), the overall risk for the majority of sites will be very low to low. Where soils contain significant concentrations of heavy metals, in general there will other pollutant linkages (i.e. the risk to human health) that will trigger the requirement for remediation (e.g. a clean environmental cover system). As such the risk to flora associated with phytotoxic contaminants will not be considered further.

The risk to buildings associated with elevated sulphate will be considered as part of the geotechnical assessment and will not be included in the contamination risk assessment.

¹ CIRIA (2001). "Contaminated Land Risk Assessment: A Guide to Good Practice". C552.

PL	Pathway	Receptor	Contaminants of Concern (CoC)	Probability	Consequence	Risk	Recommendations
1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust, vegetables, soil attached to vegetables. - Windblown dust.	- Future site users. - Offsite receptors.	- ACM. - Heavy metals. - PAHs (including coal tar). - Petroleum hydrocarbons. - Other inorganic and organic contaminants. - Pesticides.	Low Likelihood (given site history, site conditions and proposed end use)	Medium	Moderate / Low (moderate assumed until ground conditions confirmed)	Intrusive investigation required. Soil analysis of CoC.
2	- Inhalation of vapours. - Migration via permeable strata and preferential pathways.	- Future site users. - Offsite receptors.	- Volatile contaminants (TPHCWG), coal tar.	Low Likelihood (given site history, site conditions and proposed end use)	Medium	Moderate / Low (low risk assumed given anticipated ground conditions)	Intrusive investigation required, to include PID testing. Soil analysis of CoC, subject to ground conditions encountered and PID testing.
3	- Inhalation of gas. - Migration via permeable strata and preferential pathways. - Explosion in confined spaces. - Exposure to radon.	- Future site users. - Buildings. - Offsite land users.	- Ground / hazardous gas (carbon dioxide, methane).	Unlikely (given limited gas source and unknown pathway)	Severe	Moderate / Low (moderate assumed until ground conditions confirmed)	Intrusive investigation to confirm ground conditions. If significant gas source and pathway identified, gas monitoring or gas protection measures required.
			- Radon	Unlikely (<1% homes above action level)	Medium	Low	No further assessment required.
4	- Surface run-off. - Migration via permeable strata and preferential pathways. - Perched waters migration.	- Groundwater (Secondary Undifferentiated and Secondary A Superficial Aquifers. Secondary A Bedrock Aquifer). - Surface water (Unnamed brook).	- Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds.	Low Likelihood (only minimal mobile contamination anticipated with limited pathway)	Medium	Moderate / Low (moderate assumed until ground conditions confirmed)	Low density intrusive investigation required. Groundwater sampling, subject to ground conditions encountered. Analysis of CoC. Surface water sampling if elevated CoCs identified in groundwater.
5	- Ingestion of tainted water supply.	- Future site users. - Water pipes.	- Organic contaminants such as petroleum hydrocarbons.	Low Likelihood (given site history, site conditions and made ground not expected at pipeline depth)	Medium	Moderate / Low (low risk assumed given anticipated limited made ground and contamination)	Low density intrusive investigation required. Soil analysis of CoC, subject to ground conditions encountered.

Table 2-2: Preliminary Contamination Conceptual Site Model.

3 Ground Investigation

3.1 Site Investigation Design and Methodology

In order to assess the ground conditions at the site and to investigate the potential pollutant linkages identified in the preliminary contamination conceptual model an intrusive investigation was undertaken.

The investigation was carried out on 14th to 15th February 2023 and comprised the following:

- » 5no. window sample boreholes drilled to 3.45-5.45 metres below ground level (mbgl) (ref. WS101 to WS105).
- » 7no. trial pits (using 6T tracked machine) excavated to 1.80-3.10mbgl (ref. TP101 to TP107).
- » 3no. soakaways carried out within trial pits (ref. TP101 to TP103).

All site investigation locations are shown in Figure 3.

The locations were chosen to allow good coverage across the site.

Farm buildings were still present on site, and sampling could not be undertaken within these locations. Therefore, further assessment may be required in these areas at a post demolition stage.

The targeted investigation locations as well as the non-targeted investigation locations allow a good spread across the site. The number of sampling points corresponds to one location per circa 20m square centres. This is considered appropriate given the size of the site, the historical land use and the relatively homogeneous ground conditions encountered.

All profile logs are provided in Appendix B and are in line with BS14688-1² and BS5930³.

Well Installations

4no. (WS101, WS103- WS105) of the boreholes were installed with monitoring wells for groundwater monitoring and groundwater sampling. Monitoring wells were installed in accordance with BS10175 and CIRIA C665⁴ and generally comprised approximately 1m plain pipe over a length of slotted pipe surrounded by pea gravel and sealed at the top with bentonite and concrete.

Well installation details are provided in Profile Logs in Appendix B.

3.2 Sampling Protocol

3.2.1 Soil Sampling (Contamination)

Standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation⁵.

² British Standards (2002) Geotechnical investigation and testing – Identification and Classification of Soil. Part 1: Identification and description. BS EN ISO 14688-1:2002.

³ British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.

⁴ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

⁵ EA (2000). "Technical Aspects of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.

Soil was collected for onsite testing. A plastic zip bag was half filled with soil allowing a suitably sized headspace. The bag was sealed and stored for at least 20 minutes before being tested for total volatile organic compounds (TVOCs) using a Mini Rae Lite+ photoionisation detector (PID). Results of the PID readings are presented on the profile logs (Appendix B). The on-site monitoring was carried out in line CIRIA C665⁶ to aid in screening samples for volatile analysis.

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

Many of the contamination tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix C. Table 3-2 shows the soil testing undertaken.

Suites and Contaminants	No. Samples	Location & Depth (m)	Justification
Metals / metalloids, pH, water soluble sulphate, speciated PAHs, SOM and asbestos screen.	10	WS101 0.00-0.60 WS102 0.00-1.00 WS104 0.30-0.80 WS105 0.00-0.60 TP101 0.00-1.00 TP103 0.00-0.50 TP104 0.00-0.50 TP105 0.40-2.40 TP107 0.00-1.30	A basic suite with a broad selection of contaminants tested on samples across the site where no significant evidence of contamination was identified (with the exception of occasional ash, brick, and concrete) and no TVOCs identified from the PID tests.
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, BTEX, MTBE, speciated PAHs, SOM and asbestos screen.	1	WS103 1.50-2.00	Evidence of possible hydrocarbon contamination (visual / olfactory) identified in WS103 1.50-2.00m therefore detailed suite undertaken to confirm contamination risk and extent.
TPHCWG, BTEX, MTBE and SOM.	1	WS103 2.00-2.60	WS103 2.00-2.60m tested to confirm the extent of possible hydrocarbon contamination observed in strata above.
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, BTEX, MTBE, speciated PAHs, VOCs, SVOCs, SOM and asbestos screen.	1	TP106 0.00-1.70	Although no evidence of VOC/SVOCs, a more detailed suite including volatile contaminants included to confirm the absence of contamination and to aid in any potential future waste disposal assessment.
Pesticides	3	WS101 1.65-2.00 WS102 1.00-1.50 TP102 0.00-0.70	Tested for pesticides due historical use of site (farm). Possible evidence of relic topsoil identified.

Table 3-2: Summary of soil sample testing undertaken.

Notes: If asbestos present during screen identification and quantification will be undertaken.

Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, BTEX=benzene, toluene, ethylbenzene and xylenes; MTBE=Methyl tert-butyl ether, VOC=Volatile organic Compounds, SVOC= Semi Volatile Organic Compounds, SOM=Soil Organic Matter.

⁶ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

3.2.2 Water Sampling and Testing

To establish the condition of shallow groundwater LKC undertook three groundwater samples.

The groundwater samples were collected a minimum of 1 week after drilling had finished and following well development. Sample collection was undertaken using a low flow sampling pump using thin walled tubing to encourage laminar flow and minimise the potential loss of volatiles during sampling. The borehole was purged of all standing water and the sample collected from the recharged water. The sample was collected in glass and plastic bottles and a glass vial. A water meter was used to test the pH, temperature and conductivity before sampling until equilibrium conditions were met, as per BS10175⁷ guidelines.

Due to insufficient water in borehole WS105 a groundwater sample could not be obtained.

All water samples were placed in glass bottles, plastic bottles and septum topped vials and stored in ice packed cool boxes. The samples were sent to DETS on the same day for analysis. The sampling suite is presented in Table 3-3.

Sampling was carried out in accordance with BS5930⁸ and BS5667-11⁹.

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

Suites and Contaminants	No. Samples	Location	Justification
Metals / metalloids, pH, sulphate, cyanide suite, TPHCWG, BTEX, MTBE, speciated PAHs, phenol and hardness.	3	WS101 WS103 WS104	Detailed suite undertaken to assess if contamination was present.

Table 3-3: Summary of groundwater sampling tests undertaken.

Notes:

Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons; BTEX=benzene, toluene, ethylbenzene and xylenes; MTBE=Methyl tert-butyl ether.

3.3 Gas Monitoring

Gas monitoring was not carried out as part of this investigation.

Although a moderate / low risk was identified in the preliminary contamination conceptual model for gas (pollutant linkage 3), precautionary gas protection measures are proposed to be installed in the building. This is discussed further in Sections 6.3 and 9.1.

⁷ British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice." BS10175:2017.

⁸ British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.

⁹ British Standard (2009). "Water Quality – Sampling. Part 11: Guidance on Sampling of Groundwaters". BS ISO 5667-11:2009.

3.4 Site Investigation Scope

The scope of the contaminated land investigation was agreed with the Local Authority prior to undertaking the work (email from Judith Scott, dated 14th February 2023). This investigation was in line with the scope however locations had to be altered slightly due to the presence of underground services.

LKC do not consider the changes to be significant and sufficient investigation work has been undertaken to investigate the site.

3.5 Geotechnical Testing

3.5.1 In-situ Onsite Geotechnical Testing

In-situ geotechnical tests were performed in the boreholes to further characterise the sub-soil conditions. The following tests were undertaken:

- » Standard Penetration Tests (SPTs) were performed in the window sample boreholes at approximately 1m intervals, generally within the natural strata.
- » Shear Vane and Pocket Penetrometer tests (giving undrained shear strength) were performed in the window sample boreholes (to a maximum depth of 3mbgl) and trial pits at approximately 1m intervals, within the natural clay strata.

Shear vanes tests were not always possible due to the gravel rich nature of some of the clay deposits.

The SPT/ shear vane and pocket penetrometer readings are provided within the profile logs (Appendix B).

3.5.2 Laboratory Geotechnical Testing

Soil samples taken during the investigation were collected in tubs and bulk bags and sent to Murray Rix Laboratories and DETS for geotechnical testing.

Many of the tests are UKAS accredited and further details are given in the laboratory report presented in Appendix D and E. Table 3-4 shows the geotechnical testing undertaken.

Suites and Contaminants	No. Samples	Location and Depth (m)	Justification
BRE SD1 Short Suite	3	WS102 1.00-1.50 TP103 0.50-1.50 TP104 0.50-1.40	Additional samples of natural ground taken across the site to assess the pH and sulphate for geotechnical purposes. pH and water-soluble sulphate are also included in Suites 1, 2 and 5 (Appendix C).
Atterberg Limits (plasticity testing)	5	WS101 3.00-3.45 WS104 1.50-2.00 WS105 2.00-2.50 TP103 0.50-1.00 TP105 1.40-2.40	A selection of clay samples across the site were tested for Atterberg Limits to assess their shrinkability potential associated with current and proposed trees.

Table 3-4: Summary of geotechnical testing undertaken.

3.6 Soakaway Tests

Soakaway tests were undertaken in TP101-TP103 in accordance with BRE Digest 365¹⁰.

¹⁰ BRE (2003) 'Soakaway Design' British Research Establishment BRE Digest 365 2003

The trial pits were machine excavated to dimensions of 0.6m wide, 2.0m long and 1.8-2.0 depth. The arisings were logged in accordance with BS14688-1¹¹ and BS5930.

A slotted standpipe was placed vertically in the pit and gravel was backfilled into the bottom of the pit to prevent the sides falling in during water influx.

The pits were filled from a water bowser and the drop in level timed and recorded using a dip meter inside the temporary standpipe.

Results are presented in Appendix F.

¹¹ British Standards (2002). Geotechnical investigation and testing – Identification and Classification of Soil. Part 1: Identification and description. BS EN ISO 14688-1:2002.

4 Ground Conditions

4.1 Geology – Generalised Sequence

The ground conditions beneath the site comprised made ground underlain by natural sandy silty GRAVEL and gravelly sandy silty CLAY. A summary section of the logs is provided in Plate 4-1, with additional comments below.

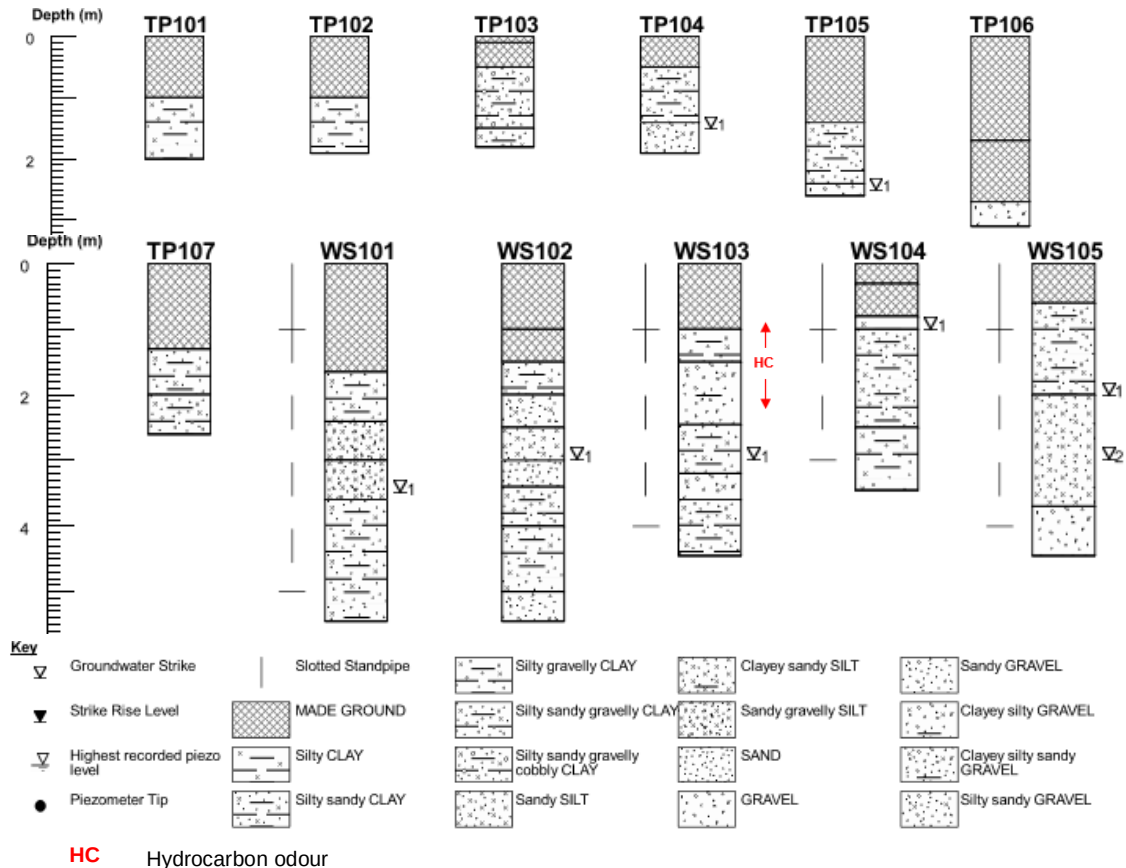


Plate 4-1: Summary of ground conditions.

Additional information on ground conditions:

Made Ground

Made ground was recorded in all locations to depths of 0.50 - 2.70mbgl. The Made Ground comprised horizons of gravelly SILT, sandy silty GRAVEL with anthropogenic material including concrete, ash, pottery, metal, timber, brick, parts of brick walls and glass. Exceptions were noted in:

- Reworked clay in TP106 1.70 - 2.70mbgl.
- Relic topsoil in WS102 1.00 - 1.50mbgl.
- Reworked topsoil in WS105 0.00 - 0.60mbgl.

Natural Strata

Natural strata comprised horizons of soft to stiff CLAY, interbedded with horizons of loose to dense, becoming dense with depth, variably sandy GRAVEL. A horizon of

medium dense SAND was encountered from 3.00mbgl within WS102. A horizon of sandy SILT was encountered from 2.00mbgl within WS105.

Contamination

Visual / olfactory evidence of hydrocarbons were identified as follows:

» WS103 1.50 - 2.00m: slight diesel odour.

The PID recorded a maximum of 0.3ppm TVOC in the samples.

4.2 Groundwater

4.2.1 Groundwater Levels

Groundwater strikes were recorded during the investigation in trial pits and boreholes. In addition, groundwater monitoring within the borehole wells has been undertaken on one occasion. An oil-water interface probe (approximately 10mm detection limit) was used to detect the presence of free phase hydrocarbons within each borehole.

Results are summarised in Table 4-1.

BH/TP	Water Strike Depths (mbgl)	Well Response Zone (mbgl)	Groundwater Depth	Base of Well	Sample Taken?	Evidence of Contam?
WS101	3.50	1.0-5.0 (MG/G/C/Si)	1.17	4.30	Yes	No
WS102	3.00	-	-	-	No	No
WS103	3.00	1.0-4.0 (C/G)	2.05	3.12	Yes	Yes ¹
WS104	Dry	1.0-3.0 (C)	0.47	2.95	Yes	No
WS105	2.00, 3.00	1.0-4.0 (C/Si/G)	Dry	3.98	No	No
TP101	Dry	-	-	-	No	No
TP102	Dry	-	-	-	No	No
TP103	Dry	-	-	-	No	No
TP104	1.50	-	-	-	No	No
TP105	2.50	-	-	-	No	No
TP106	Dry	-	-	-	No	No
TP107	Dry	-	-	-	No	No

Table 4-1: Summary of water strike depths within boreholes and trial pits.

Response Zones:

MG=Made Ground; Si=Silt and Gravel; S=Sand; C=Clay.

Notes:

¹ Very faint hydrocarbon odour noted during visit.

4.2.2 Soakaway Tests

Soakaway tests were also carried out within clay strata. The results of the soakaways are presented in Appendix F and summarised in Table 4-2.

BRE365¹² indicates that the calculation of the soil infiltration rate is made from the time taken for the water level to fall from 75% to 25% effective storage depth in each pit.

¹² BRE (2003) 'Soakaway Design' British Research Establishment BRE Digest 365 2003

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where:

V_{p75-25} = the effective storage volume of water in the trial pit between 75% and 25% effective depth.

a_{p50} = the internal surface area of the trial pit up to 50% effective depth including the base area.

t_{p75-25} = the time for the water level to fall from 75% to 25% effective depth.

Due to the slow rate at which water drained, three tests were not carried out and tests were terminated before the required effective depth.

TP	Test No.	Strata at Test Level	Time for outflow between 75% and 25% (mins)	Soil infiltration rate (m/s)
TP101	1	Clay	Not reached	Test Failed
TP102	1	Clay	Not reached	Test Failed
TP103	1	Clay	Not reached	Test Failed

Table 4-2: Summary of soakaway tests and permeability.

Based on the results of the soakaway tests, the clay has low permeability and low potential for infiltration.

4.3 In-Situ Geotechnical Testing

4.3.1 Standard Penetration Tests

In-situ standard penetration tests (SPTs) were undertaken, predominantly in the natural ground. The results are summarised in Table 4-3 and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	SPT 'N' Values				
	WS101	WS102	WS103	WS104	WS105
1-2	2 (C)	8 (MG/C)	3 (C)	2 (C)	12 (C)
2-3	4 (C/G)	14 (G)	4 (G)	16 (C)	14 (Si)
3-4	11 (Si)	19 (S/C)	0 (C)	50 (C)	26 (Si)
4-5	14 (C)	12 (C)	50 (C)	-	50 (G)
5-6	14 (C)	50 (G)	-	-	-
GW Level	3.50	3.00	3.00	1.00	2.00

Table 4-3: Summary of SPT (N) values.

Notes:

G=Gravel; S=Sand; C=Clay; Si=Silt.

Groundwater level based on strikes during investigation.

4.3.2 Shear Vanes and Pocket Penetrometer Tests

Hand shear vane readings and pocket penetrometer readings, recording undrained shear strength (s_u), were taken within the clay strata. The results are summarised in Table 4-4 and Table 4-5 below and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m ²)						
	TP101	TP102	TP103	TP104	TP105*	TP106*	TP107
0-1	-	-	-	-	-	-	-
1-2	41.50	38.00	34.00	46.00	-	-	40.00
2-3	-	-	-	-	-	-	61.50
GW Level	-	-	-	1.50	2.50	-	-

Table 4-4: Summary of average hand shear vane readings.

Notes:

Groundwater level based on strikes during investigation.

Shear vane readings can be influenced by coarse material including silt.

*Clay strata noted in these trial pits to be too soft for shear vane tests.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m ²)				
	WS101	WS102	WS103	WS104	WS105
0-1	-	-	-	-	49.05
1-2	36.70	24.00	-	-	42.90
2-3	-	-	67.40	55.59	-
3-4	65.40	-	-	-	-
GW Level	3.50	3.00	3.00	1.00	2.00

Table 4-5: Summary of average pocket penetrometer readings.

Notes:

Groundwater level based on strikes during investigation.

Pocket penetrometer readings can be influenced by coarse material including silt.

4.4 Geotechnical Laboratory Testing

4.4.1 Atterberg Limits

Representative samples of natural clay were subjected to Atterberg Limits (plasticity) and Moisture Content testing. Results are presented in Appendix E and summarised in Table 4-6.

Table 4-6 also includes the modified plasticity index as detailed in Chapter 4.2-D5 of the NHBC standards (modified plasticity index = plasticity index x % less than 425µm sieve / 100%).

Location	Depth (mbgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Class	Passing 425 micron (%)	Modified Plasticity Index (%)
WS101	3.00	12.5	31	12	19	CL	51	9.69
WS104	1.50-2.00	22.8	39	16	23	CM	90	20.70
WS105	2.00-2.50	24.9	35	14	21	CL/CM	90	18.90
TP103	1.50-1.50	20.7	35	13	22	CL/CM	95	20.90
TP105	1.40-2.40	12.2	33	13	20	CL	60	12.00

Table 4-6: Summary of plasticity index testing.

Notes:

CL = Clay of Low Plasticity, CM = Clay of Medium Plasticity.

The modified plasticity index is between 9.69% and 20.90%. This characterises the clay as having a low to medium volume change potential.

4.4.2 Sulphate and pH

Water soluble sulphate and pH tests were carried out on soil and groundwater samples. Full results are presented in Appendix C (soils) and Appendix D (groundwater) and summarised in Table 4-7.

Strata	pH		Sulphate	
	Soil	Groundwater	Soil (mg/l)	Groundwater (mg/l)
Made Ground	5.8 to 8.2	6.6 to 7.9	<10 to 1430	2 to 95
Natural	6.8 to 8.8		11 to 42	

Table 4-7: Summary of pH and sulphate results.

5 Geotechnical Assessment

5.1 Proposed Development

It is understood that the proposed development will comprise 4 new low rise dwellings (3 new builds and 1 barn conversion) and a two storey extension to the side of the existing farmhouse, with associated landscaping and infrastructure. Details of the proposed loadings are not known and therefore a line loading of 75kN/m has been assumed for preliminary assessment purposes only.

The finished ground levels have not been provided and it is therefore anticipated that they will not vary significantly from current levels. However, should the development proposals or finished levels be altered then the comments/recommendations in this section may require revising.

The depths of any underground engineering works (sewers etc.) are unknown and therefore have not been taken into account in the following assessment. It is considered that any such works will be designed so as not to have an effect on, or compromise, proposed or existing foundations or ground stability.

Given the nature of the proposed development it is considered that the structure meets the criteria of Geotechnical Category 1 of Euro Code 7.

Given the nature of the development it is considered that acceptable risk from settlement is a total settlement value of 25mm for a masonry structure.

5.2 Summary of Ground Conditions

Ground conditions identified at the site are detailed in Section 4.1, and typically comprises Made Ground between 0.50m and 2.70mbgl over natural predominantly cohesive superficial deposits of CLAY with horizons of SILT and GRAVEL to the completion depths investigated.

5.3 Site Preparation

The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the Specification for Highway Works. This should include:

- » Roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting void infilled with suitable compacted engineered fill;
- » Redundant services should be sealed off and grubbed out and replaced with suitable compacted engineered fill; and,
- » Buried structures and old foundations should be anticipated to be present on site. Where encountered these should be excavated from below the proposed development foot print with the resulting void backfilled.
- » The near surface soils may potentially be disturbed by weathering and site traffic. Precautions should be taken to avoid this, as excessive disturbance may result in more onerous floor slab design, road cap thickness and increased amount of site disposal etc. Based on site observations the near surface soils may require at least some treatment or reinforcing to allow safe movement of construction plant and labour.

5.4 Foundation Conditions and Bearing Capacity

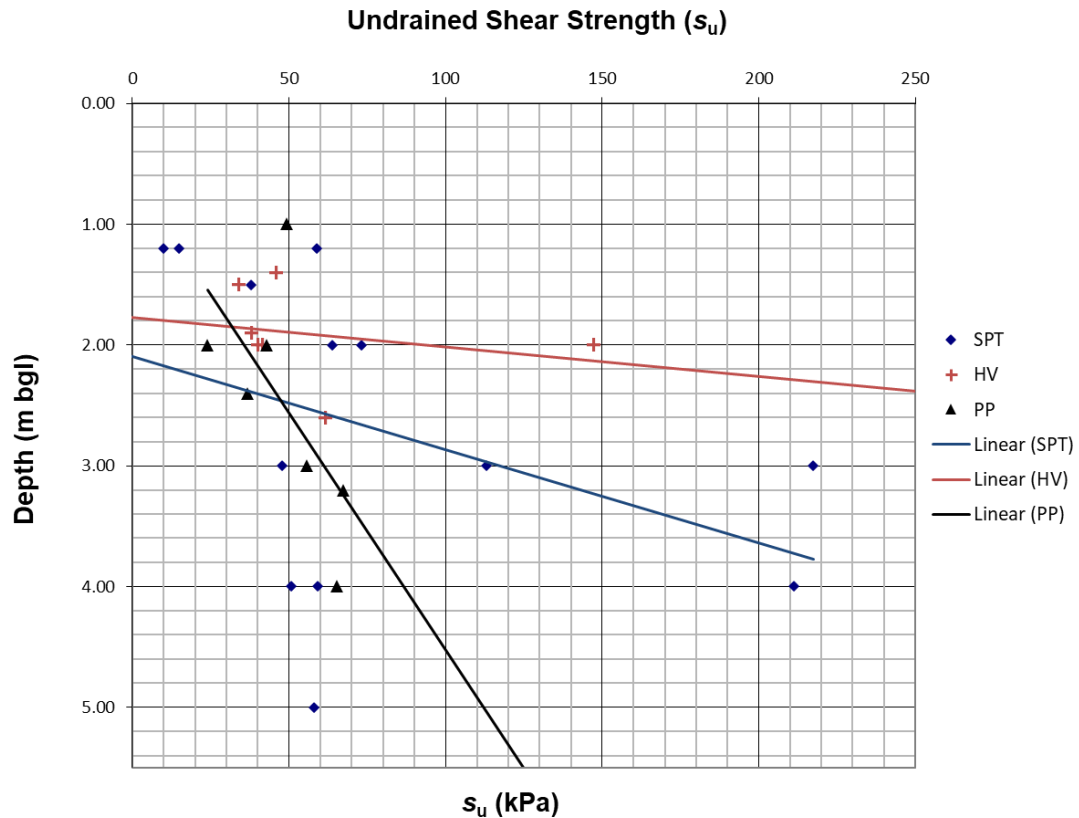
5.4.1 General

It is considered that the Made Ground is not suitable for a founding material due to the inherent variability of the material. Foundation options are therefore:

- » Deep strip foundations in to the underlying cohesive CLAY;
- » Conventional strip footings on vibro granular columns;
- » Raft foundations; and,
- » Mini pile foundations.

These options are discussed below:

Strength of the natural cohesive material has been assessed using in-situ testing by SPT, Hand Shear Vane (HV) and Pocket Penetrometer. The results of the testing have been plotted against depth as is shown in Graph 5-1 below:



Graph 5-1: Summary of s_u vs depth from in-situ SPT, HV and PP testing.

From Graph 5-1 it can be seen that the strength of the cohesive deposits typically increase with depth.

An average s_u of 39kPa is calculated at 1.50mbgl and a conservative s_u of 50kPa is assigned to the cohesive material from a depth of c. 2mbgl for the natural superficial deposits.

5.4.2 *Strip Foundations*

Strip foundations constructed at least 150mm into the soft to firm CLAY at 1.50mbgl will return an allowable bearing capacity of 67kN/m² calculated using a FoS of 3 and an undrained shear strength of 39kPa taken from Graph 5-1.

Deep strip foundations should be constructed at least 150mm in to the underlying firm CLAY encountered from 2.00mbgl. At this depth an allowable bearing capacity of 86kN/m² has been calculated using a Factor of safety of 3 and an undrained shear strength of 50kN/m² taken from Graph 5-1.

Atterberg limits determinations, summarised in Table 4-6 show the clay to be of low to medium plasticity and as such the sides of the foundations should not require protection using clay board or similar.

Foundation depths should take account of the presence of existing and proposed trees with foundations deepened locally in accordance with the requirements of NHBC Standards for a clay of medium plasticity. It is recommended that at working drawing stage a foundation schedule is prepared for the development taking account of the soil plasticity and the locations of trees.

5.4.3 *Ground Improvement*

The use of ground improvement techniques such as vibro granular columns will allow shallow foundations to be utilised with the Made Ground. The vibro granular columns should provide a bearing capacity of around 150kN/m² but will also remove variability within the Made Ground. Specialist advice should be sought from a suitably experienced contractor with regard to allowable bearing capacity and settlements.

5.4.4 *Raft Foundations*

The shallow strata is of varying composition, with Made Ground recorded to depths of up to 2.70m in thickness, over varying deposits of very soft to soft CLAY with horizons of SILT and GRAVEL with varying proportions of secondary and tertiary components. At the location of TP106 in the south-east of the site, Made Ground was recorded to 2.70mbgl underlain by GRAVEL to the base of the exploratory hole. The shallow strata will offer a range of bearing capacities and anticipated varying compressibility. Consideration could be given to the use of a stiffened pad and beam raft which will bridge over areas of more compressible strata and minimise differential settlements.

To create a suitable developable platform for a raft there will be a requirement for the raft foundation to be cast on imported granular fill that is spread, consolidated and levelled as a base for the raft. The disadvantage of this is the cost of importing the additional granular fill and removal off site of surplus spoil.

Service pipes rising through the raft should run through collars, cast in the concrete, which will allow some movement of the raft without fracturing service pipes. Raft foundation design should be undertaken by a suitably qualified and experienced Structural Engineer.

5.4.5 *Piled Foundations*

As an alternative consideration maybe given to the use of mini-piled foundations to transfer loadings through any deep Made Ground / poor ground conditions and bear within the more competent firm CLAY encountered below 3.00mbgl.

Use of mini-piles will reduce the amount of offsite disposal of spoil generated from foundation trenches along with reducing the amount of concrete required for the development.

Up to 2.70m of Made Ground has been recorded within the exploratory holes and consideration must be given to the potential for negative skin friction to have an adverse effect upon the piles.

Pile design should be undertaken by a specialist contractor to allow them to reduce the factor of safety based on their extensive pile testing data.

Should a piled foundation solution be the preferred option then warranty providers, such as NHBC or LABC, may require further information on ground conditions to a minimum of 5m below the base of the pile.

5.5 Recommendation

As a uniform bearing strata is unlikely to be achieved in the footprint of the proposed structures, strip foundations would need to be suitably designed to restrict and counter any differential settlements from the supporting strata.

Whilst a mini-pile solution is viable, deeper investigations will be required to satisfy warranty providers.

Due to the presence of varying Made Ground thickness and locally low shear strength cohesive soils within the boundaries of the proposed buildings, a reinforced raft foundation could be considered in order to spread the load at least over the proposed development boundaries and bridge over the areas with low strength cohesive soils. The design should be undertaken by a qualified and experienced structural engineer.

Ground improvement solutions can also be considered in order to provide a uniform bearing stratum for the foundations, although it may not be the most cost effective option for proposed development. Vibro granular columns will provide a bearing capacity of around 150kN/m². Specialist advice should be sought from a suitably experience contractor with regard to allowable bearing capacity and settlements.

5.6 Ground Floor Slabs

Due to the presence of varying Made Ground thickness to depths of between 0.50m and 2.70mbgl across the site, it is considered that warranty providers will require a suspended floor slab to be utilised.

Alternatively, if a raft foundation solution is selected than this can be utilised as a ground bearing floor slab.

Floor slabs should be designed by a suitably experienced structural engineer.

If vibro granular columns are used for the foundations, then this could be extended to the floor slab to improve formation conditions and reduce the risk of damage from settlement. However, it may be more reliable to opt for suspended floor slabs.

5.7 Pavement Construction

The proposed development will have hardstanding car parking and driveways. It is considered that the topsoil is not suitable for use as a sub-grade. Untreated Made Ground is considered unsuitable as a sub-grade due to its potential variability and potentially low strength/high compressibility. It should be removed to a depth of 0.5m below formation level and sorted to remove any unsuitable or deleterious materials. The sub formation should be rolled and suitable excavated material can then be replaced, up to formation level, in fully compacted thin layers. Any deficit should be made up with suitable imported fill compacted as above. Following this treatment an overall design CBR of 2-5% should be available, although this will require confirmation at a later date through in-situ CBR tests.

Following excavation the sub formation should be proof rolled and any soft material inspected and removed.

Based on the plasticity index the soils may be frost susceptible. Frost action can cause differential heaving, surface roughness and cracking, blocked drainage, and a reduction in bearing capacity during thaw periods. In areas of proposed roads and car parking it may be necessary to remove the frost susceptible soils and replace with non-frost susceptible material to the expected frost depth penetration.

5.8 Drainage

The presence of substantial depths of Made Ground across the site may result in settlement. It is therefore recommended that drain runs are designed using steeper gradients and flexible joints to allow for some differential settlement.

The soil infiltration tests show restricted potential for application of soakaway drainage and it is not recommended that soakaways are used for disposal of surface water runoff.

5.9 Concrete Durability

Based upon the results of the chemical analyses summarised in Table 4-7 it is considered that subsurface concrete can be designed in accordance with Design Sulphate Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with the recommendations provided in BRE Special Digest 1 (2005).

The exception is a sample obtained from the Made Ground in TP106 which due to the elevated sulphate would require concrete in accordance with DS-2, AC-2

5.10 Excavations

Site observations indicated that excavations should be feasible in the near surface with normal plant. It is anticipated that any obstructions will be grubbed out during the reduced level dig for the sub structure works.

Some of the exploratory holes were observed to be unstable during the excavation/drilling and the Made Ground and natural deposits included granular strata containing perched groundwater. The short and long term stability of near vertically sided excavations can therefore not be guaranteed and random and sudden instability within these soils should be anticipated.

Due to the variability of the Made Ground it is considered that all excavations are supported or battered back in accordance with guidance contained in CIRIA R97¹³. Groundwater seepages were noted in several trial pits; however, these were minor and it is considered that conventional sump pumping should be adequate.

5.11 Construction Activity and Inspection

The following activities and inspections should be incorporated into the site works:

- » Due to the variability of the soils at the site it is recommended that sufficient allowance is made for the inspection of formation and sub formations to foundations and pavement construction;
- » Excavations where access is required should be subject to a risk assessment from a competent person and where appropriate mitigation measures such as benching back the sides or use of support systems in accordance with CIRIA R97 utilised;
- » It is considered that de-watering may be required, especially following periods of heavy rainfall. Removal of surface water and water within trenches should be possible with conventional sump pumping. Discharge of any water should be agreed with the relevant regulatory body and be undertaken under a trade effluent discharge, where required. Measures to remove silt and suspended solids may be required and consideration should be given to provision of space for settling tanks or an attenuation pond;
- » Where access to confined spaces is required appropriate mitigation measures should be addressed within the Construction Stage Health and Safety Plan. Particular account should be taken of the gas results;
- » The presence of potential contamination and mitigation measures should be addressed as part of the Construction Stage Health and Safety Plan and should include measures to design out the risks, reduce their impact and finally the use of Personnel Protective Equipment (PPE).

¹³ CIRIA Report 97 – Trenching Practice – Second Edition (2001 revision).

6 Generic Risk Assessment

6.1 Introduction

Current good practice requires that the findings from a site investigation should be evaluated on a site-specific basis, using a risk-based approach. Risk assessment involves identification and evaluation of the hazards presented by the concentrations of contaminants measured followed by an evaluation of the risks which are associated with these hazards (LCRM¹⁴). Information gathered from the risk assessment has been collated in the revised contamination conceptual model in Section 6.6.

6.2 Soil Risk Assessment

6.2.1 Methodology

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

- Category 4 Screening Levels (C4SLs).
- LQM Suitable 4 Use Levels (S4ULs).
- ATRISK Soil Screening Values (SSVs) and CL:AIRE Generic Assessment Criteria (GACs).

C4SLs were published in 2013^{15,16}. The change to the contaminated land guidance has changed the evaluation of risk from 'minimal' (referred to as Health Criteria values (HCVs))¹⁷ used to generate Soil Guideline Values (SGVs) to 'low' (referred to as Lowest Level of Toxicological Concern (LLTCs)). The policy companion document and supporting letter by Defra, dated 3rd September 2014, states that C4SLs '*could be used under the planning regime, as well as within Part 2A*'. Based on these comments LKC considers the justifications and assumptions used to generate 'low' risk are suitable for the planning regime.

Where no C4SLs have been generated LKC will use the LQM S4ULs¹⁸. Similar assumptions and land uses to C4SLs have been used. However, toxicological information has been based on 'minimal risk' as per previous guidelines and assumptions^{19,20,21,22}.

If contaminants are not present as C4SLs and S4ULs then LKC will use ATRISK SSVs or CL:AIRE GACs²³. These follow the 'minimal' risk principle and more stringent exposure parameters and will be conservative.

LKC consider the main risk drivers for PAHs are benzo(a)pyrene (B(a)P) and naphthalene. This is due to B(a)P possibly being a carcinogen and most toxic of the

¹⁴ Land Contamination Risk Management (LCRM) <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

¹⁵ Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

¹⁶ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

¹⁷ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

¹⁸ LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

¹⁹ EA (2008). "Updated Technical Background to the CLEA Model." Science Report – SC050021/SR3.

²⁰ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

²¹ EA (2008). "A Review of Body Weight and Height Data used within the Contaminated Land Exposure Assessment Model (CLEA)." Project SC050021/Technical Review 1.

²² EA (2009). "Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values." Science report SC050021/SR7.

²³ CL:AIRE (2009). "The Soil Generic Assessment Criteria for Human Health Risk Assessment."

PAHs^{24,25} and naphthalene the most volatile and soluble²⁶. The new C4SLs indicate B(a)P as a surrogate marker for carcinogenic PAHs, if it falls within appropriate limits, since the risk from other non-carcinogenic PAHs are considered negligible²⁷. For B(a)P to be used as a surrogate marker it should follow the profile described by the HPA (2008)²⁸ and CL:AIRE (2013). Naphthalene will be treated separately using the LQM S4ULs.

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

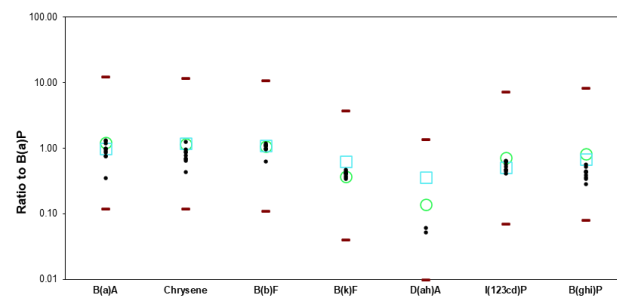
All criteria have been generated using the CLEA V1.06 model²⁹ based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.

A summary of the generic assessment criteria is provided in Appendix G. ATRISK SSVs and CL:AIRE GACs were not required for this dataset and have not been included.

B(a)P as Surrogate Marker

Based on the above assumption for PAHs, LKC undertook an assessment of the data for the site with regards to using B(a)P as a surrogate marker for carcinogenic PAHs as per HPA and CL:AIRE guidelines. The primary toxicological study related to Culp *et al.*³⁰, which was based on coal tar mixtures (>80,000mg/kg of total PAHs) fed in food to mice over a two-year carcinogenicity study.

Graph 6-1 summarises the study site data with respect to how the ratios of carcinogenic PAHs relate to B(a)P, within the confidence limits provided in the HPA document.



Graph 6-1: The ratio of PAH to B(a)P in soil for all available data at the site based on 10 samples (where values were >LOD to allow the calculation of a ratio).

Notes:

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

²⁴ EA (2002). "Contaminants in Soils: Collation of Toxicological Data and Intake Values for Humans. Benzo[a]pyrene." R&D Publication TOX2.

²⁵ USEPA (1984). "Health Effects Assessment of Polycyclic Aromatic Hydrocarbons (PAHs). EPA 540/1-86-013."

²⁶ EA (2003). "Review of the Fate and Transport of Selected Contaminants in the Soil Environment." Draft technical report P5- 079/TR1.

²⁷ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

²⁸ HPA (2010). "HPA Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)." Version 3.

²⁹ EA (2008). "CLEA Software (Version 1.05) Handbook." Science Report – SC050021/SR4.

³⁰ Culp, S; Gaylor, D; Sheldon, W; Goldstein, L and Beland, F (1998). "A Comparison of Tumours Induced by Coal Tar and Benzo-a-pyrene in a 2-Year Bioassay." Carcinogenesis. Vol 19, no. 1, pp. 117-124.

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

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

6.2.2 Soil Results Comparison against Assessment Criteria

All analysis sheets are presented in Appendix C. Elevated and pertinent results are presented in Table 6-1.

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

Contaminant	Units	No. of samples	Elevated Results	Sample Location	Criteria (1%/2.5%/6%)	Source of Criteria
Metals						
Lead	mg/kg	12	378	WS103 0.0-1.0m	200	C4SL
			413	TP103 0.0-0.5m		
			429	TP106 0.0-1.7m		
GENERAL						
pH	pH	6	Range 5.8 to 8.2			
SOM	%	6	Range 2.1 to 16.4			
Asbestos	N/A	6	Detected (see Table 6-2)			

Table 6-1: Summary of elevated and pertinent analytical results.

Notes:

Only results that exceeded assessment criteria have been shown and results from **all depths** are noted. Results have been compared to the nearest appropriate SOM.

Asbestos was identified, as detailed in Table 6-2.

Sample Location	ID	Type	Total Asbestos (%w/w)
WS101 (0-0.6m)	Amosite	Fibres/Clumps	<0.001

Table 6-2: Details of asbestos identified.

Elevated results have been identified for lead in WS103, TP103 and TP106.

6.2.3 Direct Contact Risk – Pollutant Linkage 1

Metals

Elevated metals (lead) have been identified on site, given the number and location of elevated samples, the contamination is considered to be site wide.

The source of the contamination is expected to the ash and brick (demolition rubble) noted in the made ground.

At the concentrations identified, the contaminants are considered to pose a potential risk to future site users (residents) in gardens and soft landscaped areas, where made ground may be exposed / in contact with home-grown produce. The principal pathways are the ingestion pathways (soil, dust and home-grown produce) and dermal contact.

The probability of metal contamination affecting site users is likely. With a medium consequence, the risk is considered to be moderate and remediation is recommended.

Asbestos

Asbestos (amosite) was identified in WS101 0.0-0.6m only. The asbestos was identified as free fibres (<0.001%w/w). The source of the asbestos is likely to be from demolition rubble.

Given the size of the site (5,500m²) and the number of samples containing asbestos (1 out of 12 samples), this asbestos is expected to be relatively limited / localised to the southeast of site likely to be associated with small area of demolition rubble.

Asbestos may affect site users in soft landscaping and garden areas in localised areas of the site, via the inhalation of fibres. The probability is considered to be likely. With a medium consequence the risk as assumed to be moderate and localised remediation is recommended.

Additional consideration should also be given to the risk to workers and offsite receptors during groundworks and construction. This is discussed further in Section 9.1.

Hydrocarbons

Olfactory evidence of hydrocarbons contamination was identified during the investigation (slight hydrocarbon odour (diesel / oil) in WS103 at from 1.50-2.0mbgl).

Samples taken from these locations identified very low concentration of p&m-xylene and toluene at deep depths (1.5-2.0mbgl and 2.0-2.60mbgl). At the concentrations detected none were above the relevant assessment criteria (residential) and considered to be an historic small scale localised spillage (as no obvious source) at the very small concentrations detected. No other hydrocarbons were above limits of detection.

The probability of petroleum hydrocarbons contamination affecting site users is unlikely. With a medium consequence, the risk is considered to be low and no remediation is required.

Pesticides

No elevated contamination identified and is not expected to be present onsite.

The probability of these contaminants affecting site users is unlikely. With a medium consequence, the risk is considered to be low and no additional remediation is required.

6.2.4 Risk from Inhalation of Vapours – Pollutant Linkage 2

Olfactory evidence of volatile contaminants was identified during the investigation (slight hydrocarbon odour in WS103). The PID readings recorded were at a maximum of 0.3ppm. Confirmatory soil analysis did not detect any TPHCWG, VOCs, SVOCs above the relevant assessment criteria.

The probability of these contaminants affecting site users is unlikely. With a medium consequence, the risk is considered to be low, and no remediation is required.

6.3 Gas Risk Assessment

Gas monitoring has not been carried out as part of this investigation.

No organic/putrescible material was encountered on site. However, made ground ranged between 0.5-2.7mbgl comprising a mixture of general inert waste in TP106 (parts of brick walls, broken wires, plastic and plastic bags) to demolition rubble (whole bricks, parts of brick walls, concrete) and general made ground containing ash, brick, glass and metal. LKC consider this to pose a small risk for generation of hazardous gas. Without gas monitoring, the risk cannot be removed.

LKC therefore consider the probability of gas affecting receptors is a low likelihood given the unconfirmed risk. With severe consequence, the risk is moderate, therefore as a conservative measure precautionary Characteristic Situation (CS) 2 /Amber 1 gas protection measure are advised.

6.4 Controlled Water Assessment

LKC considers the un-named stream 85m south and the Secondary A Aquifer as the primary receptor.

LKC have compared results above Limits of Detection (LOD). Where relevant the review of priority substances takes precedence considering threshold values for groundwater cannot be used '*as part of site-specific investigations*'. The hierarchy is as follows:

- » River Basin District Standards³¹ and updated Water Framework Directive³² for Annual Average / Maximum Allowable Concentration Environmental Quality Standards (AA-MAC-EQS) for priority substances (surface water risk).
- » 2016 private water supply standards (UKDWS potable)³³.
- » 2001 Environment Agency Values for Environmental Quality Standards (EQS) and UK Drinking Water Standard (UKDWS)³⁴.

With regards to hydrocarbon mixtures (TPHCWG) for UKDWS, LKC will use the CL:AIRE guidance on petroleum hydrocarbons in groundwater³⁵ based on WHO guidelines. No criteria values have been presented for surface waters (EQS) except the odour, visual evidence and taste test for fish³⁶. However, criteria for each banding has been presented by WHO within the CL:AIRE report for drinking water and will be used in the assessment.

No elevated contaminants above detection limits were identified in any water sample.

Based on the above, LKC considers the probability of contaminants on site affecting the unnamed stream 85m southwest of site, the Secondary A Aquifer and the Secondary Undifferentiated Aquifer as unlikely. Given the medium consequence, a low risk is anticipated (Pollutant Linkage 4) and no remediation is required.

³¹ Defra (2010). "The River Basin Districts Typology, Standards and Groundwater Threshold Values". Water Framework Directive (England and Wales) Directions 2010.

³² Defra (2015). "Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015".

³³ Statutory Instruments (2016). "The Private Water Supplies Regulation 2016." No. 614

³⁴ EA (2002). "Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environment Protection Act 1990."

³⁵ CL:AIRE (2017). "Petroleum Hydrocarbons in Groundwater: Guidance on Assessing Petroleum Hydrocarbons Using Existing Hydrological Risk Assessment Methodologies."

³⁶ EA (2009). "Petroleum Hydrocarbons in Groundwater: Supplementary Guidance for Hydrological Risk Assessment."

6.5 Additional Risk Assessments

6.5.1 Potable Water Supply (Pollutant Linkage 5)

Soil results were compared to United Utilities (UU) guidelines for the selection of potable water pipes in land potentially affected by contamination³⁷. Only contaminants of concern, based on the preliminary conceptual model and ground conditions encountered, were analysed. The following contaminants were not considered to be a risk and therefore not included in the analysis suites: phenols, cresols, ethers, nitrobenzene, ketones, aldehydes and amines.

It should be noted typical pipework depths are 0.75mbgl to 1.35mbgl. Once details of the pipeline location and depths are known a UU Risk Assessment should be undertaken.

At this stage, the probability of organic contaminants affecting potable water pipes is unlikely. Given the consequence is considered to be medium, the risk (pollutant linkage 5) is anticipated to be low risk and remediation is unlikely to be required (subject to further risk assessment and site levels).

6.6 Revised Contamination Conceptual Model

The Preliminary Contamination Conceptual Site Model (Table 2-3) has been revised following the risk assessments undertaken in Sections 6.1-6.5. The revised contamination conceptual model follows the same methodology and guidance used in the preliminary contamination conceptual model. The risk matrix is provided in Appendix A.

The revised contamination conceptual model is presented in Table 6-3.

Where a very low risk is identified, no specific remediation is required.

Where a low risk is identified, some form of remediation may be required depending on the pollutant linkage, the type and concentration of contaminants present and the proposed development.

Where a moderate/low risk is identified, an assessment will be undertaken to establish what category the pollutant linkage will fall into.

Where a moderate or higher risk is identified, remediation or further investigation work is recommended.

Further details of the remedial proposals and a remedial option appraisal are given in Section 9.

³⁷ UU(2011). "United Utilities Water Supplementary Guidance for the Selection of Water Pipes in Land Potentially Affected by Contamination."

Pollutant Linkage	Pathway	Receptor	Contaminant	Probability	Consequence	Risk	Assessment
PL1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust, home-grown produce, soil attached to home-grown produce. - Windblown dust.	- Current residents. - Future residents. - Site users. - Offsite receptors.	Heavy metals: - Lead	Likely	Medium	Moderate	- Likely probability as elevated metals (lead) identified in the made ground across the site which could come into contact with site users in gardens / soft landscaping areas. - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
			ACM (localised SE): - Amosite			Moderate (Localised)	- Likely probability as ACM (amosite) identified in 1no. location, in the southwest of site. Based on sampling density assumed to be localised to this area where deeper fill material (including potential demolition rubble was present). - Recommendation^{*1}: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
			Hydrocarbons Pesticides	Unlikely	Medium	Low	- Unlikely probability as no elevated levels of hydrocarbons identified. - Unlikely probability as no pesticides detected during investigation. - Recommendation: No remediation required
PL2	- Inhalation of vapours. - Migration through permeable strata and preferential pathways.	- Current residents. - Future residents. - Site users.	Volatile Contaminants - None identified	Unlikely	Medium	Low	- Unlikely probability as no elevated concentrations identified across the site. Highest PID reading=0.3ppm. - Recommendation: No remediation required.
PL3	- Inhalation of gas. - Migration through permeable strata and preferential pathways. - Explosion in confined spaces (methane only).	- Current residents. - Future residents. - Buildings. - Offsite land users.	- Carbon dioxide - Methane	Low Likelihood	Severe	Moderate	- No gas monitoring undertaken as part of the investigation. Based on variable depth of made ground (0.5-2.7mbgl), risk from hazardous gas is considered possible (low probability), but not significant. - Recommendation: In lieu of no gas monitoring precautionary gas protection measures in line with CS2 / Amber 1 recommended.
			- Radon	Unlikely	Medium	Low	- <1% homes of homes above action level. - Recommendation: No remediation required.
PL4	- Surface Run-off. - Migration through permeable strata and preferential pathways - Perched waters migration.	- Groundwater (Secondary A Aquifer). - Surface water (Unnamed stream 85m SW).	Mobile contaminants: - Metals and PAHs. - Hydrocarbons	Unlikely	Medium	Low	- Unlikely probability as no elevated contaminants (metals, PAHs and hydrocarbons) identified in ground water samples. - Recommendation: No remediation required.
PL5	- Ingestion of tainted water supply.	- Future site users (via potable water).	Organic Contaminants: - None identified.	Unlikely	Medium	Low	- No elevated contaminants identified. - Recommendation: UU risk assessment to be undertaken. As a precaution barrier piping may be required subject to further assessment and site levels.

Table 6-3: Revised Contamination Conceptual Site Model.

Notes: ^{*1} The conceptual model only takes into consideration the future use of the site and long-term exposure. Consideration should also be given to the short-term exposure of construction workers and nearby land users to ACM containing soils during groundworks. This is discussed further in Section 9.1.

7 Waste Disposal Assessment

The soil contamination results as presented in Appendix C have been used to help determine the waste classification of material for off-site disposal.

As an initial screen the soil results were inputted into HazWaste Online™. This is a web-based facility that allows an assessment waste as either hazardous or non-hazardous waste based on relevant guidance and legislation^{38, 39, 40, 41, 42, 43, 44, 45, 46}.

HazWaste Online™ has been designed to cover, amongst other waste types, the European Waste List of Waste (LoW) code number 17 "Construction and Demolition Waste (Including Excavated Soil from Contaminated Sites)".

Where less than limits of detection (LOD) were recorded, the value of the LOD was inputted.

Where applicable, appropriate metal species based on hazard statements/ molecular weight, site history, ground conditions and likely species present in soils were used (e.g. metal oxides relating to an ash-based source).

The results show that all the samples tested are classified as NON-HAZARDOUS WASTE and LoW code "17-05-04 - soil and stones other than those mentioned in 17 05 03" is suitable. The HazWaste Online™ output sheets are provided in Appendix H.

³⁸ EA (2018). "Guidance on the Classification and Assessment of Waste (1st Edition v1.1)". Technical Guidance WM3.

³⁹ CLP Regulation - Regulation 1272/2008/EC of 16 December 2008.

⁴⁰ 1st ATP - Regulation 790/2009/EC of 10 August 2009

⁴¹ Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

⁴² WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

⁴³ Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

⁴⁴ 13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

⁴⁵ POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

⁴⁶ 2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

8 Conclusions

8.1 Geotechnical

Geotechnical observations and conclusions are contained in Table 8-1 below, more detailed discussions are contained within Section 5.

Proposed Development	- Four new low rise residential dwellings (3 new build and 1 barn conversion) and a two storey extension to side of existing farm house.
General Ground conditions / Geotechnical Testing	- Based on WS101-WS105, TP101-TP107. - Maximum investigation depth 5.45mbgl. - Made Ground to 0.50 – 2.70mbgl. - Ground conditions identified at the site typically comprises Made Ground between 0.50m and 2.70mbgl over natural predominantly cohesive superficial deposits of CLAY with horizons of SILT and GRAVEL to the completion depths investigated. - No bedrock encountered. - Groundwater encountered as perched pockets within the Made Ground and superficial deposits.
Allowable Bearing Pressure	- Undrained shear strength for cohesive materials is set at 39kPa at 1.50mbgl, increasing to a conservative 50kPa at 2.00mbgl. - This will return an Allowable Bearing Capacity for strip foundations of 63kN/m² at 1.50mbgl and 86kN/m² at 2.00mbgl.
Anticipated Foundation Type	- Ground conditions below the proposed extension are variable with varying depths of made ground (0.50-2.70mbgl). Shallow superficial deposits typically comprise very soft to soft CLAY, increasing with strength with depth. Given range of soil strength and types within the boundaries of the proposed structures, a reinforced raft foundation will prove suitable. The design should be undertaken by a qualified and experienced structural engineer. - Ground improvement solutions can also be considered in order to provide a uniform bearing stratum for the foundations, although it may not be the most cost effective option for proposed development. Vibro granular columns will provide a bearing capacity of around 150kN/m². Specialist advice should be sought from a suitably experience contractor with regard to allowable bearing capacity and settlements.
Shallow Groundwater	- Shallow groundwater identified on the site typically as perched pockets, should not present a constraint to the development. - Suitable drainage should be considered in the proposed development layout.
Concrete Requirements	- Based on BRE Digest 2005 ⁴⁷ – DS-1 AC-1 across the majority of the site. DS-2 AC-2 required in the vicinity of TP106. Further investigation in this area may be advisable.
Services	- Services – consideration to the presence of services running through the site. Services may need to re-routed.
Coal Mining	- The site is within a Coal Authority mining area but outside a Development High Risk Area.
Temporary support of excavation	- Likely to be required based on extent of Made Ground, presence of granular material within Made Ground and natural strata along with presence of water
Plasticity	- Consideration will need to be given to the shrink / swell of the clay strata if it is to be used as founding strata, particularly where trees/hedges are present. Foundations may need to be deepened. A medium volume change potential has been calculated for the site.

Table 8-1: Geotechnical Observations and Conclusions Table.

⁴⁷ BRE (2005). "Concrete in Aggressive Ground." Special Digest 1.

8.2 Contamination Assessment

A revised contamination conceptual model has been produced by LKC which is summarised in Table 8-2 below (more detailed model provided in Section 6.6).

Pollutant Linkage		Risk	Recommendations
1	Contaminants posing a risk to site users via dermal contact, ingestion and inhalation (of soil, dust, fibres and home-grown produce).	Moderate	- Moderate risk as elevated metals (lead) identified in the made ground across the site which could come into contact with site users in gardens / soft landscaping areas. - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
		Moderate (Localised)	- Localised moderate risk for ACM (amosite) identified in 1no. location, in the southeast of site, where deeper fill material (including potential demolition rubble was present). - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas or made ground removal.
		Low	- No elevated levels of hydrocarbons identified. No pesticides detected during investigation. Low risk assumed. - Recommendation: No remediation required
2	Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	- No elevated concentrations identified across the site. Highest PID reading=0.3ppm. Low risk assumed. - Recommendation: No remediation required.
3	Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate	- No gas monitoring undertaken as part of the investigation. Based on variable depth of made ground (0.5-2.7mbgl), risk from hazardous gas is considered possible, but not significant. Moderate risk assumed. - Recommendation: In lieu of no gas monitoring precautionary gas protection measures in line with CS2 / Amber 1 recommended.
		Low	- <1% homes of homes above action level. - Recommendation: No remediation required.
4	Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Low	- No elevated contaminants (metals, PAHs and hydrocarbons) identified in ground water samples. Low risk assumed. - Recommendation: No remediation required.
5	Organic contaminants posing a risk to water pipes.	Low	- No elevated contaminants (organic) identified. Low risk assumed. - Recommendation: UU risk assessment to be undertaken. As a precaution barrier piping may be required subject to further assessment.

Table 8-1: Summary Risk Table.

Material onsite (from samples tested) can be classified as NON-HAZARDOUS WASTE.

Remedial recommendations are presented in Section 9.

9 Recommendations and Remedial Strategy

The recommendations provided below are considered appropriate for the site based on the site investigation work undertaken. LKC should stress that no remediation, enabling works or designing works should take place until Regulatory approval has been obtained.

9.1 Remediation and Validation Recommendations

Table 9-1 details the further works and remedial recommendations / requirements. The table shows work required post-demolition of building(s), pre-construction (i.e. during earthworks) and during / post construction.

PL	Remediation Requirements	Validation Requirements
ALL	<u>Watching Brief during Earthworks Inspections / Post Demolition / Unexpected Contamination</u> The relevant contractors should be briefed that during development works at the site should any unusual ground conditions and / or visual or olfactory evidence of contamination (including asbestos containing material) be encountered at the site, LKC and the Local Authority should be informed, and further assessment of the material may be required. LKC recommend that a consultant be present during the removal of any slabs (post demolition). This is recommended to confirm ground conditions below the current buildings	Log of work undertaken including photographs. Details of any sampling undertaken and validation of any potential additional remedial work.
1	<u>Environmental Cover System</u> <i>Where shallow made ground is present it may be removed to natural strata and no depth specific environmental cover system will be required.</i> Where made ground remains an environmental cover system is recommended across the site. The environmental cover system should be as follows: Private Back Gardens: 600mm thick environmental cover system comprising: <u>Either</u> 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 500mm comprising clean inert fill and sufficient topsoil for a growing medium. <u>Or</u> geotextile membrane and at least 600mm comprising clean inert fill and sufficient topsoil for a growing medium. Private Front Garden / Shared Landscaping: 450mm thick environmental cover system comprising: <u>Either</u> 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 350mm comprising clean inert fill and sufficient topsoil for a growing medium. <u>Or</u> geotextile membrane and at least 450mm comprising clean inert fill and sufficient topsoil for a growing medium. The subsoil layer can be replaced by additional topsoil. A diagram of a typical environmental cover system is shown in Appendix I.	Measuring depth of environmental cover system using a staff and providing photographic evidence. Photographic evidence of the granular physical break or geotextile layer will also be collected. Chemical validation of imported soils: See Table 9-2.

3	<u>Gas Protection Measures (Precautionary)</u> In line with CS2 / Amber 1 as per UK guidance^{48,49}. This is likely to / should include: • Passive subfloor or active subfloor ventilation system. • Methane and carbon dioxide resistant membrane installed as per manufacturer's instructions. • Ventilation of confined spaces within the building. • Well-constructed reinforced suspended, raft or cast in situ ground slab. • Minimum penetration of ground slab by services. • All joints and penetrations to be sealed. Depending on the type of building and foundation design the protection measures can vary. The gas protection measures will be detailed and approved with the Local Authority once the foundation design has been confirmed.	Supply and review of foundation designs. Photographic evidence of sub-floor void, ventilation and suitably sealed gas membrane. Validation of gas protection measures should be in line with CIRIA 735⁵⁰
5	<u>Potable Water Pipes</u> It is recommended that a Water Pipeline Assessment is undertaken once the location and depth of potable water pipes are known.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.
<u>Grubbing Out of In-Ground Structures</u> It is recommended that in-ground structures are grubbed out as part of the groundworks.		
<u>Re-use of site won material</u> To ensure material is compliant with appropriate waste regulations, any site won material re-used onsite should be in recourse to appropriate exemptions. A U1 and T5 exemption should be registered. This will allow the following to be used onsite or brought in for use onsite (refer to guidance for types of waste that can be used⁵¹): 5,000 tonnes (c. 2,500m³) <u>treatment</u> of crushed concrete / stone. 1,000 tonnes (c. 500m³) <u>use of</u> non-hazardous soil. 5,000 tonnes (c. 2,500m³) <u>use of</u> clays, sand, gravel, brick, concrete, stone etc. 50,000 tonnes (c. 25,000m³) <u>use of</u> bituminous material to be used in roadways. A Materials Management Plan (MMP) with recourse to the CL:AIRE Code of Practice may be required if volumes exceed exemption limits. This must be registered before material movement starts onsite. If an MMP is required, this needs to be registered by a Qualified Person (QP) and there must be 'certainty of use' for any material re-used onsite or exported to site to ensure there is no 'sham recovery'. For all the above material will need to be tested at the rate and analytical suites presented in Table 9-2.		

⁴⁸ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665

⁴⁹ BSI (2015). "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for new buildings." BS8485:2015.

⁵⁰ CIRIA (2014). "Good Practice on the Testing and Verification of Protection Systems for Building Against Hazardous Ground Gas". CIRIA C735.

⁵¹ <https://www.gov.uk/guidance/waste-exemptions-using-waste>

Asbestos Management Plan

Due to the presence of asbestos containing material, it is recommended that additional precautions are taken during site clearance, earthworks and construction in the area of concern. The presence of asbestos in the made ground at the site presents a potential risk of generation of airborne fibres if this material is disturbed, such as for excavations to construct new foundations.

This risk can be managed by careful procedures and site monitoring to reduce the risk of airborne fibres, and it is recommended that an appropriate 'Asbestos Management Strategy' is developed and adopted for all intrusive ground works which disturb the made ground in the area of concern. This should be carried out in line with CIRIA C733⁵².

This may include asbestos awareness training for all site staff, provision of suitable personal and respiratory protective equipment and air monitoring.

With regards to cement bound asbestos, this can be handpicked, doubled bagged and disposed of appropriately to a licenced landfill. Guidance on removing asbestos cement is described in HSE (2012)⁵³.

If ACM is identified in soil arisings then soil should be placed directly into covered skips and disposed of at a suitable licenced landfill, after further testing to quantify the extent of asbestos contamination of the soils. It should be considered that blue asbestos is notifiable and must be removed by a licenced contractor.

Health and Safety Considerations

In working with, removing or treating any contaminating material it is important that any potential risks associated with the actual site works are mitigated by good environmental management of the site during the remedial phases. Standard health and safety precautions (as per HSE guidance⁵⁴) should be adopted by all workers involved with site enabling and construction works.

Asbestos Survey

A Pre-Demolition and Major Refurbishment Asbestos Survey should be undertaken, and any ACMs removed and properly disposed of, prior to the demolition of the existing buildings, by a suitably qualified professional.

Table 9-1: Further work, remediation and validation requirements

Notes: See Table 6-1 for pollutant linkage (PL) details.

9.2 Validation of Subsoil / Topsoil

Chemical validation of all imported soils to be used on site in gardens and soft landscaping areas should be undertaken. Imported soils should be accompanied by a certificate of analysis and source details.

A summary of the required imported material sampling requirements is presented in Table 9-2. Ideally, the material should be sampled at source to prevent double handling if soil fails, with confirmatory sampling undertaken on importation to site. However, where this is not possible then material imported should be segregated based on source and soil type. Validation samples should be taken prior to placement in gardens / soft landscaping to ensure suitability for use.

⁵² CIRIA (2014). "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks". C733.

⁵³ HSE (2012). "Removing Asbestos Cement (AC) Debris." A11 Asbestos Essential – Non-licenced Tasks.

⁵⁴ HSE (1991). "Protection of Workers and the General Public During Development of Contaminated Land" London HMSO.

Material Type	Source	Suite of Analysis	Sampling Rate*
Topsoil / Subsoil	Greenfield	Suite A	1 sample per 50m ³ (min. 3 per source)
	Brownfield / Unknown	Suite B	
Recycled Stone	Any	Suite A	1 sample per 500m ³ (min. 3 per source)
Stone / subsoil	First Generation i.e. quarried sand (subsoil) or stone (break layer)	No testing is required. Certification of material provenance is required.	

Table 9-2: Sampling requirements for imported soils.

Notes:

Suite A - Heavy metals, pH, water soluble sulphate, speciated PAH, soil organic matter and asbestos screen.

Suite B - Heavy metals, pH, water soluble sulphate, speciated PAH, phenol, total and free cyanide, soil organic matter, asbestos screen, banded petroleum hydrocarbons (TPH CWG), BTEX, MTBE.

*Minimum sampling rate of 3 samples per source.

Any soil with visual or olfactory evidence of hydrocarbons should be rejected.

In addition, it should be ensured that the matrix of the topsoil is suitable as a growing medium and no undesirable material is present (in line with BS3882⁵⁵). LKC advise this information is provided by the supplier before material is imported onto site.

Imported material to be used in gardens will be compared against residential with plant uptake criteria (as used in the contamination risk assessment (Section 6-1). Appropriate remedial target criteria are presented in Appendix I.

9.3 Site Completion Report

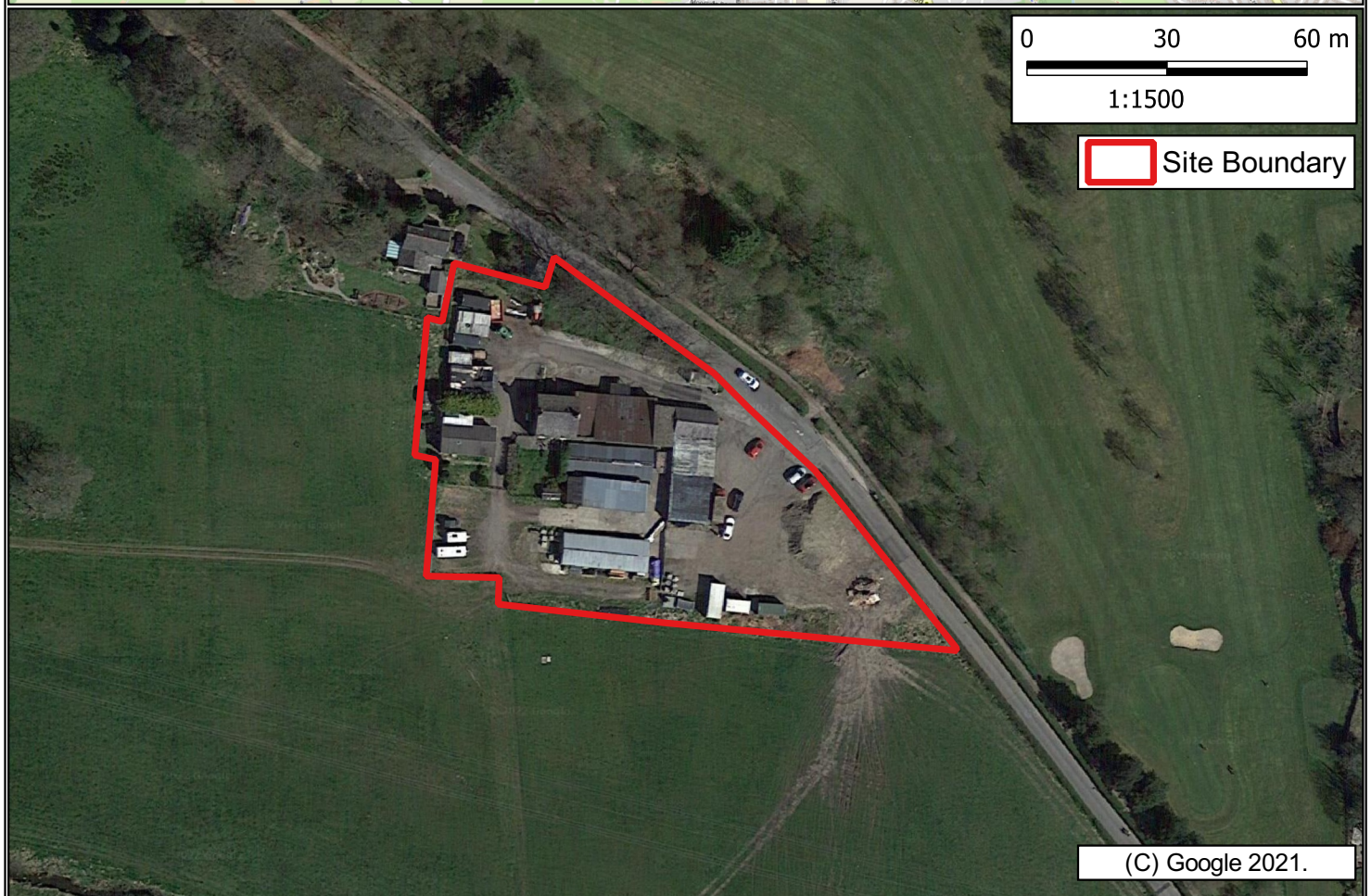
It is recommended that any remediation carried out on the site is validated by a third party and suitable documentary evidence provided in a Site Completion Report, such as photographs, consignment documents and analytical results. This should include as a minimum:

- » Pre-Demolition and Major Refurbishment Asbestos Survey.
- » Watching brief under slab (if to be removed) after demolition of the current farm buildings.
- » Validation of gas protection measures installed (CS2 / Amber 1) or assessment of the gas risk after monitoring.
- » Source removal: Validation of any made ground removal (photographic evidence that natural strata was reached).
- » Environmental capping layer: Validation of environmental cover system in gardens and POS areas.
- » Verification testing of all imported soil for garden and soft landscaping areas.
- » Information on the installation of protective pipes and / or sterile trenches (if required) following the findings of the UURA.
- » Provision of waste transfer documents.
- » Details of any unexpected contamination identified onsite, suitably risk assessed and / or validated.

The Site Completion Report will assist the Local Authority in the discharge of any future relevant planning condition and will also be of use to solicitors acting on behalf of any prospective conveyancer who may have concerns over the former use of the site.

⁵⁵ BS (2015). "Specifications for Topsoil and Requirements for use." BS3882:2015.

Figures



Client: Keystone Projects (Hawkshaw) Ltd				Title: Site Location & Boundary Plan			
Site: Hollymount Farm, Bury							
Job No.: LKC 22 1142	Drawn By: JW	Checked By: EK	Drawn: April 2022	Scale (see scale bar): 1:25,000 & 1:1,500 @ A4		Figure: 1	



Extract from: Hawthorn Design Partnership
Drawing Ref: Proposed Site Plan - Option3, No.14, Rev:A (09/11/2022)

KEY

 Site Boundary

 STRUCTURE REMOVED

 EXISTING STRUCTURE

 NEW STRUCTURE

EXISTING SITE:

 EXISTING TREE RETAINED

HARD LANDSCAPE:

 PROPOSED NATURAL STONE RETAINING WALLS

 PROPOSED COLOURED ASPHALT TO ACCESS ROAD
TARMAC ULTICOLOUR OR SIMILAR APPROVED
COLOUR: LIGHT BUFF

 PROPOSED NATURAL STONE FLAG PAVING
TO OUTDOOR LIVING AREAS

 'RAJ GREEN' INDIAN SANDSTONE 400MM X 600MM

 PROPOSED NATURAL STONE SETT PAVING
TO PROPERTY FRONTAGES/CIRCULATION SPACES

 'RAJ GREEN' INDIAN SANDSTONE 100MM X 200MM

 PROPOSED PERMEABLE CONCRETE BLOCK PAVING TO DRIVEWAYS
'MARSHALLS TEGULA PRIORA' OR SIMILAR APPROVED
COLOUR 'PENNANT GREY' 160MM GAUGE RANDOM SIZE MIX

SOFT LANDSCAPE:

 PROPOSED SPECIMEN TREES
REFER TO PLANTING PLANS FOR SPECIES
AND NURSERY SPECIFICATION

 PROPOSED NATIVE HEDGE WITH STRAINED POST AND WIRE FENCE
SEE PLANT SCHEDULE FOR SPECIES MIX, SPACING AND
SPECIFICATION NOTES

 LAWN AREA (TO BE SEEDED OR TURFED)
TURF TO BE LAID ON MIN 150MM DEPTH OF TOPSOIL LIGHTLY
COMPACTED AND RAKED TO A FINE SURFACE TILTH

 WILDFLOWER MEADOW MIX
EMORSGATE SEED MIX EL1 FLOWERING LAWN MIX
SOWN TO SUPPLIERS RECOMMENDED SPECIFICATION

 PROPOSED AMENITY PLANTING
SEE PLANTING PLANS FOR DETAILS

DWELLINGS

 DWELLING FOOTPRINT

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

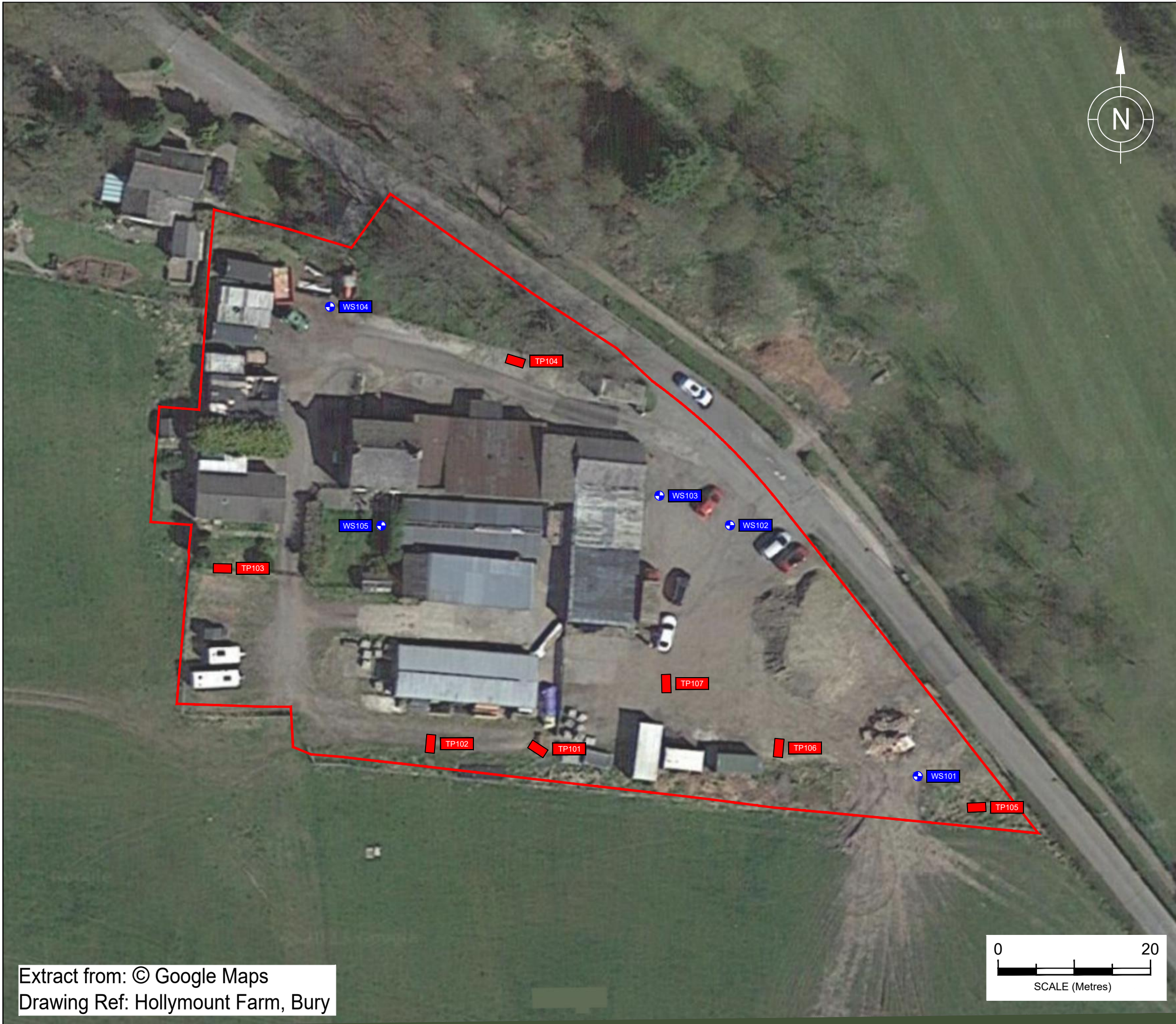
LK
CONSULT LIMITED

Client:
Keystone Projects Ltd

Site:
Hollymount Farm, Bury

Title:
Proposed Development Plan

Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 22 1142	1:500 @ A3	2	A
Drawn By:	Checked By:	Drawn:	
AC	RP	Feb 2023	



KEY

-  Site Boundary
-  Window Sample Borehole (WS)
-  Trial Pit (TP)

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



Client:		Keystone Projects Ltd	
Site:		Hollymount Farm, Bury	
Title:		Site Investigation Location Plan	
Job No.:	Scale (See Scale Bar):	Figure:	Revision:
LKC 22 1142	1:500 @ A3	3	A
Drawn By:	Checked By:	Drawn:	
AC	RW	Feb 2023	

Extract from: © Google Maps
Drawing Ref: Hollymount Farm, Bury

Appendix A

Risk Matrix

Risk Evaluation

The method for risk evaluation is a qualitative method of interpreting the output from the risk estimation stage of the assessment, based on CIRIA 552⁵⁶. It involves the classification of the:

- » Magnitude of the potential consequence (severity) of the risk occurring (Table A).
- » Magnitude of the probability (likelihood) of the risk occurring (Table B).

Consequence (Severity)		
Classification	Definition	Example
Severe	- Short term (acute) risk to human health likely to results in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. - Short term risk of pollution (note: water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. - Catastrophic damage to buildings/properties. - A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definition of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	- High Concentrations of cyanide on the surface of an informal recreation area. - Major spillage of contaminants from site into controlled waters. - Explosion, causing building collapse (can also equate to short term human health risk if buildings are occupied).
Medium	- Chronic damage to Human Health ('significant harm' as defined in DETR, 2000). - Pollution of sensitive water resources (note Water Resources Act contains no scope for considering significance of pollution). - A significant change in a particular ecosystem, or organism forming part of such ecosystem.	- Concentrations of a contaminant from site exceed generic, or site-specific assessment criteria. - Leaching of contaminants from a site to a major or minor aquifer (Principal and Secondary). - Death of a species within a designated nature reserve.
Mild	- Pollution of non-sensitive water resources. - Significant damage to crops, buildings, structures and services ('significant harm' as defined in DETR, 2000). - Damage to sensitive buildings/structures/services or the environment.	- Pollution of non-classified groundwater. - Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	- Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. - Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). - Easily repairable damage to buildings, structures and services.	- The presence of contaminants at such concentrations that protective equipment is required during site works. - The loss of plants in a landscaping scheme. - Discoloration of concrete.

Table A. Classification of Consequence

Probability (Likelihood)	
Classification	Definition
High Likelihood	- There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	- There is a pollutant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. - Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	- There is a pollutant linkage and circumstances are possible under which an event could occur. - However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Unlikely	- There is a pollutant linkage, but circumstances are such that it is improbable that an event would occur in the very long term.

Table B. Classification of Probability.

⁵⁶ CIRIA C552 (2001) Contaminated Land Risk Assessment - A Guide to Good Practice.

These classifications are then compared to indicate the risk presented by each pollutant linkage (Table C). It is important that this classification is only applied where there is a possibility (which can range from high likelihood to unlikely) of a pollutant linkage existing.

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table C. Comparison of Consequence against Probability

Once the risk has been determined the corresponding action can be assessed (Table D).

Risk	Action Required
Very High Risk	- There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. - This risk, if realised, is likely to result in a substantial liability. - Urgent investigation (if not already undertaken) and remediation are likely to be required.
High Risk	- Harm is likely to arise to a designated receptor from an identified hazard. - Realisation of the risk is likely to present a substantial liability. - Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	- It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. - Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	- It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	- There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Table D. Description of the Classification and Likely Action Required.

Where a very low risk is identified no specific remediation is required.

Where a low risk is identified, some form of remediation may be required depending on the pollutant linkage, the type and concentration of contaminants present and the proposed development.

Where there is a moderate/low risk identified, an assessment will be undertaken to establish what category the pollutant linkage will fall into.

Where LKC identifies a moderate or higher risk, remediation or further investigation work is recommended.

Appendix B

Profile Logs

Excavation Method

Drive-in Windowless Sampler

Dimensions
Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

Job Number
LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	ES PID=0.4ppm					MADE GROUND: Black silty sandy GRAVEL comprising brick fragments, concrete fragments and mudstone fragments with occasional ash. Sand is fine to coarse. Gravel is fine to medium, subangular.			
1.20-1.65	SPT N=2		1,0/0,1,1,0		(1.65)				
1.20-1.65	ES								
1.65-2.00	ES PID=0.2ppm				1.65	Soft consistency low strength brown very sandy silty CLAY with rare rootlets. Sand is fine to medium.			
2.00-2.45	SPT N=4		1,1/1,1,1,1		(0.75)				
2.40	PP 36.7kPa				2.40	Brown sandy silty GRAVEL comprising mudstone. Sand is fine to medium. Gravel is fine to medium, subangular.			
3.00-3.45	SPT N=11		2,3/2,3,3,3		3.00	Firm consistency brown gravelly sandy SILT. Sand is fine to medium. Gravel is fine to medium, subangular comprising mudstone.			
3.00-3.45	D				(0.60)				
3.20-3.60	D		Water strike(1) at 3.50m.		3.60	Soft consistency medium strength brown sandy silty CLAY. Sand is fine to medium. Strata noted to be wet from below 4.00mbgl.			
4.00	PP 65.4kPa		3,3/3,3,4,4		(1.85)				
4.00-4.45	SPT N=14								
5.00-5.45	SPT N=14		3,3/3,3,4,4		5.45	Complete at 5.45m			

Remarks

Borehole wet and unstable.
Limited recovery from below 4.00mbgl.
Strata noted to be too soft for pocket penetrometer test from below 4.00mbgl.

Scale (approx)

1:50

Logged By

RW

Figure No.

lkc 22 1142.WS101

Excavation Method

Drive-in Windowless Sampler

Dimensions
Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

Job
Number
LKC 22 1142

Location
Dates

15/02/2023

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	ES PID=0.3ppm				(1.00)	MADE GROUND: Black sandy GRAVEL comprising tarmacadam fragments and brick fragments. Gravel is fine to medium, subangular.		
1.00-1.50	ES PID=0.1ppm				1.00	MADE GROUND: Soft consistency brown silty CLAY with rare brick and organic material (straw) (Relic Topsoil).		
1.20-1.65	SPT N=8		3,3/1,3,2,2		(0.50)			
1.50-2.00	D				1.50	Soft consistency low strength brown sandy silty CLAY with rare rootlets. Sand is fine to medium.		
1.50-2.00	ES				(0.50)			
2.00	PP 24kPa				2.00	Brown sandy silty GRAVEL comprising mudstone and sandstone. Sand is fine to medium. Gravel is fine, subangular.		
2.00-2.45	SPT N=14		4,4/3,4,4,3		(0.50)			
2.00-2.50	D				2.50	Firm consistency brown sandy clayey SILT. Sand is fine to medium.		
2.60-3.00	D				(0.50)	Band of silty clayey SAND from 2.50mbgl to 2.60mbgl.		
					3.00	Medium dense brown SAND. Sand is fine to coarse.		
3.00-3.45	SPT N=19		Water strike(1) at 3.00m, rose to 2.90m in 20 mins. 3,4/4,5,5,5		(0.40)			
					3.40	Firm consistency brown slightly gravelly sandy silty CLAY. Sand is fine to medium. Gravel is fine, subangular comprising mudstone and sandstone.		
					(0.60)			
4.00-4.45	SPT N=12		3,3/3,3,3,3		4.00	Firm consistency brown sandy silty CLAY with bands of silt. Sand is fine to medium.		
					(1.00)			
5.00-5.45	SPT N=50		3,8/10,12,13,15		5.00	Very dense brown sandy GRAVEL comprising sandstone. Sand is fine to medium.		
					(0.45)			
					5.45	Complete at 5.45m		

Remarks

Borehole was wet and unstable.

Scale
(approx)

1:50

Logged
By

RW

Figure No.

LKC 22 1142.WS102

Excavation Method

Drive-in Windowless Sampler

Dimensions
Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

Job
Number
LKC 22 1142

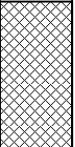
Location
Dates

14/02/2023

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	ES PID=0.2ppm				(1.00)	MADE GROUND: Black silty sandy GRAVEL comprising tarmacadam fragments and ash. Sand is fine to coarse. Gravel is fine to medium, subangular.			
1.00-1.50	ES PID=0.1ppm		1,0/1,1,1,0		1.00	Soft consistency brown very gravelly silty CLAY. Gravel is fine to medium, subangular comprising mudstone.			
1.20-1.65	SPT N=3				(0.50)				
1.50-2.00	ES PID=0.3ppm				1.50	Black silty clayey GRAVEL comprising mudstone and sandstone. Gravel is fine to medium, subangular. Strata noted to be wet. Slight diesel odour from 1.50mbgl to 2.50mbgl.			
2.00-2.45	SPT N=4		1,1/1,1,1,1		(0.95)				
2.00-2.60	ES PID= 0.2ppm				2.45	Soft consistency medium strength grey with black staining sandy silty CLAY with rare rootlets. Sand is fine to medium.			
					(0.75)				
3.00-3.45	SPT N=0		Water strike(1) at 3.00m. 1,0/0,0,0,0		3.20	Greyish brown silty clayey GRAVEL comprising mudstone and sandstone. Gravel is fine to medium, subangular. Strata is noted to be wet.			
3.20	PP 67.4kPa				(0.40)				
3.60-4.00	ES PID=0.1ppm				3.60	Stiff consistency brown slightly gravelly sandy silty CLAY. Sand is fine to medium. Gravel is fine, subangular comprising mudstone and sandstone.			
4.00-4.45	SPT N=50		9,9/12,12,13,13		(0.85)				
					4.45	Terminated at 4.45m			

Remarks

Borehole was wet and stable.
Clay strata noted to be too soft for pocket penetrometer tests.

Scale
(approx)

1:50

Logged
By

RW

Figure No.

LKC 22 1142.WS103

Excavation Method

Drive-in Windowless Sampler

Dimensions
Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

Job
Number

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30-0.80	ES PID=0.1ppm				(0.30) 0.30	MADE GROUND: Reddish brown GRAVEL comprising brick fragments and limestone. Gravel is fine to medium, subangular.			
					(0.50) 0.80 (0.20) 1.00	MADE GROUND: Dark brown sandy GRAVEL comprising ash and concrete fragments. Sand is fine to coarse. Gravel is fine to medium, subangular.			
			Water strike(1) at 1.00m.			Soft consistency grey silty CLAY.			
1.20-1.65 1.20-1.65 1.50-2.00	SPT N=2 D D		1,0/1,0,0,1		(1.50)	Firm consistency gravelly very sandy silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subrounded to subangular comprising mudstone and sandstone.			
2.00-2.45 2.00-2.45	SPT N=16 D		3,3/3,3,5,5		2.50				
3.00 3.00-3.45 3.00-3.45	PP 55.59kPa SPT N=50 D		3,9/12,13,13,12		(0.95) 3.45	Stiff consistency medium strength brown gravelly silty CLAY. Gravel is fine, subangular comprising mudstone and sandstone.			
						Terminated at 3.45m			

Remarks

Borehole wet and stable.
Clay strata from 0.80mbgl to 1.00mbgl noted to be too soft for pocket penetrometer test.
SPT refusal on stiff clay.

Scale
(approx)

1:50

Logged
By

RW

Figure No.

LKC 22 1142.WS104

Excavation Method

Drive-in Windowless Sampler

Dimensions
Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

Job
Number
LKC 22 1142

Location
Dates

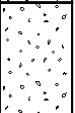
14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.60	ES PID=0.1ppm				(0.60)	MADE GROUND: Dark brown sandy SILT with frequent rootlets and rare glass (Reworked Topsoil). Sand is fine to medium.			
0.60-1.00	ES PID=0.1ppm				0.60				
1.00	PP 49.05kPa								
1.20-1.65	SPT N=12		3,3/3,3,3,3		(1.40)				
1.50-2.00	D								
2.00	PP 42.9kPa				2.00				
2.00-2.50	D		Water strike(1) at 2.00m.						
2.00-2.45	SPT N=14		2,2/3,3,4,4						
					(1.70)				
3.00-3.45	D		Water strike(2) at 3.00m.						
3.00-3.45	SPT N=26		3,4/5,5,7,9						
					3.70				
4.00-4.45	SPT N=50		7,7/10,15,15,10		(0.75)	Very dense brown sandy GRAVEL comprising sandstone with geothite (possible cobble). Gravel is fine to medium, subangular.			
					4.45	Terminated at 4.45m			

Remarks

Borehole wet and stable.
Refusal on possible sandstone cobble.

Scale
(approx)

1:50

Logged
By

RW

Figure No.

LKC 22 1142.WS105

Excavation Method

Machine excavated to 2.00mbgl.

Dimensions

0.6m x 2.0m x 2.0m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**
LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	ES PID=0.2ppm				(1.00)	MADE GROUND: Dark brown gravelly sandy SILT with frequent whole bricks, occasional glass, rare cobbles of concrete and metal. Sand is fine to medium. Gravel is fine to medium, subangular to subrounded comprising mudstone.		
1.00-2.00	D				1.00 (1.00)	Soft to firm consistency medium strength brown slightly gravelly silty CLAY. Gravel is fine to medium, subrounded to subangular comprising sandstone and mudstone. Sandstone cobbles present from 1.10mbgl to 1.20mbgl. Cobbles are angular.	× + × + × + × +	
2.00	SV 41.5kPa				2.00	Complete at 2.00m		


Remarks

Trial pit dry and stable.
Soakaway test carried out in pit. See separate sheet with corresponding name.

Scale (approx)

1:50

Logged By

RW

Figure No.

lkc 22 1142.TP101

Excavation Method

Machine excavated to
1.90mbgl.

Dimensions

0.6m x 2.0m x 1.9m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.70	ES PID=0.2ppm					MADE GROUND: Dark brown gravelly sandy SILT with frequent whole bricks, slate, rare ash. Sand is fine to medium. Gravel is fine to medium, subangular to subrounded comprising mudstone.		
0.70-1.90	D				(1.00)			
					1.00	Sandstone cobbles present from 0.80mbgl to 0.90mbgl. Cobbles are angular. Iron staining noted on surface of cobbles.		
					(0.90)	Soft to firm consistency low strength brown slightly gravelly silty CLAY. Gravel is fine to medium, subrounded to subangular comprising sandstone and mudstone.		
1.90	SV 38kPa				1.90	Complete at 1.90m		


Remarks

Trial pit dry and stable.
Soakaway test carried out in pit. See separate sheet with corresponding name.

Scale (approx)

1:50

Logged By

RW

Figure No.

lkc 22 1142.TP102

Excavation Method

Machine excavated to 1.80mbgl.

Dimensions

0.6m x 2.0m x 1.8m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10-0.50	ES PID=0.3ppm				0.10	MADE GROUND: Tarmacadam.		
0.50-1.50	ES PID=0.3ppm				(0.40)	MADE GROUND: Red GRAVEL comprising brick fragments. Gravel is fine to coarse, subangular.		
					0.50			
					(1.00)	Soft consistency low strength brown very gravelly sandy silty CLAY with low cobble content. Sand is fine to medium. Gravel is fine to coarse, angular to subangular comprising sandstone and mudstone. Sandstone cobbles present from 0.80mbgl to 0.90mbgl. Cobbles are angular. Iron staining noted on surface of cobbles.		
1.50	SV 34kPa DB				1.50			
1.50-1.80					(0.30)	Soft consistency brown slightly gravelly very sandy silty CLAY. Sand is fine to medium. Gravel is fine to medium, subangular to subrounded comprising mudstone and sandstone.		
					1.80			
						Complete at 1.80m		


Remarks

Trial pit dry and stable.
Soakaway test carried out in pit. See separate sheet with corresponding name.
Clay strata from 1.5-1.8mbgl noted to be too soft for shear vane test.

Scale (approx)

1:50

Logged By

RW

Figure No.

lkc 22 1142.TP103

Excavation Method

Machine excavated to
1.90mbgl.

Dimensions

0.6m x 2.0m x 1.9m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

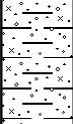
14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.50	ES PID=0.3ppm				(0.50)	MADE GROUND: Brown GRAVEL comprising concrete fragments, brick fragments and limestone (compact). Gravel is fine to medium, subangular.		
0.50-1.40	ES PID=0.5ppm				0.50 (0.90)	Soft consistency medium strength grey gravelly sandy silty CLAY. Sand is fine to medium. Gravel is fine to coarse, subangular to subrounded comprising mudstone and sandstone.		
1.40 1.40-1.90	SV 46kPa DB		Water strike(1) at 1.50m.		1.40 (0.50) 1.90	Grey sandy silty sandy GRAVEL comprising mudstone and sandstone. Sand is fine to coarse. Gravel is fine to medium, subangular to subrounded comprising mudstone and sandstone. Terminated at 1.90m		∇1


Remarks

Trial pit terminated due to instability.
Trial pit wet and unstable.

Scale (approx)

1:50

Logged By

RW

Figure No.

LKC 22 1142.TP104

Excavation Method

Machine excavated to 2.60mbgl.

Dimensions

0.6m x 2.0m x 2.6m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.40	ES PID=0.4ppm				(1.40)	MADE GROUND: Dark brown very gravelly sandy SILT with abundant whole bricks, frequent pottery, ash, timber, occasional rootlets and rare glass. Sand is fine to medium. Gravel is fine to medium, subangular comprising brick fragments and mudstone.		
1.40-2.40	D				1.40 (1.00)	Very soft consistency orangish brown gravelly sandy silty CLAY. Sand is fine to medium. Gravel is fine to medium, subangular to subrounded comprising mudstone and sandstone.		
2.40-2.60	B		Water strike(1) at 2.50m.		2.40 (0.20) 2.60	Greyish brown GRAVEL comprising mudstone and sandstone. Gravel is fine to coarse, rounded to subangular. Terminated at 2.60m		V1


Remarks

Trial pit was wet and unstable.
Clay strata noted to be too soft for shear vane test.

Scale (approx)

1:50

Logged By

RW

Figure No.

LKC 22 1142.TP105

Excavation Method

Machine excavated to 3.10mbgl.

Dimensions

0.6m x 2.0m x 3.1m

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.70	ES PID=0.1ppm				(1.70)	MADE GROUND: Dark brown sandy GRAVEL comprising whole bricks with occasional parts of brick walls, concrete cobbles, rare plastic, broken wires and plastic bags. Sand is fine to coarse. Gravel is fine to coarse, subangular.		
1.70-2.70	ES PID=0.5ppm				1.70 (1.00)	MADE GROUND: Soft consistency dark grey silty CLAY with plant matter (reworked).		
2.70-3.10 2.70-3.10	B ES PID=0.6ppm				2.70 (0.40) 3.10	Dark grey sandy GRAVEL comprising mudstone and sandstone. Gravel is fine to coarse, rounded to subangular.		
						Terminated at 3.10m		


Remarks

Trial pit dry and stable.
Clay strata noted to be too soft for shear vane test.

Scale (approx)

1:50

Logged By

RW

Figure No.

LKC 22 1142.TP106

Excavation Method

Machine excavated to 2.60mbgl.

Dimensions

0.6m x 2.0m x 2.6

Ground Level (mOD)
Client

Keystone Projects (Hawkshaw) Ltd

**Job
Number**

LKC 22 1142

Location
Dates

14/02/2023

Engineer

LKC

Sheet

1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.30	ES PID=0.3ppm				(1.30)	MADE GROUND: Dark brown sandy GRAVEL comprising whole bricks, concrete cobbles with occasional parts of brick walls, ash, sandstone setss. Sand is fine to medium. Gravel is fine to coarse, subangular.		
1.30-2.00	ES PID=0.5ppm				1.30 (0.70)	Sandstone cobble setts noted at 1.30mbgl. Soft consistency low strength very sandy silty CLAY. Sand is fine to coarse.		
2.00 2.00-2.60	SV 40kPa D				2.00 (0.60)	Stiff consistency medium strength gravelly very sandy silty CLAY. Sand is fine to coarse.		
2.60	SV 61.5kPa				2.60	Terminated at 2.60m		


Remarks

Trial pit was dry and stable.

Scale (approx)

1:50

Logged By

RW

Figure No.

LKC 22 1142.TP107

Appendix C

Certificates of Analysis – Soil



Rachel Peart
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

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

DETS Report No: 23-03302

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Sample Receipt Date: 09/03/2023

Sample Scheduled Date: 09/03/2023

Report Issue Number: 1

Reporting Date: 14/03/2023

Authorised by:

Dave Ashworth
Technical Manager

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

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-03302	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP106				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.70				
Reporting Date: 14/03/2023	DETS Sample No	639723				

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	ISO17025	< 0.1				
Acenaphthylene	mg/kg	< 0.1	ISO17025	< 0.1				
Acenaphthene	mg/kg	< 0.1	ISO17025	0.18				
Fluorene	mg/kg	< 0.1	ISO17025	< 0.1				
Phenanthrene	mg/kg	< 0.1	ISO17025	1.04				
Anthracene	mg/kg	< 0.1	ISO17025	0.24				
Fluoranthene	mg/kg	< 0.1	ISO17025	1.54				
Pyrene	mg/kg	< 0.1	ISO17025	1.36				
Benzo(a)anthracene	mg/kg	< 0.1	ISO17025	0.58				
Chrysene	mg/kg	< 0.1	ISO17025	0.55				
Benzo(b)fluoranthene	mg/kg	< 0.1	ISO17025	0.53				
Benzo(k)fluoranthene	mg/kg	< 0.1	ISO17025	0.20				
Benzo(a)pyrene	mg/kg	< 0.1	ISO17025	0.44				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	ISO17025	0.21				
Dibenz(a,h)anthracene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	ISO17025	0.20				
Total EPA-16 PAHs	mg/kg	< 1.6	ISO17025	7.1				

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 23-03302	
LK Consult Limited	
Site Reference: Holly Mount Farm, Bury	
Project / Job Ref: LKC 22 1142	
Order No: LKC 22 1142-RP	
Reporting Date: 14/03/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
\$ 639723	TP106	ES	0.00 - 1.70	20.1	Brown sandy gravel with stones and concrete

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

Insufficient Sample ¹/s

Unsuitable Sample ^u/s

\$ samples exceeded recommended holding times



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-03302

LK Consult Limited

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Reporting Date: 14/03/2023

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

D Dried
AR As Received



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

**List of HWOL Acronyms and Operators****DETS Report No: 23-03302****LK Consult Limited****Site Reference: Holly Mount Farm, Bury****Project / Job Ref: LKC 22 1142****Order No: LKC 22 1142-RP****Reporting Date: 14/03/2023**

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

Det - Acronym



Rachel Peart
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

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

DETS Report No: 23-02184

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Sample Receipt Date: 17/02/2023

Sample Scheduled Date: 17/02/2023

Report Issue Number: 1

Reporting Date: 27/02/2023

Authorised by:

Dave Ashworth
Technical Manager

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

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23	15/02/23	15/02/23	15/02/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws101	ws101	ws102	ws102	ws103
Project / Job Ref: LKC 22 1142	Additional Refs	es	es	es	es	es
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 0.60	1.65 - 2.00	0.00 - 1.00	1.00 - 1.50	0.00 - 1.00
Reporting Date: 27/02/2023	DETS Sample No	635291	635292	635293	635294	635295

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Detected		Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE	Amosite present as fibre bundles			
Asbestos Type ^(S)	PLM Result	N/a	ISO17025	Amosite			
Asbestos Quantification ^(S)	%	< 0.001	ISO17025	< 0.001			
pH	pH Units	N/a	MCERTS	8.2	8.1	7.7	7.5
Total Cyanide	mg/kg	< 1	NONE				
Free Cyanide	mg/kg	< 1	NONE				
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	51	41	18	19
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.05	0.04	0.02	0.02
Organic Matter (SOM)	%	< 0.1	MCERTS	5.1	5.5		16.4
W/S Chloride (2:1)	mg/kg	< 1	MCERTS			39	
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS			19.3	
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS			< 3	
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS			< 1.5	
Arsenic (As)	mg/kg	< 2	MCERTS	11	6		28
W/S Boron	mg/kg	< 1	NONE				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	< 0.2		0.9
Chromium (Cr)	mg/kg	< 2	MCERTS	15	19		20
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		< 2
Copper (Cu)	mg/kg	< 4	MCERTS	38	36		106
Lead (Pb)	mg/kg	< 3	MCERTS	146	29		378
W/S Magnesium	mg/l	< 0.1	NONE			2.1	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	16	13		30
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2		< 2
Vanadium (V)	mg/kg	< 1	MCERTS	23	55		45
Zinc (Zn)	mg/kg	< 3	MCERTS	73	73		230
Total Phenols (monohydric)	mg/kg	< 1	NONE				

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23	15/02/23	15/02/23	
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws103	ws103	ws104	ws105	
Project / Job Ref: LKC 22 1142	Additional Refs	es	es	es	es	
Order No: LKC 22 1142-RP	Depth (m)	1.50 - 2.00	2.00 - 2.60	0.30 - 0.80	0.00 - 0.60	
Reporting Date: 27/02/2023	DETS Sample No	635296	635297	635298	635299	

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected		Not Detected	Not Detected
Sample Matrix ^(S)	Material Type	N/a	NONE				
Asbestos Type ^(S)	PLM Result	N/a	ISO17025				
Asbestos Quantification ^(S)	%	< 0.001	ISO17025				
pH	pH Units	N/a	MCERTS	8.8		7.8	5.8
Total Cyanide	mg/kg	< 1	NONE	< 1			
Free Cyanide	mg/kg	< 1	NONE	< 1			
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	26		19	< 10
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.03		0.02	< 0.01
Organic Matter (SOM)	%	< 0.1	MCERTS	2.1	2.5	7.4	4.3
W/S Chloride (2:1)	mg/kg	< 1	MCERTS				
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS				
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS				
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS				
Arsenic (As)	mg/kg	< 2	MCERTS	< 2		9	13
W/S Boron	mg/kg	< 1	NONE	< 1			
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2		< 0.2	0.3
Chromium (Cr)	mg/kg	< 2	MCERTS	14		11	16
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	19		41	40
Lead (Pb)	mg/kg	< 3	MCERTS	15		47	152
W/S Magnesium	mg/l	< 0.1	NONE				
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	13		18	13
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	15		22	25
Zinc (Zn)	mg/kg	< 3	MCERTS	43		67	154
Total Phenols (monohydric)	mg/kg	< 1	NONE	< 2			

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23	15/02/23	15/02/23	15/02/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws101	ws102	ws103	ws103	ws104
Project / Job Ref: LKC 22 1142	Additional Refs	es	es	es	es	es
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 0.60	0.00 - 1.00	0.00 - 1.00	1.50 - 2.00	0.30 - 0.80
Reporting Date: 27/02/2023	DETS Sample No	635291	635293	635295	635296	635298

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	0.17	0.18	0.19	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.43	< 0.1	0.33	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	0.26	< 0.1	0.31	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	3.07	1.11	4.02	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	0.59	0.44	0.81	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	4.28	2.25	5.79	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	4.33	2.04	5.43	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	2.08	1.14	2.81	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	1.81	1.41	2.36	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.20	2.08	3.64	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.79	1.17	1.51	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	2.29	3.25	3.65	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	1.02	1.35	2.07	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.14	< 0.1	0.19	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.79	0.92	1.33	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	24.2	17.3	34.5	< 1.6	< 1.6



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-02184	Date Sampled	15/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws105				
Project / Job Ref: LKC 22 1142	Additional Refs	es				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 0.60				
Reporting Date: 27/02/2023	DETS Sample No	635299				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1			
Phenanthrene	mg/kg	< 0.1	MCERTS	0.39			
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Fluoranthene	mg/kg	< 0.1	MCERTS	0.83			
Pyrene	mg/kg	< 0.1	MCERTS	0.75			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.40			
Chrysene	mg/kg	< 0.1	MCERTS	0.46			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.60			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.25			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.53			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.34			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.23			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	4.8			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-02184	Date Sampled	15/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws103				
Project / Job Ref: LKC 22 1142	Additional Refs	es				
Order No: LKC 22 1142-RP	Depth (m)	2.00 - 2.60				
Reporting Date: 27/02/2023	DETS Sample No	635297				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	0.27			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH LQM Banded

DETS Report No: 23-02184	Date Sampled	15/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws103				
Project / Job Ref: LKC 22 1142	Additional Refs	es				
Order No: LKC 22 1142-RP	Depth (m)	1.50 - 2.00				
Reporting Date: 27/02/2023	DETS Sample No	635296				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10			
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10			
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10			
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10			
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30			
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 60	NONE	< 60			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23			
LK Consult Limited	Time Sampled	None Supplied	None Supplied			
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws103	ws103			
Project / Job Ref: LKC 22 1142	Additional Refs	es	es			
Order No: LKC 22 1142-RP	Depth (m)	1.50 - 2.00	2.00 - 2.60			
Reporting Date: 27/02/2023	DETS Sample No	635296	635297			

Determinand	Unit	RL	Accreditation			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	11	270	
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	3	< 2	
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Organochlorine Pesticides						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23			
LK Consult Limited	Time Sampled	None Supplied	None Supplied			
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws101	ws102			
Project / Job Ref: LKC 22 1142	Additional Refs	es	es			
Order No: LKC 22 1142-RP	Depth (m)	1.65 - 2.00	1.00 - 1.50			
Reporting Date: 27/02/2023	DETS Sample No	635292	635294			

Determinand	Unit	RL	Accreditation			
Aldrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
alpha-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
beta-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
cis-chlordane	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
delta-HCH	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Dieldrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Endosulfan A	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Endosulfan B	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Endrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
gamma-HCH (Lindane)	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Heptachlor	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Heptachlor epoxide	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Hexachlorobenzene (HCB)	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Isodrin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Methoxychlor	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
o,p' - DDD	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
o,p' - DDE	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
o,p' - DDT	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
p,p' - DDD	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
p,p' - DDE	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
p,p' - DDT	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
trans-chlordane	mg/kg	< 0.02	NONE	< 0.02	< 0.02	
Trifluralin	mg/kg	< 0.02	NONE	< 0.02	< 0.02	



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Organophosphorus Pesticides						
DETS Report No: 23-02184	Date Sampled	15/02/23	15/02/23			
LK Consult Limited	Time Sampled	None Supplied	None Supplied			
Site Reference: Holly Mount Farm, Bury	TP / BH No	ws101	ws102			
Project / Job Ref: LKC 22 1142	Additional Refs	es	es			
Order No: LKC 22 1142-RP	Depth (m)	1.65 - 2.00	1.00 - 1.50			
Reporting Date: 27/02/2023	DETS Sample No	635292	635294			

Determinand	Unit	RL	Accreditation					
Azinphos-methyl	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Chlorfenvinphos, alpha	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Chlorfenvinphos, beta	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Chlorpyrifos-methyl	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Diazinon	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Dichlorvos	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Dimethoate	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Fenitrothion	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Fenthion	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Malathion	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Mevinphos, (E)	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Mevinphos, (Z)	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Parathion-ethyl	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Parathion-methyl	mg/kg	< 0.1	NONE	< 0.1	< 0.1			
Phorate	mg/kg	< 0.1	NONE	< 0.1	< 0.1			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-02184	
LK Consult Limited	
Site Reference: Holly Mount Farm, Bury	
Project / Job Ref: LKC 22 1142	
Order No: LKC 22 1142-RP	
Reporting Date: 27/02/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
635291	ws101	es	0.00 - 0.60	13	Brown loamy sand with stones and concrete
635292	ws101	es	1.65 - 2.00	23.9	Grey loamy sand
635293	ws102	es	0.00 - 1.00	10.6	Black loamy sand with stones and concrete
635294	ws102	es	1.00 - 1.50	18.4	Black loamy sand with stones
635295	ws103	es	0.00 - 1.00	28	Black loamy sand
635296	ws103	es	1.50 - 2.00	19.5	Black loamy sand with stones
635297	ws103	es	2.00 - 2.60	16.5	Black loamy clay
635298	ws104	es	0.30 - 0.80	17.8	Brown sandy clay with stones and brick
635299	ws105	es	0.00 - 0.60	20.1	Brown sandy clay with stones

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

Insufficient Sample ^{1/s}

Unsuitable Sample ^{u/s}



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-02184

LK Consult Limited

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Reporting Date: 27/02/2023

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

D Dried
AR As Received



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators

DETS Report No: 23-02184

LK Consult Limited

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Reporting Date: 27/02/2023

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

Det - Acronym

Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
TPH LQM - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH LQM - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH LQM - Aliphatic >C16 - C35 - EH_CU_1D_AL
TPH LQM - Aliphatic >C35 - C44 - EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH LQM - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH LQM - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH LQM - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH LQM - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH LQM - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH LQM - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH LQM - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH LQM - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH LQM - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS



Rachel Peart
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

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

DETS Report No: 23-02125

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Sample Receipt Date: 16/02/2023

Sample Scheduled Date: 16/02/2023

Report Issue Number: 1

Reporting Date: 23/02/2023

Authorised by:

Dave Ashworth
Technical Manager

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

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-02125	Date Sampled	14/02/23	14/02/23	14/02/23	14/02/23	14/02/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP101	TP102	TP103	TP103	TP104
Project / Job Ref: LKC 22 1142	Additional Refs	ES	ES	ES	ES	ES
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.00	0.00 - 0.70	0.00 - 0.50	0.50 - 1.50	0.00 - 0.50
Reporting Date: 23/02/2023	DETS Sample No	634988	634989	634990	634991	634992

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected		Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.4		7.5	7.5
Total Cyanide	mg/kg	< 1	NONE				
Free Cyanide	mg/kg	< 1	NONE				
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	24		15	21
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02		0.01	0.02
Organic Matter (SOM)	%	< 0.1	MCERTS	4.5		4	2.3
W/S Chloride (2:1)	mg/kg	< 1	MCERTS				22
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS				10.8
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS				4
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS				2.2
Arsenic (As)	mg/kg	< 2	MCERTS	9		19	4
W/S Boron	mg/kg	< 1	NONE				
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.4		0.4	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	13		12	11
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	26		36	18
Lead (Pb)	mg/kg	< 3	MCERTS	105		413	31
W/S Magnesium	mg/l	< 0.1	NONE				2.7
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	12		12	12
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	21		25	16
Zinc (Zn)	mg/kg	< 3	MCERTS	64		61	45
Total Phenols (monohydric)	mg/kg	< 1	NONE				

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-02125	Date Sampled	14/02/23	14/02/23	14/02/23	14/02/23	
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP104	TP105	TP106	TP107	
Project / Job Ref: LKC 22 1142	Additional Refs	ES	ES	ES	ES	
Order No: LKC 22 1142-RP	Depth (m)	0.50 - 1.40	0.00 - 1.40	0.00 - 1.70	0.00 - 1.30	
Reporting Date: 23/02/2023	DETS Sample No	634993	634994	634995	634996	

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025		Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	6.8	7.3	7.4	7.7
Total Cyanide	mg/kg	< 1	NONE			< 1	
Free Cyanide	mg/kg	< 1	NONE			< 1	
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	11	24	1430	287
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.01	0.02	1.43	0.29
Organic Matter (SOM)	%	< 0.1	MCERTS		9.4	4.9	5
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	86			
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	42.9			
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	< 3	MCERTS	4			
Water Soluble Nitrate (2:1) as NO ₃	mg/l	< 1.5	MCERTS	2.1			
Arsenic (As)	mg/kg	< 2	MCERTS		30	15	12
W/S Boron	mg/kg	< 1	NONE			< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		0.7	0.5	0.6
Chromium (Cr)	mg/kg	< 2	MCERTS		28	17	15
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS		60	34	37
Lead (Pb)	mg/kg	< 3	MCERTS		79	429	95
W/S Magnesium	mg/l	< 0.1	NONE	3.5			
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		13	12	16
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS		27	21	24
Zinc (Zn)	mg/kg	< 3	MCERTS		253	198	110
Total Phenols (monohydric)	mg/kg	< 1	NONE			< 2	

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-02125	Date Sampled	14/02/23	14/02/23	14/02/23	14/02/23	14/02/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP101	TP103	TP104	TP105	TP107
Project / Job Ref: LKC 22 1142	Additional Refs	ES	ES	ES	ES	ES
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.00	0.00 - 0.50	0.00 - 0.50	0.00 - 1.40	0.00 - 1.30
Reporting Date: 23/02/2023	DETS Sample No	634988	634990	634992	634994	634996

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.21
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.23
Phenanthrene	mg/kg	< 0.1	MCERTS	0.57	0.26	< 0.1	0.45	1.17
Anthracene	mg/kg	< 0.1	MCERTS	0.14	< 0.1	< 0.1	0.12	0.32
Fluoranthene	mg/kg	< 0.1	MCERTS	1.05	0.74	0.17	1.34	1.90
Pyrene	mg/kg	< 0.1	MCERTS	0.95	0.71	0.17	1.33	1.63
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.55	0.53	< 0.1	0.88	0.99
Chrysene	mg/kg	< 0.1	MCERTS	0.45	0.41	< 0.1	0.62	0.68
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.52	0.64	< 0.1	0.88	0.84
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.19	0.23	< 0.1	0.37	0.32
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.46	0.60	< 0.1	0.88	0.76
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.30	0.38	< 0.1	0.46	0.36
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.26	0.32	< 0.1	0.39	0.30
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	5.4	4.8	< 1.6	7.7	9.7



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP106				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.70				
Reporting Date: 23/02/2023	DETS Sample No	634995				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01			
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05			
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2			
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3			
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21			
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01			
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05			
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2			
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	4			
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP106				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.70				
Reporting Date: 23/02/2023	DETS Sample No	634995				

Determinand	Unit	RL	Accreditation				
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5			
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Volatile Organic Compounds (VOC)

DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP106				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.70				
Reporting Date: 23/02/2023	DETS Sample No	634995				

Determinand	Unit	RL	Accreditation				
Dichlorodifluoromethane	ug/kg	< 5	MCERTS	< 5			
Vinyl Chloride	ug/kg	< 5	MCERTS	< 5			
Chloromethane	ug/kg	< 10	MCERTS	< 10			
Chloroethane	ug/kg	< 5	MCERTS	< 5			
Bromomethane	ug/kg	< 10	MCERTS	< 10			
Trichlorofluoromethane	ug/kg	< 5	MCERTS	< 5			
1,1-Dichloroethene	ug/kg	< 5	MCERTS	< 5			
MTBE	ug/kg	< 5	MCERTS	< 5			
trans-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5			
1,1-Dichloroethane	ug/kg	< 5	MCERTS	< 5			
cis-1,2-Dichloroethene	ug/kg	< 5	MCERTS	< 5			
2,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5			
Chloroform	ug/kg	< 5	MCERTS	< 5			
Bromochloromethane	ug/kg	< 5	MCERTS	< 5			
1,1,1-Trichloroethane	ug/kg	< 5	MCERTS	< 5			
1,1-Dichloropropene	ug/kg	< 10	MCERTS	< 10			
Carbon Tetrachloride	ug/kg	< 5	MCERTS	< 5			
1,2-Dichloroethane	ug/kg	< 5	MCERTS	< 5			
Benzene	ug/kg	< 2	MCERTS	< 2			
1,2-Dichloropropane	ug/kg	< 5	MCERTS	< 5			
Trichloroethene	ug/kg	< 5	MCERTS	< 5			
Bromodichloromethane	ug/kg	< 5	MCERTS	< 5			
Dibromomethane	ug/kg	< 5	MCERTS	< 5			
TAME	ug/kg	< 5	MCERTS	< 5			
cis-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5			
Toluene	ug/kg	< 5	MCERTS	< 5			
trans-1,3-Dichloropropene	ug/kg	< 5	MCERTS	< 5			
1,1,2-Trichloroethane	ug/kg	< 10	MCERTS	< 10			
1,3-Dichloropropane	ug/kg	< 5	MCERTS	< 5			
Tetrachloroethene	ug/kg	< 5	MCERTS	< 5			
Dibromochloromethane	ug/kg	< 5	MCERTS	< 5			
1,2-Dibromoethane	ug/kg	< 5	MCERTS	< 5			
Chlorobenzene	ug/kg	< 5	MCERTS	< 5			
1,1,1,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5			
Ethyl Benzene	ug/kg	< 2	MCERTS	< 2			
m,p-Xylene	ug/kg	< 2	MCERTS	< 2			
o-Xylene	ug/kg	< 2	MCERTS	< 2			
Styrene	ug/kg	< 5	MCERTS	< 5			
Bromoform	ug/kg	< 10	MCERTS	< 10			
Isopropylbenzene	ug/kg	< 5	MCERTS	< 5			
1,1,2,2-Tetrachloroethane	ug/kg	< 5	MCERTS	< 5			
1,2,3-Trichloropropane	ug/kg	< 5	MCERTS	< 5			
n-Propylbenzene	ug/kg	< 5	MCERTS	< 5			
Bromobenzene	ug/kg	< 5	MCERTS	< 5			
2-Chlorotoluene	ug/kg	< 5	MCERTS	< 5			
1,3,5-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5			
4-Chlorotoluene	ug/kg	< 5	MCERTS	< 5			
tert-Butylbenzene	ug/kg	< 5	MCERTS	< 5			
1,2,4-Trimethylbenzene	ug/kg	< 5	MCERTS	< 5			
sec-Butylbenzene	ug/kg	< 5	MCERTS	< 5			
p-Isopropyltoluene	ug/kg	< 5	MCERTS	< 5			
1,3-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5			
1,4-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5			
n-Butylbenzene	ug/kg	< 5	MCERTS	< 5			
1,2-Dichlorobenzene	ug/kg	< 5	MCERTS	< 5			
1,2-Dibromo-3-chloropropane	ug/kg	< 10	MCERTS	< 10			
Hexachlorobutadiene	ug/kg	< 5	MCERTS	< 5			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Semi Volatile Organic Compounds (SVOC)						
DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP106				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 1.70				
Reporting Date: 23/02/2023	DETS Sample No	634995				

Determinand	Unit	RL	Accreditation				
Phenol	mg/kg	< 0.1	NONE	< 0.1			
1,2,4-Trichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1			
2-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1			
Nitrobenzene	mg/kg	< 0.1	MCERTS	< 0.1			
0-Cresol	mg/kg	< 0.1	NONE	< 0.1			
bis(2-chloroethoxy)methane	mg/kg	< 0.1	MCERTS	< 0.1			
bis(2-chloroethyl)ether	mg/kg	< 0.1	MCERTS	< 0.1			
2,4-Dichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1			
2-Chlorophenol	mg/kg	< 0.1	ISO17025	< 0.1			
1,3-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1			
1,4-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1			
1,2-Dichlorobenzene	mg/kg	< 0.1	ISO17025	< 0.1			
2,4-Dimethylphenol	mg/kg	< 0.15	ISO17025	< 0.15			
Isophorone	mg/kg	< 0.1	NONE	< 0.1			
Hexachloroethane	mg/kg	< 0.1	MCERTS	< 0.1			
p-Cresol	mg/kg	< 0.15	MCERTS	< 0.15			
2,4,6-Trichlorophenol	mg/kg	< 0.1	MCERTS	< 0.1			
2,4,5-Trichlorophenol	mg/kg	< 0.15	MCERTS	< 0.15			
2-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1			
4-Chloro-3-methylphenol	mg/kg	< 0.1	NONE	< 0.1			
2-Methylnaphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Hexachlorocyclopentadiene	mg/kg	< 0.1	NONE	< 0.1			
Hexachlorobutadiene	mg/kg	< 0.1	ISO17025	< 0.1			
2,6-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1			
Dimethyl phthalate	mg/kg	< 0.1	NONE	< 0.1			
2-Chloronaphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
4-Chloroaniline	mg/kg	< 0.15	NONE	< 0.15			
4-Nitrophenol	mg/kg	< 0.1	NONE	< 0.1			
4-Chlorophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1			
3-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1			
4-Nitroaniline	mg/kg	< 0.1	NONE	< 0.1			
4-Bromophenyl phenyl ether	mg/kg	< 0.1	MCERTS	< 0.1			
Hexachlorobenzene	mg/kg	< 0.1	MCERTS	< 0.1			
2,4-Dinitrotoluene	mg/kg	< 0.1	MCERTS	< 0.1			
Diethyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1			
Dibenzofuran	mg/kg	< 0.1	MCERTS	< 0.1			
Azobenzene	mg/kg	< 0.1	NONE	< 0.1			
Dibutyl phthalate	mg/kg	< 0.1	ISO17025	< 0.1			
Carbazole	mg/kg	< 0.1	ISO17025	< 0.1			
bis(2-ethylhexyl)phthalate	mg/kg	< 0.15	ISO17025	< 0.15			
Benzyl butyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1			
Di-n-octyl phthalate	mg/kg	< 0.1	MCERTS	< 0.1			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Organochlorine Pesticides						
DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP102				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 0.70				
Reporting Date: 23/02/2023	DETS Sample No	634989				

Determinand	Unit	RL	Accreditation				
Aldrin	mg/kg	< 0.02	NONE	< 0.02			
alpha-HCH	mg/kg	< 0.02	NONE	< 0.02			
beta-HCH	mg/kg	< 0.02	NONE	< 0.02			
cis-chlordane	mg/kg	< 0.02	NONE	< 0.02			
delta-HCH	mg/kg	< 0.02	NONE	< 0.02			
Dieldrin	mg/kg	< 0.02	NONE	< 0.02			
Endosulfan A	mg/kg	< 0.02	NONE	< 0.02			
Endosulfan B	mg/kg	< 0.02	NONE	< 0.02			
Endrin	mg/kg	< 0.02	NONE	< 0.02			
gamma-HCH (Lindane)	mg/kg	< 0.02	NONE	< 0.02			
Heptachlor	mg/kg	< 0.02	NONE	< 0.02			
Heptachlor epoxide	mg/kg	< 0.02	NONE	< 0.02			
Hexachlorobenzene (HCB)	mg/kg	< 0.02	NONE	< 0.02			
Isodrin	mg/kg	< 0.02	NONE	< 0.02			
Methoxychlor	mg/kg	< 0.02	NONE	< 0.02			
o,p' - DDD	mg/kg	< 0.02	NONE	< 0.02			
o,p' - DDE	mg/kg	< 0.02	NONE	< 0.02			
o,p' - DDT	mg/kg	< 0.02	NONE	< 0.02			
p,p' - DDD	mg/kg	< 0.02	NONE	< 0.02			
p,p' - DDE	mg/kg	< 0.02	NONE	< 0.02			
p,p' - DDT	mg/kg	< 0.02	NONE	< 0.02			
trans-chlordane	mg/kg	< 0.02	NONE	< 0.02			
Trifluralin	mg/kg	< 0.02	NONE	< 0.02			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate - Organophosphorus Pesticides						
DETS Report No: 23-02125	Date Sampled	14/02/23				
LK Consult Limited	Time Sampled	None Supplied				
Site Reference: Holly Mount Farm, Bury	TP / BH No	TP102				
Project / Job Ref: LKC 22 1142	Additional Refs	ES				
Order No: LKC 22 1142-RP	Depth (m)	0.00 - 0.70				
Reporting Date: 23/02/2023	DETS Sample No	634989				

Determinand	Unit	RL	Accreditation				
Azinphos-methyl	mg/kg	< 0.1	NONE	< 0.1			
Chlorfenvinphos, alpha	mg/kg	< 0.1	NONE	< 0.1			
Chlorfenvinphos, beta	mg/kg	< 0.1	NONE	< 0.1			
Chlorpyrifos-methyl	mg/kg	< 0.1	NONE	< 0.1			
Diazinon	mg/kg	< 0.1	NONE	< 0.1			
Dichlorvos	mg/kg	< 0.1	NONE	< 0.1			
Dimethoate	mg/kg	< 0.1	NONE	< 0.1			
Fenitrothion	mg/kg	< 0.1	NONE	< 0.1			
Fenthion	mg/kg	< 0.1	NONE	< 0.1			
Malathion	mg/kg	< 0.1	NONE	< 0.1			
Mevinphos, (E)	mg/kg	< 0.1	NONE	< 0.1			
Mevinphos, (Z)	mg/kg	< 0.1	NONE	< 0.1			
Parathion-ethyl	mg/kg	< 0.1	NONE	< 0.1			
Parathion-methyl	mg/kg	< 0.1	NONE	< 0.1			
Phorate	mg/kg	< 0.1	NONE	< 0.1			



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions

DETS Report No: 23-02125	
LK Consult Limited	
Site Reference: Holly Mount Farm, Bury	
Project / Job Ref: LKC 22 1142	
Order No: LKC 22 1142-RP	
Reporting Date: 23/02/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
634988	TP101	ES	0.00 - 1.00	12.7	Brown sandy clay with stones and brick
634989	TP102	ES	0.00 - 0.70	23.3	Black sandy clay with stones
634990	TP103	ES	0.00 - 0.50	13.7	Brown sandy clay with stones and concrete
634991	TP103	ES	0.50 - 1.50	13.9	Brown sandy clay with stones
634992	TP104	ES	0.00 - 0.50	9.8	Brown sandy clay with stones and concrete
634993	TP104	ES	0.50 - 1.40	15.4	Grey sandy clay
634994	TP105	ES	0.00 - 1.40	15.5	Black sandy clay with stones
634995	TP106	ES	0.00 - 1.70	17.9	Brown loamy sand with stones and concrete
634996	TP107	ES	0.00 - 1.30	12.3	Black sandy clay with stones and concrete

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

Insufficient Sample ^{1/s}

Unsuitable Sample ^{u/s}



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-02125

LK Consult Limited

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Reporting Date: 23/02/2023

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

D Dried
AR As Received



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators
DETS Report No: 23-02125
LK Consult Limited
Site Reference: Holly Mount Farm, Bury
Project / Job Ref: LKC 22 1142
Order No: LKC 22 1142-RP
Reporting Date: 23/02/2023

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

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Appendix D

Certificates of Analysis – Groundwater



Rachel Peart
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

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

DETS Report No: 23-02598

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Sample Receipt Date: 24/02/2023

Sample Scheduled Date: 24/02/2023

Report Issue Number: 1

Reporting Date: 09/03/2023

Authorised by:

Dave Ashworth
Technical Manager

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

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Water Analysis Certificate						
DETS Report No: 23-02598	Date Sampled	23/02/23	23/02/23	23/02/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Holly Mount Farm, Bury	TP / BH No	WS101	WS103	WS104		
Project / Job Ref: LKC 22 1142	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LKC 22 1142-RP	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 09/03/2023	DETS Sample No	636788	636789	636790		

Determinand	Unit	RL	Accreditation					
pH	pH Units	N/a	ISO17025	6.6	7.9	7.0		
Total Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5		
Free Cyanide	ug/l	< 5	NONE	< 5	< 5	< 5		
Sulphate as SO ₄	mg/l	< 1	ISO17025	95	24	2		
Dissolved Organic Carbon (DOC)	mg/l	< 0.1	NONE	34.2	111	20.3		
Hardness - Total	mgCaCO ₃ /l	< 1	NONE	435	10.7	225		
Arsenic (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	< 5		
Boron (dissolved)	ug/l	< 5	ISO17025	59	7	46		
Cadmium (dissolved)	ug/l	< 0.4	ISO17025	< 0.4	< 0.4	< 0.4		
Chromium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	< 5		
Chromium (hexavalent)	ug/l	< 20	NONE	< 20	< 20	< 20		
Copper (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	< 5		
Lead (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	< 5		
Mercury (dissolved)	ug/l	< 0.05	ISO17025	< 0.05	< 0.05	< 0.05		
Nickel (dissolved)	ug/l	< 5	ISO17025	5	< 5	< 5		
Selenium (dissolved)	ug/l	< 5	ISO17025	< 5	< 5	< 5		
Vanadium (dissolved)	ug/l	< 5	ISO17025	< 5	5	< 5		
Zinc (dissolved)	ug/l	< 2	ISO17025	< 2	< 2	< 2		
Calcium (dissolved)	mg/l	< 0.2	ISO17025	155	1.3	82.4		
Total Phenols (monohydric)	ug/l	< 10	NONE	< 10	< 10	< 10		

Subcontracted analysis ^(S)
Insufficient sample ^{I/S}
Unsuitable Sample ^{U/S}



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Water Analysis Certificate - Speciated PAH						
DETS Report No: 23-02598	Date Sampled	23/02/23	23/02/23	23/02/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Holly Mount Farm, Bury	TP / BH No	WS101	WS103	WS104		
Project / Job Ref: LKC 22 1142	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LKC 22 1142-RP	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 09/03/2023	DETS Sample No	636788	636789	636790		

Determinand	Unit	RL	Accreditation					
Naphthalene	ug/l	< 0.01	NONE	0.05	0.04	< 0.01		
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Acenaphthene	ug/l	< 0.01	NONE	< 0.01	0.06	< 0.01		
Fluorene	ug/l	< 0.01	NONE	< 0.01	0.04	< 0.01		
Phenanthrene	ug/l	< 0.01	NONE	< 0.01	0.05	< 0.01		
Anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Fluoranthene	ug/l	< 0.01	NONE	< 0.01	0.04	< 0.01		
Pyrene	ug/l	< 0.01	NONE	< 0.01	0.05	< 0.01		
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Chrysene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	ug/l	0.008	NONE	< 0.008	< 0.008	< 0.008		
Total EPA-16 PAHs	ug/l	< 0.16	NONE	< 0.16	0.28	< 0.16		



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Water Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-02598	Date Sampled	23/02/23	23/02/23	23/02/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Holly Mount Farm, Bury	TP / BH No	WS101	WS103	WS104		
Project / Job Ref: LKC 22 1142	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LKC 22 1142-RP	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 09/03/2023	DETS Sample No	636788	636789	636790		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C16 - C35 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic >C35 - C44 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10	< 10	< 10		
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	ug/l	< 70	NONE	< 70	< 70	< 70		
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic >C35 - C44 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10	< 10	< 10		
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	ug/l	< 70	NONE	< 70	< 70	< 70		
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	ug/l	< 140	NONE	< 140	< 140	< 140		



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Water Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-02598	Date Sampled	23/02/23	23/02/23	23/02/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Holly Mount Farm, Bury	TP / BH No	WS101	WS103	WS104		
Project / Job Ref: LKC 22 1142	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LKC 22 1142-RP	Depth (m)	None Supplied	None Supplied	None Supplied		
Reporting Date: 09/03/2023	DETS Sample No	636788	636789	636790		

Determinand	Unit	RL	Accreditation				
Benzene : HS 1D MS	ug/l	< 1	ISO17025	< 1	< 1	< 1	
Toluene : HS 1D MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	
Ethylbenzene : HS 1D MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	
p & m-xylene : HS 1D MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	
o-xylene : HS 1D MS	ug/l	< 5	ISO17025	< 5	< 5	< 5	
MTBE : HS 1D MS	ug/l	< 10	ISO17025	< 10	< 10	< 10	



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Water Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-02598

LK Consult Limited

Site Reference: Holly Mount Farm, Bury

Project / Job Ref: LKC 22 1142

Order No: LKC 22 1142-RP

Reporting Date: 09/03/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR detection	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



List of HWOL Acronyms and Operators

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

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH LQM - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH LQM - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH LQM - Aliphatic >C16 - C35 - EH_CU_1D_AL
TPH LQM - Aliphatic >C35 - C44 - EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH LQM - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH LQM - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH LQM - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH LQM - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH LQM - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH LQM - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH LQM - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH LQM - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH LQM - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH LQM - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Appendix E

Certificate of Analysis – Geotechnical

TEST REPORT

Client LK Consult Ltd

Address Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Greater Manchester
M26 2ZS

Contract LKC 22 1142 -
Holly Mount Farm, Bury

Job Number MRN 4606/18
Date of Issue 07 March 2023
Page 1 of 6

Approved Signatories

S J Hutchings, O P Davies

Notes

- 1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.
- 2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.
- 3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.
- 4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.
- 5 The results included within the report are representative of the samples submitted for analysis.
- 6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.



Andrew House, Hadfield Street, Dukinfield, Cheshire SK16 4QX Tel: 0161 475 0870
Email: enquiries@murrayrix.com Website: www.murrayrix.com

Also at: London: 020 8523 1999

Murray Rix is the trading name of Murray Rix (Northern) Limited. Registered in England 2878361

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014

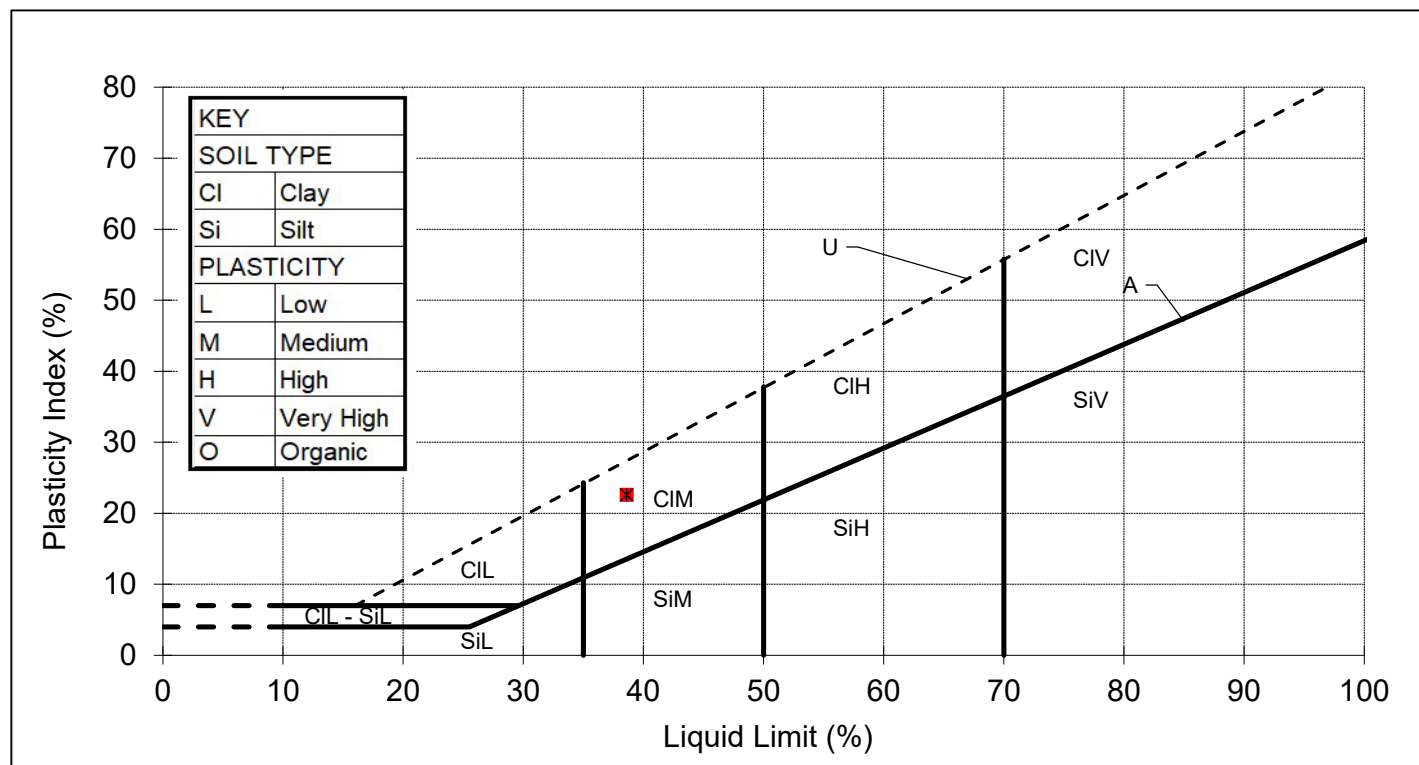
CLIENT	LK Consult Ltd
SITE	LKC 22 1142 - Holly Mount Farm, Bury
JOB NUMBER	MRN 4606/18

SAMPLE LABEL	WS104 1.5-2.0m	DATE SAMPLED	Not advised
SAMPLE No.	121737	DATE RECEIVED	22-Feb-23
DATE TESTED	24-Feb-23	SAMPLED BY	Client

MATERIAL	Stiff brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	20.2	38.9	0.998	
Determination 2 (avg)	20.2	38.5		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
22.8	39	16	23	90



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Laboratory Manager)

DATE

07-Mar-23

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014

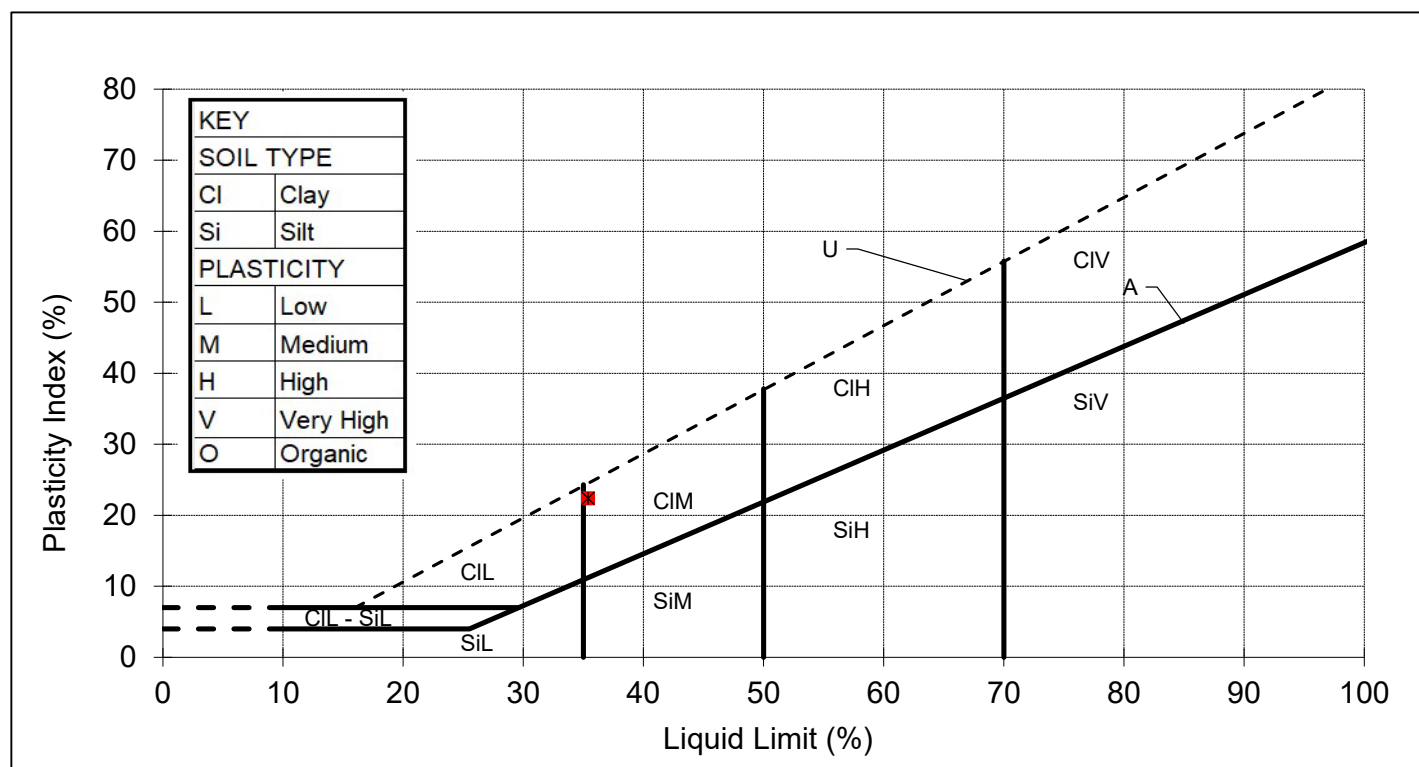
CLIENT	LK Consult Ltd
SITE	LKC 22 1142 - Holly Mount Farm, Bury
JOB NUMBER	MRN 4606/18

SAMPLE LABEL	TP103 0.5-1.5m	DATE SAMPLED	Not advised
SAMPLE No.	121739	DATE RECEIVED	22-Feb-23
DATE TESTED	24-Feb-23	SAMPLED BY	Client

MATERIAL	Stiff brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	19.8	35.1	1.007	
Determination 2 (avg)	19.5	35.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
20.7	35	13	22	95



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Laboratory Manager)

DATE

07-Mar-23

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870



TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.3 (30° FALL CONE) 1 POINT METHOD

PLASTIC LIMIT BS EN ISO 17892-12:2018+A1:2021 Clause 5.5

WATER CONTENT METHOD BS EN ISO 17892-1:2014

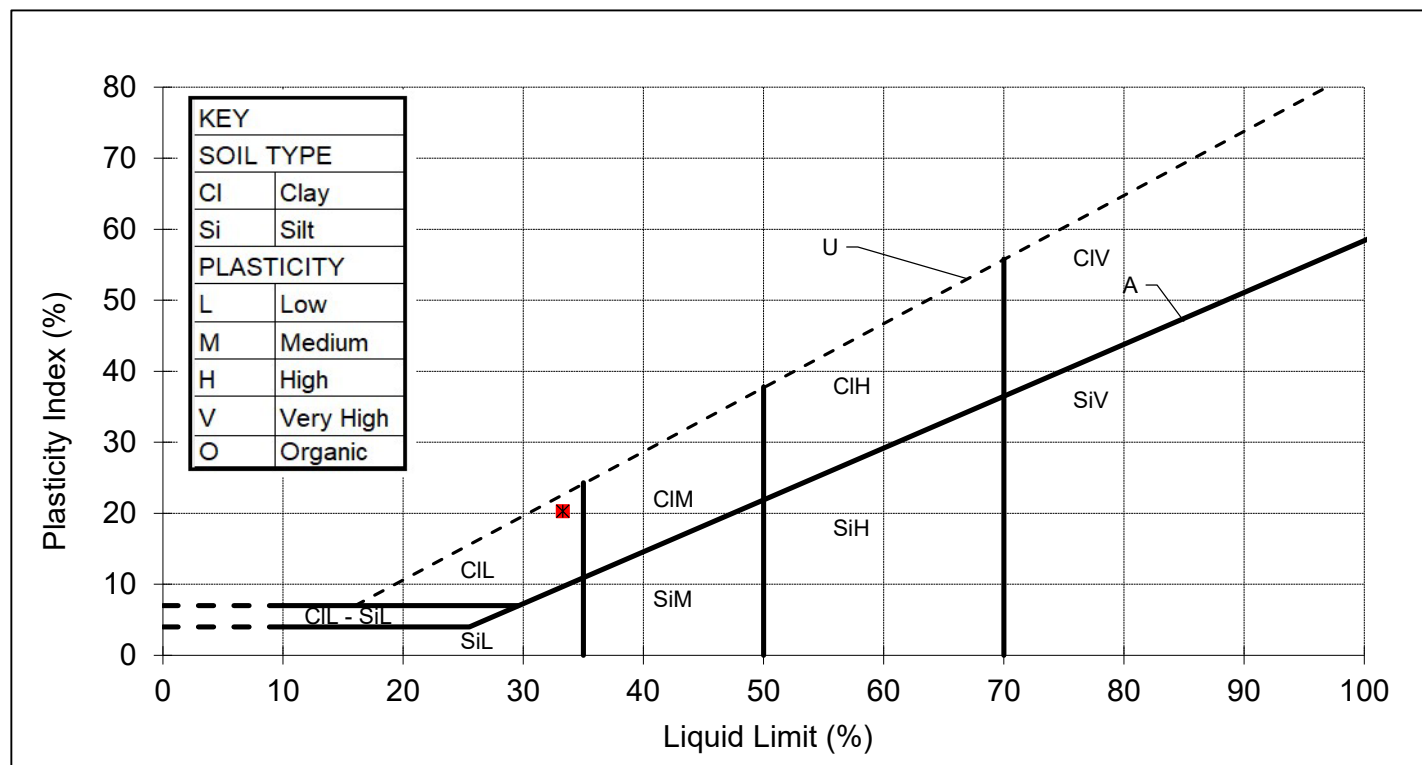
CLIENT	LK Consult Ltd
SITE	LKC 22 1142 - Holly Mount Farm, Bury
JOB NUMBER	MRN 4606/18

SAMPLE LABEL	TP105 1.4-2.4m	DATE SAMPLED	Not advised
SAMPLE No.	121740	DATE RECEIVED	22-Feb-23
DATE TESTED	24-Feb-23	SAMPLED BY	Client

MATERIAL	Firm orangey brown silty sandy gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Wet Sieved

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	16.8	31.8	1.044	
Determination 2 (avg)	16.9	32.0		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12.2	33	13	20	60



REMARKS

SIGNED

NAME

O.P. Davies BA (Hons)
(Laboratory Manager)

DATE

07-Mar-23

Appendix F

Soakaway Test Results

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

1 / 6

Location	Date	Level	Location
TP101	14/02/2023		

Pit Width (m)	0.60
Pit Depth (m)	2.00
Pit Length (m)	2.00

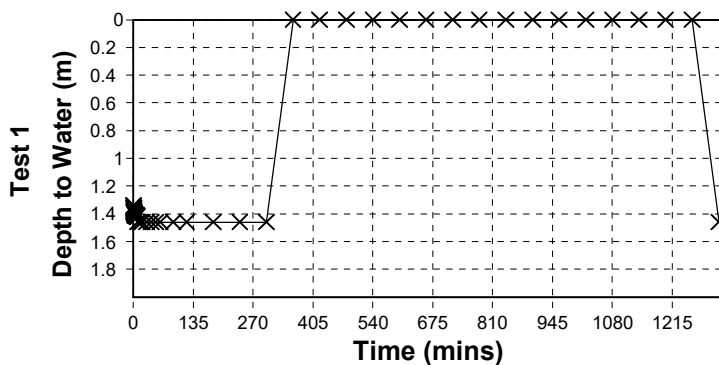
Soil type at test level	Clay
Groundwater	None
Drain discharge depth	2.0
Sidewall stability	Stable
Stone filled or open pit	Stone filled

	1
Effective depth (m)	0.66
Volume outflowing between 75% & 25% (m3)*	
Mean surface area through which outflow occurs (m2)	
Time for outflow between 75% & 25% (min)	
SOIL INFILTRATION RATE (ms-1), f	Test Failed

Remarks

Test left over night.

* Volume outflowing reduced to account for granular backfill used during testing (30 % of free volume assumed).





LK CONSULT LTD

Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Soakaway Test (BRE Digest 365)

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

2 / 6

Elapsed time (hh:mm:ss)	Depth to Water Test 1
00:00:00	1.34
00:00:05	1.34
00:00:15	1.35
00:00:25	1.36
00:00:35	1.36
00:00:45	1.37
00:00:55	1.38
00:01:25	1.39
00:01:55	1.39
00:02:25	1.40
00:02:55	1.40
00:03:25	1.40
00:03:55	1.41
00:04:25	1.41
00:04:55	1.41
00:05:55	1.41
00:06:55	1.41
00:07:55	1.42
00:08:55	1.42
00:09:55	1.46
00:14:55	1.46
00:19:55	1.46
00:29:55	1.46
00:39:55	1.46
00:49:55	1.46
00:59:55	1.46
01:29:55	1.46
01:59:55	1.46
02:59:55	1.46
03:59:55	1.46
04:59:55	1.46
05:59:55	
06:59:55	
07:59:55	
08:59:55	
09:59:55	
10:59:55	
11:59:55	
12:59:55	
13:59:55	
14:59:55	
15:59:55	
16:59:55	
17:59:55	
18:59:55	
19:59:55	
20:59:55	
21:59:55	1.46

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

3 / 6

Location	Date	Level	Location
TP102	14/02/2023		

Pit Width (m)	0.60
Pit Depth (m)	1.90
Pit Length (m)	2.00

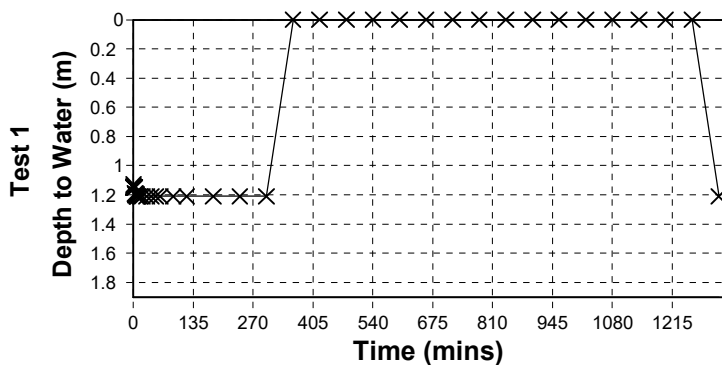
Soil type at test level	Clay
Groundwater	None
Drain discharge depth	1.9
Sidewall stability	Stable
Stone filled or open pit	Stone filled

	1
Effective depth (m)	0.77
Volume outflowing between 75% & 25% (m3)*	
Mean surface area through which outflow occurs (m2)	
Time for outflow between 75% & 25% (min)	
SOIL INFILTRATION RATE (ms-1), f	Test Failed

Remarks

Test left over night.

* Volume outflowing reduced to account for granular backfill used during testing (30 % of free volume assumed).





LK CONSULT LTD

Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Soakaway Test (BRE Digest 365)

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

4 / 6

Elapsed time (hh:mm:ss)	Depth to Water Test 1
00:00:00	1.13
00:00:05	1.14
00:00:15	1.15
00:00:25	1.15
00:00:35	1.15
00:00:45	1.15
00:00:55	1.15
00:01:25	1.15
00:01:55	1.15
00:02:25	1.15
00:02:55	1.15
00:03:25	1.15
00:03:55	1.19
00:04:25	1.20
00:04:55	1.20
00:05:55	1.20
00:06:55	1.20
00:07:55	1.21
00:08:55	1.21
00:09:55	1.21
00:14:55	1.21
00:19:55	1.21
00:29:55	1.21
00:39:55	1.21
00:49:55	1.21
00:59:55	1.21
01:29:55	1.21
01:59:55	1.21
02:59:55	1.21
03:59:55	1.21
04:59:55	1.21
05:59:55	
06:59:55	
07:59:55	
08:59:55	
09:59:55	
10:59:55	
11:59:55	
12:59:55	
13:59:55	
14:59:55	
15:59:55	
16:59:55	
17:59:55	
18:59:55	
19:59:55	
20:59:55	
21:59:55	1.21

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

5 / 6

Location	Date	Level	Location
TP103	14/02/2023		

Pit Width (m)	0.60
Pit Depth (m)	1.80
Pit Length (m)	2.00

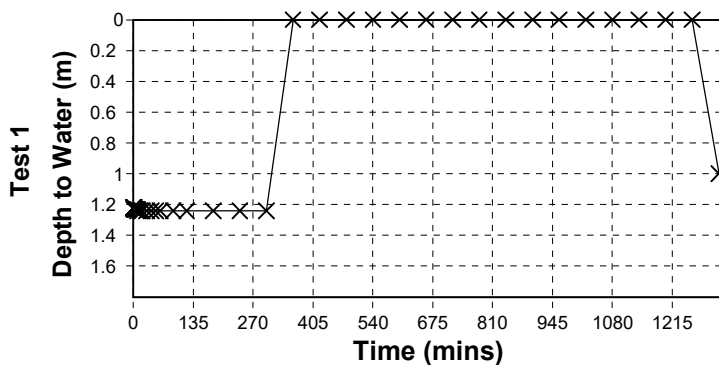
Soil type at test level	Clay
Groundwater	None
Drain discharge depth	1.8
Sidewall stability	Stable
Stone filled or open pit	Stone filled

	1
Effective depth (m)	0.58
Volume outflowing between 75% & 25% (m3)*	
Mean surface area through which outflow occurs (m2)	
Time for outflow between 75% & 25% (min)	
SOIL INFILTRATION RATE (ms-1), f	Test Failed

Remarks

Test left over night.

* Volume outflowing reduced to account for granular backfill used during testing (30 % of free volume assumed).





LK CONSULT LTD

Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Soakaway Test (BRE Digest 365)

Site : Holly Mount Farm, Bury

Client : Keystone Projects (Hawkshaw) Ltd

Engineer : LKC

Job Number

LKC 22 1142

Sheet

6 / 6

Elapsed time (hh:mm:ss)	Depth to Water Test 1
00:00:00	1.22
00:00:05	1.22
00:00:15	1.22
00:00:25	1.22
00:00:35	1.22
00:00:45	1.22
00:00:55	1.22
00:01:25	1.23
00:01:55	1.23
00:02:25	1.23
00:02:55	1.23
00:03:25	1.23
00:03:55	1.23
00:04:25	1.23
00:04:55	1.23
00:05:55	1.23
00:06:55	1.23
00:07:55	1.23
00:08:55	1.23
00:09:55	1.24
00:14:55	1.24
00:19:55	1.24
00:29:55	1.24
00:39:55	1.24
00:49:55	1.24
00:59:55	1.24
01:29:55	1.24
01:59:55	1.24
02:59:55	1.24
03:59:55	1.24
04:59:55	1.24
05:59:55	
06:59:55	
07:59:55	
08:59:55	
09:59:55	
10:59:55	
11:59:55	
12:59:55	
13:59:55	
14:59:55	
15:59:55	
16:59:55	
17:59:55	
18:59:55	
19:59:55	
20:59:55	
21:59:55	1.00

Appendix G

Generic Assessment Criteria Values

CATEGORY 4 SCREENING LEVELS

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

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

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

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

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

NOTES

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

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

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

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

NOTES

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

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

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

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

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

NOTES

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

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

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

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

NOTES

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

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

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

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

NOTES

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

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

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

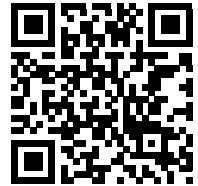
Appendix H

HazWaste Online Sheets

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



X7O8D-WFGM3-JYYJU

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

LKC 22 1142

Description/Comments

Project

LKC 22 1142

Site

Holly Mount Farm, Bury

Classified by

Name: **Peter Dunn**
Date: **07 Mar 2023 12:49 GMT**
Telephone: **0161 763 7200**

Company: **LK Group**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

18 Sep 2019
02 Aug 2022

Next 3 year Refresher due by Aug 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Holly Mount Farm, Hollymount Lane, Tottington, Bury

Post Code **BL8 4HP**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

REdevelopment of brownfield land

Description of the specific process, sub-process and/or activity that created the waste

Construction

Description of the waste

Made Ground and soil

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	ws101-0.00 - 0.60-15/02/2023	0.00 - 0.60	Non Hazardous		3
2	ws101-1.65 - 2.00-15/02/2023	1.65 - 2.00	Non Hazardous		5
3	ws102-0.00 - 1.00-15/02/2023	0.00 - 1.00	Non Hazardous		8
4	ws102-1.00 - 1.50-15/02/2023	1.00 - 1.50	Non Hazardous		10
5	ws103-0.00 - 1.00-15/02/2023	0.00 - 1.00	Non Hazardous		13
6	ws103-1.50 - 2.00-15/02/2023	1.50 - 2.00	Non Hazardous		15
7	ws103-2.00 - 2.60-15/02/2023	2.00 - 2.60	Non Hazardous		18
8	ws104-0.30 - 0.80-15/02/2023	0.30 - 0.80	Non Hazardous		20
9	ws105-0.00 - 0.60-15/02/2023	0.00 - 0.60	Non Hazardous		22
10	TP101-0.00 - 1.00-14/02/2023	0.00 - 1.00	Non Hazardous		24
11	TP102-0.00 - 0.70-14/02/2023	0.00 - 0.70	Non Hazardous		26
12	TP103-0.00 - 0.50-14/02/2023	0.00 - 0.50	Non Hazardous		29
13	TP103-0.50 - 1.50-14/02/2023	0.50 - 1.50	Non Hazardous		31
14	TP104-0.00 - 0.50-14/02/2023	0.00 - 0.50	Non Hazardous		32
15	TP104-0.50 - 1.40-14/02/2023	0.50 - 1.40	Non Hazardous		34
16	TP105-0.00 - 1.40-14/02/2023	0.00 - 1.40	Non Hazardous		35
17	TP106-0.00 - 1.70-14/02/2023	0.00 - 1.70	Non Hazardous		37
18	TP107-0.00 - 1.30-14/02/2023	0.00 - 1.30	Non Hazardous		42

Related documents

#	Name	Description
1	23-02184.1.hwol	DETS South .hwol file used to populate the Job
2	23-02125.1.hwol	DETS South .hwol file used to populate the Job
3	LK SUITE 1 - 5	waste stream template used to create this Job

Report

Created by: Peter Dunn

Created date: 07 Mar 2023 12:49 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	44
Appendix B: Rationale for selection of metal species	49
Appendix C: Version	50

Classification of sample: ws101-0.00 - 0.60-15/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws101-0.00 - 0.60-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 0.60 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				11 mg/kg	1.32	12.636 mg/kg	0.00126 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.199 mg/kg	0.0000199 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	19.073 mg/kg	0.00191 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				38 mg/kg	1.126	37.222 mg/kg	0.00372 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				16 mg/kg	1.273	17.714 mg/kg	0.00177 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	146 mg/kg		127.02 mg/kg	0.0127 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				23 mg/kg	1.785	35.722 mg/kg	0.00357 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				73 mg/kg	1.245	79.052 mg/kg	0.00791 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				8.2 pH		8.2 pH	8.2 pH		
			PH							
13	naphthalene				0.17 mg/kg		0.148 mg/kg	0.0000148 %	✓	
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		0.43 mg/kg		0.374 mg/kg	0.0000374 %	✓	
16	fluorene	201-695-5	86-73-7		0.26 mg/kg		0.226 mg/kg	0.0000226 %	✓	
17	phenanthrene	201-581-5	85-01-8		3.07 mg/kg		2.671 mg/kg	0.000267 %	✓	
18	anthracene	204-371-1	120-12-7		0.59 mg/kg		0.513 mg/kg	0.0000513 %	✓	
19	fluoranthene	205-912-4	206-44-0		4.28 mg/kg		3.724 mg/kg	0.000372 %	✓	
20	pyrene	204-927-3	129-00-0		4.33 mg/kg		3.767 mg/kg	0.000377 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		2.08 mg/kg		1.81 mg/kg	0.000181 %	✓	
22	chrysene	601-048-00-0	205-923-4		1.81 mg/kg		1.575 mg/kg	0.000157 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		2.2 mg/kg		1.914 mg/kg	0.000191 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.79 mg/kg		0.687 mg/kg	0.0000687 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		2.29 mg/kg		1.992 mg/kg	0.000199 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		1.02 mg/kg		0.887 mg/kg	0.0000887 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.14 mg/kg		0.122 mg/kg	0.0000122 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		0.79 mg/kg		0.687 mg/kg	0.0000687 %	✓	
29	asbestos	650-013-00-6	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.0368 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: ws101-1.65 - 2.00-15/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws101-1.65 - 2.00-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.65 - 2.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
23.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 23.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-045-00-7	200-024-3	50-29-3							
2	chlordan (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-047-00-8	200-349-0	57-74-9							
3	hexachlorocyclohexanes, including lindane				<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<LOD
	602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1							
4	dieldrin (ISO)				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-049-00-9	200-484-5	60-57-1							
5	endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-051-00-X	200-775-7	72-20-8							
6	heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-046-00-2	200-962-3	76-44-8							
7	hexachlorobenzene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-065-00-6	204-273-9	118-74-1							
8	aldrin (ISO)				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-048-00-3	206-215-8	309-00-2							
9	heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-063-00-5	213-831-0	1024-57-3							
10	isodrin; (1a,4a,4ab,5b,8b,8ab)-1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-050-00-4	207-366-2	465-73-6							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
11	p,p'-methoxychlor	200-779-9	72-43-5		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
12	o,p'-DDD	200-166-6	53-19-0		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
13	o,p'-DDE	222-318-0	3424-82-6		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
14	o,p'-DDT	212-332-5	789-02-6		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
15	p,p'-DDD	200-783-0	72-54-8		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
16	p,p'-DDE	200-784-6	72-55-9		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
17	trifluralin (ISO) (containing < 0.5 ppm NPDA); a,a,a-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (containing < 0.5 ppm NPDA); 2,6-dinitro-N,N-dipropyl-4-trifluoromethylaniline (containing < 0.5 ppm NPDA); N,N-dipropyl-2,6-dinitro-4-trifluoromethylaniline (containing < 0.5 ppm NPDA)	609-046-00-1	216-428-8	1582-09-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
18	azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate	015-039-00-9	201-676-1	86-50-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	chlorpyrifos-methyl (ISO); O, O-dimethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate	015-186-00-9	227-011-5	5598-13-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	diazinon (ISO); O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate	015-040-00-4	206-373-8	333-41-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	dichlorvos (ISO); 2,2-dichlorovinyl dimethyl phosphate	015-019-00-X	200-547-7	62-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	dimethoate (ISO); O,O-dimethyl methylcarbamoylmethyl phosphorodithioate	015-051-00-4	200-480-3	60-51-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	fenitrothion (ISO); O,O-dimethyl O-4-nitro-m-tolyl phosphorothioate	015-054-00-0	204-524-2	122-14-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate	015-048-00-8	200-231-9	55-38-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	malathion (ISO); 1,2-bis(ethoxycarbonyl)ethyl O,O-dimethyl phosphorodithioate; [containing £ 0.03 % isomalathion]	015-041-00-X	204-497-7	121-75-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	parathion (ISO); O,O-diethyl O-4-nitrophenyl phosphorothioate	015-034-00-1	200-271-7	56-38-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	parathion - methyl (ISO); O,O-dimethyl O-4-nitrophenyl phosphorothioate	015-035-00-7	206-050-1	298-00-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate	015-033-00-6	206-052-2	298-02-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6- ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3- ylenedimethylene sulfite	602-052-00-5	204-079-4	115-29-7	<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
30	mevinphos (ISO); 2-methoxycarbonyl-1-methylvinyl dimethyl phosphate	015-020-00-5	232-095-1	7786-34-7	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
Total:								0.00017 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected

Classification of sample: ws102-0.00 - 1.00-15/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws102-0.00 - 1.00-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10.6%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 10.6% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				6 mg/kg	1.32	7.082 mg/kg	0.000708 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	24.826 mg/kg	0.00248 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				36 mg/kg	1.126	36.236 mg/kg	0.00362 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				13 mg/kg	1.273	14.79 mg/kg	0.00148 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	29 mg/kg		25.926 mg/kg	0.00259 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				55 mg/kg	1.785	87.778 mg/kg	0.00878 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				73 mg/kg	1.245	81.233 mg/kg	0.00812 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH		PH		8.1 pH		8.1 pH	8.1 pH		
13	naphthalene				0.18 mg/kg		0.161 mg/kg	0.0000161 %	✓	
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		1.11 mg/kg		0.992 mg/kg	0.0000992 %	✓	
18	anthracene	204-371-1	120-12-7		0.44 mg/kg		0.393 mg/kg	0.0000393 %	✓	
19	fluoranthene	205-912-4	206-44-0		2.25 mg/kg		2.011 mg/kg	0.000201 %	✓	
20	pyrene	204-927-3	129-00-0		2.04 mg/kg		1.824 mg/kg	0.000182 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.14 mg/kg		1.019 mg/kg	0.000102 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	1.41 mg/kg		1.261 mg/kg	0.000126 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2.08 mg/kg		1.86 mg/kg	0.000186 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.17 mg/kg		1.046 mg/kg	0.000105 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.25 mg/kg		2.906 mg/kg	0.000291 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		1.35 mg/kg		1.207 mg/kg	0.000121 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		0.92 mg/kg		0.822 mg/kg	0.0000822 %	✓	
Total:								0.0302 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: ws102-1.00 - 1.50-15/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws102-1.00 - 1.50-15/02/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.00 - 1.50 m	
Moisture content:	
18.4%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 18.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH		PH		7.7 pH		7.7 pH	7.7 pH		
2	DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane	602-045-00-7	200-024-3	50-29-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
3	chlordan (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan	602-047-00-8	200-349-0	57-74-9	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
4	hexachlorocyclohexanes, including lindane	602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1	<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<LOD
5	dieldrin (ISO)	602-049-00-9	200-484-5	60-57-1	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
6	endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene	602-051-00-X	200-775-7	72-20-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
7	heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene	602-046-00-2	200-962-3	76-44-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
8	hexachlorobenzene	602-065-00-6	204-273-9	118-74-1	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
9	aldrin (ISO)	602-048-00-3	206-215-8	309-00-2	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
10	heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane	602-063-00-5	213-831-0	1024-57-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
11	isodrin; (1a,4a,4ab,5b,8b,8ab)-1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
	602-050-00-4	207-366-2	465-73-6								
12	p,p'-methoxychlor				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		200-779-9	72-43-5								
13	o,p'-DDD				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		200-166-6	53-19-0								
14	o,p'-DDE				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		222-318-0	3424-82-6								
15	o,p'-DDT				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		212-332-5	789-02-6								
16	p,p'-DDD				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		200-783-0	72-54-8								
17	p,p'-DDE				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
		200-784-6	72-55-9								
18	trifluralin (ISO) (containing < 0.5 ppm NPDA); a,a,a-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (containing < 0.5 ppm NPDA); 2,6-dinitro-N,N-dipropyl-4-trifluoromethylaniline (containing < 0.5 ppm NPDA); N,N-dipropyl-2,6-dinitro-4-trifluoromethylaniline (containing < 0.5 ppm NPDA)				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %			<LOD
	609-046-00-1	216-428-8	1582-09-8								
19	azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-039-00-9	201-676-1	86-50-0								
20	chlorpyrifos-methyl (ISO);, O, O-dimethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-186-00-9	227-011-5	5598-13-0								
21	diazinon (ISO); O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-040-00-4	206-373-8	333-41-5								
22	dichlorvos (ISO); 2,2-dichlorovinyl dimethyl phosphate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-019-00-X	200-547-7	62-73-7								
23	dimethoate (ISO); O,O-dimethyl methylcarbamoylmethyl phosphorodithioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-051-00-4	200-480-3	60-51-5								
24	fenitrothion (ISO); O,O-dimethyl O-4-nitro-m-tolyl phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-054-00-0	204-524-2	122-14-5								
25	fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-048-00-8	200-231-9	55-38-9								
26	malathion (ISO); 1,2-bis(ethoxycarbonyl)ethyl O,O-dimethyl phosphorodithioate; [containing £ 0.03 % isomalathion]				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-041-00-X	204-497-7	121-75-5								
27	parathion (ISO); O,O-diethyl O-4-nitrophenyl phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-034-00-1	200-271-7	56-38-2								
28	parathion - methyl (ISO); O,O-dimethyl O-4-nitrophenyl phosphorothioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-035-00-7	206-050-1	298-00-0								
29	phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	015-033-00-6	206-052-2	298-02-2								
30	endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6- ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3- ylenedimethylene sulfite				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %			<LOD
	602-052-00-5	204-079-4	115-29-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
31	mevinphos (ISO); 2-methoxycarbonyl-1-methylvinyl dimethyl phosphate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	015-020-00-5	232-095-1	7786-34-7							
Total:								0.00017 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected

Classification of sample: ws103-0.00 - 1.00-15/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws103-0.00 - 1.00-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
28%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 28% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				28 mg/kg	1.32	26.618 mg/kg	0.00266 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				0.9 mg/kg	1.142	0.74 mg/kg	0.000074 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20 mg/kg	1.462	21.046 mg/kg	0.0021 %	✓		
			215-160-9	1308-38-9								
4		copper { dicopper oxide; copper (I) oxide }				106 mg/kg	1.126	85.928 mg/kg	0.00859 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }				30 mg/kg	1.273	27.488 mg/kg	0.00275 %	✓		
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	378 mg/kg		272.16 mg/kg	0.0272 %	✓		
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD	
		034-002-00-8										
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				45 mg/kg	1.785	57.84 mg/kg	0.00578 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }				230 mg/kg	1.245	206.125 mg/kg	0.0206 %	✓		
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD	
		024-001-00-0	215-607-8	1333-82-0								
12		pH		PH		7.5 pH		7.5 pH	7.5 pH			
13		naphthalene				0.19 mg/kg		0.137 mg/kg	0.0000137 %	✓		
		601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	• acenaphthene	201-469-6	83-32-9		0.33 mg/kg		0.238 mg/kg	0.0000238 %	✓	
16	• fluorene	201-695-5	86-73-7		0.31 mg/kg		0.223 mg/kg	0.0000223 %	✓	
17	• phenanthrene	201-581-5	85-01-8		4.02 mg/kg		2.894 mg/kg	0.000289 %	✓	
18	• anthracene	204-371-1	120-12-7		0.81 mg/kg		0.583 mg/kg	0.0000583 %	✓	
19	• fluoranthene	205-912-4	206-44-0		5.79 mg/kg		4.169 mg/kg	0.000417 %	✓	
20	• pyrene	204-927-3	129-00-0		5.43 mg/kg		3.91 mg/kg	0.000391 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.81 mg/kg		2.023 mg/kg	0.000202 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	2.36 mg/kg		1.699 mg/kg	0.00017 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.64 mg/kg		2.621 mg/kg	0.000262 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.51 mg/kg		1.087 mg/kg	0.000109 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.65 mg/kg		2.628 mg/kg	0.000263 %	✓	
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		2.07 mg/kg		1.49 mg/kg	0.000149 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.19 mg/kg		0.137 mg/kg	0.0000137 %	✓	
28	• benzo[ghi]perylene	205-883-8	191-24-2		1.33 mg/kg		0.958 mg/kg	0.0000958 %	✓	
Total:								0.0731 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: ws103-1.50 - 2.00-15/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws103-1.50 - 2.00-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.50 - 2.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
19.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 19.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				<2 mg/kg	1.32	<2.641 mg/kg	<0.000264 %			<LOD
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	16.472 mg/kg	0.00165 %		✓	
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				19 mg/kg	1.126	17.22 mg/kg	0.00172 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
6	nickel { nickel(II) oxide (nickel monoxide) }				13 mg/kg	1.273	13.318 mg/kg	0.00133 %		✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	15 mg/kg		12.075 mg/kg	0.00121 %		✓	
	082-001-00-6										
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %			<LOD
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				15 mg/kg	1.785	21.556 mg/kg	0.00216 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				43 mg/kg	1.245	43.086 mg/kg	0.00431 %		✓	
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
13	TPH (C6 to C40) petroleum group				<60 mg/kg		<60 mg/kg	<0.006 %			<LOD
			TPH								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane 603-181-00-X	216-653-1	1634-04-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
15	benzene 601-020-00-8	200-753-7	71-43-2		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
16	toluene 601-021-00-3	203-625-9	108-88-3		0.011 mg/kg		0.0088 mg/kg	0.000000886 %	✓	
17	ethylbenzene 601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
18	xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.003 mg/kg		0.0024 mg/kg	0.000000242 %	✓	
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
20	pH PH				8.8 pH		8.8 pH	8.8 pH		
21	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene 205-917-1	208-96-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene 201-469-6	83-32-9			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene 201-695-5	86-73-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene 201-581-5	85-01-8			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	anthracene 204-371-1	120-12-7			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene 205-912-4	206-44-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	pyrene 204-927-3	129-00-0			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene 601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	benzo[ghi]perylene 205-883-8	191-24-2			<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	monohydric phenols P1186				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0202 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 8.86e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 2.42e-07%)

Classification of sample: ws103-2.00 - 2.60-15/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
ws103-2.00 - 2.60-15/02/2023	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
2.00 - 2.60 m		
Moisture content:		
16.5%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 16.5% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	TPH (C6 to C40) petroleum group				<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
				TPH							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				0.27 mg/kg		0.225 mg/kg	0.0000225 %	✓	
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-023-00-4	202-849-4	100-41-4							
6		xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
Total:									0.00422 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 0.00002%)

Classification of sample: ws104-0.30 - 0.80-15/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws104-0.30 - 0.80-15/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 - 0.80 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17.8%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				9 mg/kg	1.32	9.768 mg/kg	0.000977 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	13.215 mg/kg	0.00132 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				41 mg/kg	1.126	37.945 mg/kg	0.00379 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				18 mg/kg	1.273	18.829 mg/kg	0.00188 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	47 mg/kg		38.634 mg/kg	0.00386 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				22 mg/kg	1.785	32.283 mg/kg	0.00323 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				67 mg/kg	1.245	68.551 mg/kg	0.00686 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH		PH		7.8 pH		7.8 pH	7.8 pH		
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	• acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	• fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	• phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	• anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	• fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	• pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	• benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0229 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: ws105-0.00 - 0.60-15/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
ws105-0.00 - 0.60-15/02/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00 - 0.60 m	
Moisture content:	
20.1%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 20.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				13 mg/kg	1.32	13.714 mg/kg	0.00137 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				0.3 mg/kg	1.142	0.274 mg/kg	0.0000274 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	18.685 mg/kg	0.00187 %		✓	
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				40 mg/kg	1.126	35.983 mg/kg	0.0036 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
6	nickel { nickel(II) oxide (nickel monoxide) }				13 mg/kg	1.273	13.218 mg/kg	0.00132 %		✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	152 mg/kg		121.448 mg/kg	0.0121 %		✓	
	082-001-00-6										
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %			<LOD
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				25 mg/kg	1.785	35.659 mg/kg	0.00357 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				154 mg/kg	1.245	153.157 mg/kg	0.0153 %		✓	
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	pH		PH		5.8 pH		5.8 pH	5.8 pH			
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		0.39 mg/kg		0.312 mg/kg	0.0000312 %	✓	
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	fluoranthene	205-912-4	206-44-0		0.83 mg/kg		0.663 mg/kg	0.0000663 %	✓	
20	pyrene	204-927-3	129-00-0		0.75 mg/kg		0.599 mg/kg	0.0000599 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.4 mg/kg		0.32 mg/kg	0.000032 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	0.46 mg/kg		0.368 mg/kg	0.0000368 %	✓	
23	benzo[k]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.6 mg/kg		0.479 mg/kg	0.0000479 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.25 mg/kg		0.2 mg/kg	0.00002 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.53 mg/kg		0.423 mg/kg	0.0000423 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.34 mg/kg		0.272 mg/kg	0.0000272 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		0.23 mg/kg		0.184 mg/kg	0.0000184 %	✓	
Total:								0.0405 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101-0.00 - 1.00-14/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP101-0.00 - 1.00-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				9 mg/kg	1.32	10.374 mg/kg	0.00104 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.399 mg/kg	0.0000399 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13 mg/kg	1.462	16.587 mg/kg	0.00166 %		✓	
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				26 mg/kg	1.126	25.555 mg/kg	0.00256 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
6	nickel { nickel(II) oxide (nickel monoxide) }				12 mg/kg	1.273	13.332 mg/kg	0.00133 %		✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	105 mg/kg		91.665 mg/kg	0.00917 %		✓	
	082-001-00-6										
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %			<LOD
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				21 mg/kg	1.785	32.728 mg/kg	0.00327 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				64 mg/kg	1.245	69.545 mg/kg	0.00695 %		✓	
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	pH		PH		7.4 pH		7.4 pH	7.4 pH			
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		0.57 mg/kg		0.498 mg/kg	0.0000498 %	✓	
18	anthracene	204-371-1	120-12-7		0.14 mg/kg		0.122 mg/kg	0.0000122 %	✓	
19	fluoranthene	205-912-4	206-44-0		1.05 mg/kg		0.917 mg/kg	0.0000917 %	✓	
20	pyrene	204-927-3	129-00-0		0.95 mg/kg		0.829 mg/kg	0.0000829 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.55 mg/kg		0.48 mg/kg	0.000048 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	0.45 mg/kg		0.393 mg/kg	0.0000393 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.52 mg/kg		0.454 mg/kg	0.0000454 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.19 mg/kg		0.166 mg/kg	0.0000166 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.46 mg/kg		0.402 mg/kg	0.0000402 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.3 mg/kg		0.262 mg/kg	0.0000262 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		0.26 mg/kg		0.227 mg/kg	0.0000227 %	✓	
Total:								0.0273 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102-0.00 - 0.70-14/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP102-0.00 - 0.70-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 0.70 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
23.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 23.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane; dichlorodiphenyltrichloroethane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-045-00-7	200-024-3	50-29-3							
2	chlordan (ISO); 1,2,4,5,6,7,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	602-047-00-8	200-349-0	57-74-9							
3	hexachlorocyclohexanes, including lindane				<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<LOD
	602-043-00-6	210-168-9, 200-401-2, 206-270-8, 206-271-3	58-89-9, 319-84-6, 319-85-7, 608-73-1							
4	dieldrin (ISO)				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-049-00-9	200-484-5	60-57-1							
5	endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4:5,8-dimethanonaphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-051-00-X	200-775-7	72-20-8							
6	heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-046-00-2	200-962-3	76-44-8							
7	hexachlorobenzene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-065-00-6	204-273-9	118-74-1							
8	aldrin (ISO)				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-048-00-3	206-215-8	309-00-2							
9	heptachlor epoxide; 2,3-epoxy-1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-063-00-5	213-831-0	1024-57-3							
10	isodrin; (1a,4a,4ab,5b,8b,8ab)-1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-dimethanonaphthalene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	602-050-00-4	207-366-2	465-73-6							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
11	p,p'-methoxychlor	200-779-9	72-43-5		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
12	o,p'-DDD	200-166-6	53-19-0		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
13	o,p'-DDE	222-318-0	3424-82-6		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
14	o,p'-DDT	212-332-5	789-02-6		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
15	p,p'-DDD	200-783-0	72-54-8		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
16	p,p'-DDE	200-784-6	72-55-9		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
17	trifluralin (ISO) (containing < 0.5 ppm NPDA); a,a,a-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine (containing < 0.5 ppm NPDA); 2,6-dinitro-N,N-dipropyl-4-trifluoromethylaniline (containing < 0.5 ppm NPDA); N,N-dipropyl-2,6-dinitro-4-trifluoromethylaniline (containing < 0.5 ppm NPDA)	609-046-00-1	216-428-8	1582-09-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
18	azinphos-methyl (ISO); O,O-dimethyl-4-oxobenzotriazin-3-ylmethyl phosphorodithioate	015-039-00-9	201-676-1	86-50-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	chlorpyrifos-methyl (ISO); O, O-dimethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate	015-186-00-9	227-011-5	5598-13-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	diazinon (ISO); O,O-diethyl O-2-isopropyl-6-methylpyrimidin-4-yl phosphorothioate	015-040-00-4	206-373-8	333-41-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	dichlorvos (ISO); 2,2-dichlorovinyl dimethyl phosphate	015-019-00-X	200-547-7	62-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	dimethoate (ISO); O,O-dimethyl methylcarbamoylmethyl phosphorodithioate	015-051-00-4	200-480-3	60-51-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	fenitrothion (ISO); O,O-dimethyl O-4-nitro-m-tolyl phosphorothioate	015-054-00-0	204-524-2	122-14-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fenthion (ISO); O,O-dimethyl-O-(4-methylthion-m-tolyl) phosphorothioate	015-048-00-8	200-231-9	55-38-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	malathion (ISO); 1,2-bis(ethoxycarbonyl)ethyl O,O-dimethyl phosphorodithioate; [containing £ 0.03 % isomalathion]	015-041-00-X	204-497-7	121-75-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	parathion (ISO); O,O-diethyl O-4-nitrophenyl phosphorothioate	015-034-00-1	200-271-7	56-38-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	parathion - methyl (ISO); O,O-dimethyl O-4-nitrophenyl phosphorothioate	015-035-00-7	206-050-1	298-00-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	phorate (ISO); O,O-diethyl ethylthiomethyl phosphorodithioate	015-033-00-6	206-052-2	298-02-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	endosulfan (ISO); 1,2,3,4,7,7-hexachloro-8,9,10-trinorborn-2-en-5,6- ylenedimethylene sulfite; 1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3- ylenedimethylene sulfite	602-052-00-5	204-079-4	115-29-7	<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
30	mevinphos (ISO); 2-methoxycarbonyl-1-methylvinyl dimethyl phosphate	015-020-00-5	232-095-1	7786-34-7	<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
Total:								0.00017 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection
ND	Not detected

Classification of sample: TP103-0.00 - 0.50-14/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP103-0.00 - 0.50-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 13.7% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic trioxide }				19 mg/kg	1.32	21.649 mg/kg	0.00216 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.394 mg/kg	0.0000394 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	15.136 mg/kg	0.00151 %	✓	
			215-160-9	1308-38-9							
4		copper { dicopper oxide; copper (I) oxide }				36 mg/kg	1.126	34.979 mg/kg	0.0035 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
5		mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
6		nickel { nickel(II) oxide (nickel monoxide) }				12 mg/kg	1.273	13.179 mg/kg	0.00132 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	413 mg/kg		356.419 mg/kg	0.0356 %	✓	
		082-001-00-6									
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
		034-002-00-8									
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				25 mg/kg	1.785	38.515 mg/kg	0.00385 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
10		zinc { zinc oxide }				61 mg/kg	1.245	65.525 mg/kg	0.00655 %	✓	
		030-013-00-7	215-222-5	1314-13-2							
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
		024-001-00-0	215-607-8	1333-82-0							
12		pH		PH		7.5 pH		7.5 pH	7.5 pH		
13		naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	• acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	• fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	• phenanthrene	201-581-5	85-01-8		0.26 mg/kg		0.224 mg/kg	0.0000224 %	✓	
18	• anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	• fluoranthene	205-912-4	206-44-0		0.74 mg/kg		0.639 mg/kg	0.0000639 %	✓	
20	• pyrene	204-927-3	129-00-0		0.71 mg/kg		0.613 mg/kg	0.0000613 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.53 mg/kg		0.457 mg/kg	0.0000457 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.41 mg/kg		0.354 mg/kg	0.0000354 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.64 mg/kg		0.552 mg/kg	0.0000552 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.23 mg/kg		0.198 mg/kg	0.0000198 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.6 mg/kg		0.518 mg/kg	0.0000518 %	✓	
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		0.38 mg/kg		0.328 mg/kg	0.0000328 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	• benzo[ghi]perylene	205-883-8	191-24-2		0.32 mg/kg		0.276 mg/kg	0.0000276 %	✓	
Total:								0.0559 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103-0.50 - 1.50-14/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP103-0.50 - 1.50-14/02/2023	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 - 1.50 m		
Moisture content:		
13.9%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 13.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	• pH				7.2 pH		7.2 pH	7.2 pH		
			PH							
Total:								0%		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: TP104-0.00 - 0.50-14/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP104-0.00 - 0.50-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.8%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4 mg/kg	1.32	4.764 mg/kg	0.000476 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	14.502 mg/kg	0.00145 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	18.28 mg/kg	0.00183 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				12 mg/kg	1.273	13.775 mg/kg	0.00138 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	31 mg/kg		27.962 mg/kg	0.0028 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				16 mg/kg	1.785	25.764 mg/kg	0.00258 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				45 mg/kg	1.245	50.523 mg/kg	0.00505 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH		PH		7.5 pH		7.5 pH	7.5 pH		
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	• acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	• fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	• phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	• anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	• fluoranthene	205-912-4	206-44-0		0.17 mg/kg		0.153 mg/kg	0.0000153 %	✓	
20	• pyrene	204-927-3	129-00-0		0.17 mg/kg		0.153 mg/kg	0.0000153 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[k]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	• benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0166 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104-0.50 - 1.40-14/02/2023



Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP104-0.50 - 1.40-14/02/2023	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 - 1.40 m		
Moisture content:		
15.4%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 15.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	pH		PH		6.8 pH		6.8 pH	6.8 pH		
Total:								0%		

Key

- User supplied data
- Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: TP105-0.00 - 1.40-14/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP105-0.00 - 1.40-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				30	mg/kg	1.32	33.47	mg/kg	0.00335 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.7	mg/kg	1.142	0.676	mg/kg	0.0000676 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				28	mg/kg	1.462	34.58	mg/kg	0.00346 %	✓	
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				60	mg/kg	1.126	57.083	mg/kg	0.00571 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
5	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
6	nickel { nickel(II) oxide (nickel monoxide) }				13	mg/kg	1.273	13.979	mg/kg	0.0014 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]									
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	79	mg/kg		66.755	mg/kg	0.00668 %	✓	
	082-001-00-6											
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
	034-002-00-8											
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				27	mg/kg	1.785	40.729	mg/kg	0.00407 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
10	zinc { zinc oxide }				253	mg/kg	1.245	266.101	mg/kg	0.0266 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
12	pH				7.3	pH		7.3	pH	7.3 pH		
			PH									
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		0.45 mg/kg		0.38 mg/kg	0.000038 %	✓	
18	anthracene	204-371-1	120-12-7		0.12 mg/kg		0.101 mg/kg	0.0000101 %	✓	
19	fluoranthene	205-912-4	206-44-0		1.34 mg/kg		1.132 mg/kg	0.000113 %	✓	
20	pyrene	204-927-3	129-00-0		1.33 mg/kg		1.124 mg/kg	0.000112 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.88 mg/kg		0.744 mg/kg	0.0000744 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.62 mg/kg		0.524 mg/kg	0.0000524 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.88 mg/kg		0.744 mg/kg	0.0000744 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.37 mg/kg		0.313 mg/kg	0.0000313 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.88 mg/kg		0.744 mg/kg	0.0000744 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.46 mg/kg		0.389 mg/kg	0.0000389 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		0.39 mg/kg		0.33 mg/kg	0.000033 %	✓	
Total:								0.0528 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106-0.00 - 1.70-14/02/2023

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP106-0.00 - 1.70-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.70 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				15 mg/kg	1.32	16.26 mg/kg	0.00163 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.5 mg/kg	1.142	0.469 mg/kg	0.0000469 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	20.399 mg/kg	0.00204 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				34 mg/kg	1.126	31.428 mg/kg	0.00314 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				12 mg/kg	1.273	12.538 mg/kg	0.00125 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	429 mg/kg		352.209 mg/kg	0.0352 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				21 mg/kg	1.785	30.778 mg/kg	0.00308 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				198 mg/kg	1.245	202.338 mg/kg	0.0202 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				<1 mg/kg	3.22	<3.22 mg/kg	<0.000322 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	xylene				<0.006 mg/kg		<0.006 mg/kg	<0.0000006 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
20	pH				7.4 pH		7.4 pH	7.4 pH			
			PH								
21	chloromethane; methyl chloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
22	vinyl chloride; chloroethylene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-023-00-7	200-831-0	75-01-4								
23	bromomethane; methylbromide				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-002-00-2	200-813-2	74-83-9								
24	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3								
25	tetrachloroethylene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-028-00-4	204-825-9	127-18-4								
26	carbon tetrachloride; tetrachloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-008-00-5	200-262-8	56-23-5								
27	trichloroethylene; trichloroethene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-027-00-9	201-167-4	79-01-6								
28	hexachlorobenzene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-065-00-6	204-273-9	118-74-1								
29	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
30	bromoform; tribromomethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-007-00-X	200-854-6	75-25-2								
31	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-003-00-8	200-824-2	74-95-3								
32	dichlorodifluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		200-893-9	75-71-8								
33	chloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-009-00-0	200-830-5	75-00-3								
34	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		200-892-3	75-69-4								
35	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
36	1,1-dichloroethylene; vinylidene chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-025-00-8	200-864-0	75-35-4								
37	2,2-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		209-832-0	594-20-7								
38	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-006-00-4	200-663-8	67-66-3								
39	bromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		200-826-3	74-97-5								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
40	1,1,1-trichloroethane; methyl chloroform				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
41	1,1-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
42	1,2-dichloropropane; propylene dichloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
43	• bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
44	2-methoxy-2-methylbutane; tert-amyl methyl ether				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-213-00-2	213-611-4	994-05-8							
45	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
46	• trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		431-460-4	10061-02-6							
47	1,1,2-trichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
48	• 1,3-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-531-3	142-28-9							
49	• dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		204-704-0	124-48-1							
50	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
51	chlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
52	• 1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		211-135-1	630-20-6							
53	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
54	1,1,2,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-015-00-3	201-197-8	79-34-5							
55	1,2,3-trichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-062-00-X	202-486-1	96-18-4							
56	bromobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
57	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
58	• tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-632-4	98-06-6							
59	1,2,4-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
60	• sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-227-0	135-98-8							
61	• 4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-796-7	99-87-6							
62	1,3-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
63	1,4-dichlorobenzene; p-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
64	• n-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		203-209-7	104-51-8							
65	1,2-dichlorobenzene; o-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
66	1,2-dibromo-3-chloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
67	• hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-765-5	87-68-3							
68	1,2,4-trichlorobenzene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-087-00-6	204-428-0	120-82-1							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
69	2-nitrophenol	201-857-5	88-75-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
70	nitrobenzene	609-003-00-7	202-716-0	98-95-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
71	bis(2-chloroethoxy)methane	203-920-2	111-91-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
72	bis(2-chloroethyl) ether	603-029-00-2	203-870-1	111-44-4	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
73	2,4-dichlorophenol	604-011-00-7	204-429-6	120-83-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
74	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]	604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
75	3,4-xyleneol; [1] 2,5-xyleneol; [2] 2,4-xyleneol; [3] 2,3-xyleneol; [4] 2,6-xyleneol; [5] xyleneol; [6] 2,4(or 2,5)-xyleneol [7]	604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]	<0.15 mg/kg		<0.15 mg/kg	<0.000015 %		<LOD
76	3,5,5-trimethylcyclohex-2-enone; isophorone	606-012-00-8	201-126-0	78-59-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
77	hexachloroethane	200-666-4	67-72-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
78	2,4,6-trichlorophenol	604-018-00-5	201-795-9	88-06-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
79	2,4,5-trichlorophenol	604-017-00-X	202-467-8	95-95-4	<0.15 mg/kg		<0.15 mg/kg	<0.000015 %		<LOD
80	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol	604-014-00-3	200-431-6	59-50-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
81	2-methyl naphthalene	202-078-3	91-57-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
82	hexachlorocyclopentadiene	602-078-00-7	201-029-3	77-47-4	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
83	2,6-dinitrotoluene	609-049-00-8	210-106-0	606-20-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
84	dimethyl phthalate	205-011-6	131-11-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
85	2-chloronaphthalene	202-079-9	91-58-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
86	4-chloroaniline	612-137-00-9	203-401-0	106-47-8	<0.15 mg/kg		<0.15 mg/kg	<0.000015 %		<LOD
87	4-nitrophenol; p-nitrophenol	609-015-00-2	202-811-7	100-02-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
88	4-chlorophenylphenylether	230-281-7	7005-72-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
89	4-bromophenylphenylether	202-952-4	101-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
90	2,4-dinitrotoluene; [1] dinitrotoluene [2]	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
91	diethyl phthalate	201-550-6	84-66-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
92	dibenzofuran	205-071-3	132-64-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
93	azobenzene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
94	dibutyl phthalate; DBP				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
95	carbazole				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-696-0	86-74-8							
96	bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.15 mg/kg		<0.15 mg/kg	<0.000015 %		<LOD
	607-317-00-9	204-211-0	117-81-7							
97	BBP; benzyl butyl phthalate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
98	di-n-octyl phthalate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-214-7	117-84-0							
99	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
100	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]							
101	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]							
102	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.25 mg/kg		<0.25 mg/kg	<0.000025 %		<LOD
	604-004-00-9	203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]							
103	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]							
Total:								0.0727 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP107-0.00 - 1.30-14/02/2023

 **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:
TP107-0.00 - 1.30-14/02/2023	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00 - 1.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				12 mg/kg	1.32	13.895 mg/kg	0.00139 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.6 mg/kg	1.142	0.601 mg/kg	0.0000601 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	19.227 mg/kg	0.00192 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				37 mg/kg	1.126	36.534 mg/kg	0.00365 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				16 mg/kg	1.273	17.857 mg/kg	0.00179 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	95 mg/kg		83.315 mg/kg	0.00833 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				24 mg/kg	1.785	37.575 mg/kg	0.00376 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				110 mg/kg	1.245	120.078 mg/kg	0.012 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH		PH		7.7 pH		7.7 pH	7.7 pH		
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	• acenaphthene	201-469-6	83-32-9		0.21 mg/kg		0.184 mg/kg	0.0000184 %	✓	
16	• fluorene	201-695-5	86-73-7		0.23 mg/kg		0.202 mg/kg	0.0000202 %	✓	
17	• phenanthrene	201-581-5	85-01-8		1.17 mg/kg		1.026 mg/kg	0.000103 %	✓	
18	• anthracene	204-371-1	120-12-7		0.32 mg/kg		0.281 mg/kg	0.0000281 %	✓	
19	• fluoranthene	205-912-4	206-44-0		1.9 mg/kg		1.666 mg/kg	0.000167 %	✓	
20	• pyrene	204-927-3	129-00-0		1.63 mg/kg		1.43 mg/kg	0.000143 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.99 mg/kg		0.868 mg/kg	0.0000868 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	0.68 mg/kg		0.596 mg/kg	0.0000596 %	✓	
23	benzo[k]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.84 mg/kg		0.737 mg/kg	0.0000737 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.32 mg/kg		0.281 mg/kg	0.0000281 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.76 mg/kg		0.667 mg/kg	0.0000667 %	✓	
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		0.36 mg/kg		0.316 mg/kg	0.0000316 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	• benzo[ghi]perylene	205-883-8	191-24-2		0.3 mg/kg		0.263 mg/kg	0.0000263 %	✓	
Total:								0.0346 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

■ chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6

Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium

www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

■ divanadium pentaoxide; vanadium pentoxide (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments:

Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

■ pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

■ fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

• **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **p,p'-methoxychlor** (EC Number: 200-779-9, CAS Number: 72-43-5)

Description/Comments: other names: Methoxychlor; DMDT; Dimethoxy-DDT; Methoxy-DDT; Methoxide; p,p'-Dimethoxydiphenyltrichloroethane; 1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane

Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/112624>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Acute Tox. 4; H332 , Carc. 2; H351 , Repr. 2; H361 , STOT SE 2; H371 , STOT RE 2; H373 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **o,p'-DDD** (EC Number: 200-166-6, CAS Number: 53-19-0)

Description/Comments: other names: Mitotane; o,p'-TDE; 2,4'-DDD; 2,4'-TDE;

Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/10014>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 4; H312 , Carc. 2; H351 , Repr. 1A; H360FD , STOT RE 1; H372 , Aquatic Acute 1; H400 (M=100) , Aquatic Chronic 1; H410 (M=100)

• **o,p'-DDE** (EC Number: 222-318-0, CAS Number: 3424-82-6)

Description/Comments: other names: 2,4'-DDE; 2,2,o,p'-tetrachlorovinylidenebisbenzene

Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/101358>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 4; H302 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **o,p'-DDT** (EC Number: 212-332-5, CAS Number: 789-02-6)

Description/Comments: other names: 2,4'-DDT; 2,2,2,o,p'-pentachloroethylidenebisbenzene

Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/82255>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 3; H311 , Acute Tox. 2; H330 , Carc. 2; H351 , STOT RE 1; H372 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **p,p'-DDD** (EC Number: 200-783-0, CAS Number: 72-54-8)

Description/Comments: other names: Rhothane; p,p'-TDE; 4,4'-DDD; 4,4'-TDE;
Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/21283>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 4; H312 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **p,p'-DDE** (EC Number: 200-784-6, CAS Number: 72-55-9)

Description/Comments: other names: 4,4'-DDE; 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene
Data source: ECHA's C&L inventory database

<https://www.echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database/-/discli/details/21845>

Data source date: 11 Jan 2018

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Acute Tox. 3; H331 , Acute Tox. 4; H332 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

• **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

• **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

• **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

• **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 £ conc. < 3 % , Eye Irrit. 2; H319 1 £ conc. < 3 % , Aquatic Chronic 2; H411

• **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane

Data source: N/a

Data source date: 14 Oct 2016

Hazard Statements: Flam. Liq. 2; H225 , Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 1B; H350 , Aquatic Chronic 3; H412

• **dichlorodifluoromethane** (EC Number: 200-893-9, CAS Number: 75-71-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Aquatic Chronic 3; H412 , Ozone 1; H420 , Press. Gas; H280

• **trichlorofluoromethane** (EC Number: 200-892-3, CAS Number: 75-69-4)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H312 , Ozone 1; H420

■ **2,2-dichloropropane** (EC Number: 209-832-0, CAS Number: 594-20-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332 , Flam. Liq. 2; H225 , Acute Tox. 4; H302 , Acute Tox. 4; H312 , Eye Irrit. 2; H319

■ **bromochloromethane** (EC Number: 200-826-3, CAS Number: 74-97-5)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H312 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Ozone 1; H420

■ **bromodichloromethane** (EC Number: 200-856-7, CAS Number: 75-27-4)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 1A; H360

■ **trans-1,3-dichloropropene** (EC Number: 431-460-4, CAS Number: 10061-02-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Acute Tox. 3; H301 , Asp. Tox. 1; H304 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , Aquatic Chronic 1; H410

■ **1,3-dichloropropane** (EC Number: 205-531-3, CAS Number: 142-28-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332 , Flam. Liq. 2; H225 , Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335

■ **dibromochloromethane** (EC Number: 204-704-0, CAS Number: 124-48-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT SE 3; H336 , Muta. 2; H341 , Aquatic Chronic 2; H411

■ **1,1,1,2-tetrachloroethane** (EC Number: 211-135-1, CAS Number: 630-20-6)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , Carc. 2; H351 , Acute Tox. 4; H312 , Aquatic Chronic 3; H412 , Skin Irrit. 2; H315

■ **tert-butylbenzene** (EC Number: 202-632-4, CAS Number: 98-06-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , Acute Tox. 4; H332 , STOT SE 3; H335 , Asp. Tox. 1; H304 , Aquatic Chronic 2; H411

■ **sec-butylbenzene** (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Chronic 2; H411

■ **4-isopropyltoluene** (EC Number: 202-796-7, CAS Number: 99-87-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Chronic 2; H411

■ **n-butylbenzene** (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **hexachlorobutadiene** (EC Number: 201-765-5, CAS Number: 87-68-3)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 2; H310 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 2; H330 , Carc. 2; H351 , Repr. 2; H361 , STOT SE 2; H371 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **2-nitrophenol** (EC Number: 201-857-5, CAS Number: 88-75-5)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT RE 2; H373 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **bis(2-chloroethoxy)methane** (EC Number: 203-920-2, CAS Number: 111-91-1)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 4; H312 , Acute Tox. 1; H330 , Acute Tox. 2; H330 , STOT SE 1; H370 , STOT RE 2; H373

■ **hexachloroethane** (EC Number: 200-666-4, CAS Number: 67-72-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , STOT RE 2; H373

■ **2-methyl naphthalene** (EC Number: 202-078-3, CAS Number: 91-57-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **dimethyl phthalate** (EC Number: 205-011-6, CAS Number: 131-11-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , STOT SE 3; H335 , STOT SE 3; H336 , Repr. 2; H361 , Aquatic Chronic 3; H412

■ **2-chloronaphthalene** (EC Number: 202-079-9, CAS Number: 91-58-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

■ **4-chlorophenylphenylether** (EC Number: 230-281-7, CAS Number: 7005-72-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **4-bromophenylphenylether** (EC Number: 202-952-4, CAS Number: 101-55-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▪ **diethyl phthalate** (EC Number: 201-550-6, CAS Number: 84-66-2)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , STOT SE 3; H335 , STOT RE 2; H373 , Repr. 2; H361 , Acute Tox. 4; H302 , STOT SE 3; H336 , Skin Sens. 1; H317 , Aquatic Chronic 1; H410

▪ **dibenzofuran** (EC Number: 205-071-3, CAS Number: 132-64-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Acute Tox. 4; H332 , Aquatic Chronic 2; H411

▪ **carbazole** (EC Number: 201-696-0, CAS Number: 86-74-8)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 2; H341 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301

▪ **di-n-octyl phthalate** (EC Number: 204-214-7, CAS Number: 117-84-0)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Repr. 2; H361 , Skin Sens. 1; H317 , Resp. Sens. 1; H334 , Eye Irrit. 2; H319 , Aquatic Chronic 4; H413

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

selenium {selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium selenosulfide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

vanadium {divanadium pentoxide; vanadium pentoxide}

Most conservative species.

zinc {zinc oxide}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass.

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2023.65.5540.10249 (06 Mar 2023)

HazWasteOnline Database: 2023.65.5540.10249 (06 Mar 2023)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

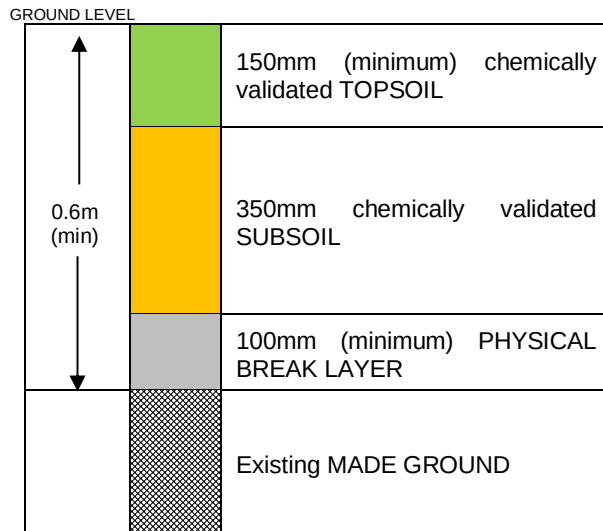
Appendix I

Environmental Cover System Construction

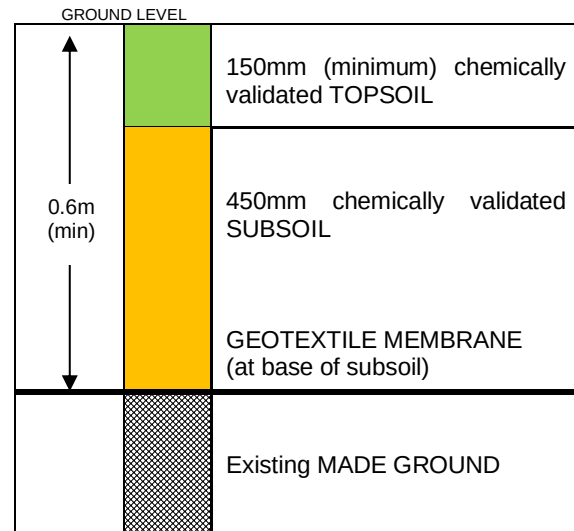
Private Gardens
Shared Landscaping

PRIVATE BACK GARDENS:

Either (physical break layer)

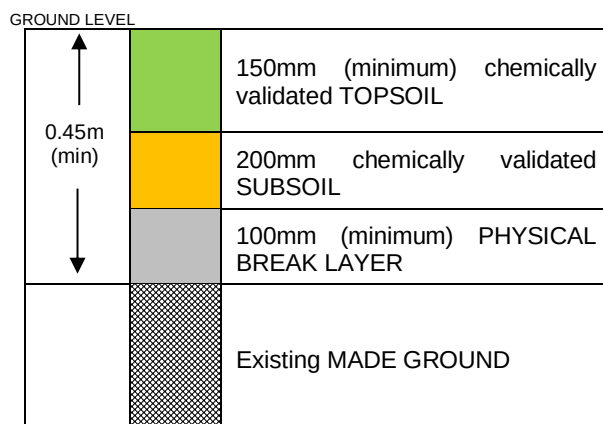


Or (geotextile membrane)

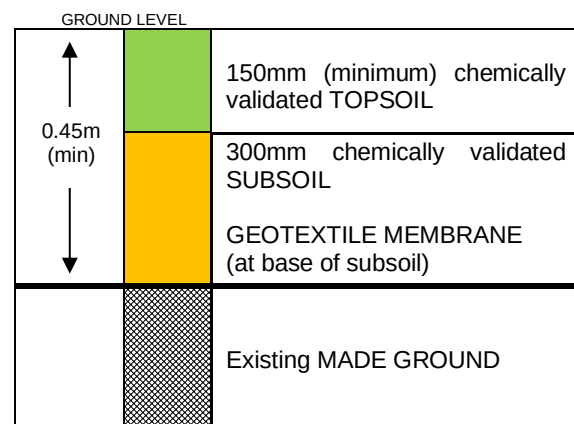


PRIVATE FRONT GARDENS / SHARED LANDSCAPING:

Either (physical break layer)



Or (geotextile membrane)



Hardstood Areas – No Remediation Required

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

Manchester (Head Office)

Unit 29,
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

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

London

Brooklands Business Park
Wellington Way
Weybridge
KT13 0TT

t: 01932 871872
e: info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

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

Liverpool

The Corn Exchange
Fenwick Street
Liverpool
L2 7QL

t: 0151 235 8716
e: info@thelkgroup.com

Swindon

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

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



- » Geotechnical
- » Contaminated Land
- » Flood Risk and Drainage
- » Asbestos
- » Invasive Species
- » Land Remediation
- » Project Management
- » Land Drilling